KWARA STATE POLYTECHNIC, ILORIN

A TECHNICAL REPORT ON STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

Held at

TRAINING AND RESEARCH AGRO BILOGICAL GARDEN, KWARA STATE POLYTECHNIC

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REPORT OVERVIEW

Here is an overview report of the Student Industrial Work Experience Scheme (SIWES), which was carried out at Training And Research Agro Bilogical Garden, Kwara State Polytechnic. The SIWES spanned through a period of FOUR (4) months starting from the August, 2024 to November, 2024. The first chapter of this report comprises of Introduction, background and objectives of SIWES. The second chapter gives a brief description of the establishment of attachment (Training And Research Agro Bilogical Garden, Kwara State Polytechnic)such as location and brief history of establishment, objectives of establishment, organizational structure (including organogram) and the various departments in the establishment and their functions. The third and fourth chapters explicitly explain the work and activities carried out with clear statements on experiences gained. The last chapter contains the summary, conclusion and recommendations.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND OF STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

Student Industrial Work Experience Scheme (SIWES) was established by Industrial Training Fund (ITF) in 1973 to solve the problem of lack of adequate practical skills preparatory for employment in industries by Nigerian graduation of tertiary institution.

The scheme exposes students to industry-based skills necessary for a smooth transition from the classroom to the world of work. It affords students of being familiarized and exposed to the needed. Experience in handling machinery and equipment which are usually not available in the educational institution.

Partaking in SIWES industrial training has become a crucial pre- condition for the award of diploma and degree certificates in specific disciplines in most higher institution learning in Nigeria in line with the government education policies.

1.2 AIMS AND OBJECTIVE OF SIWES

Specifically the objectives of the students industrial experience scheme are:

- Provide are revenue for student in the Nigerian Universities in their courses of study.
- Expose students to work methods and techniques in handling equipment machinery that may not be available in the institution.
- Prepare students for the work situation, they are likely to meet after graduation.

- Make the transition from the university to the world of work easier and turns enhance students' content for later job placement.
- Provide students with an opportunity to apply their theoretical knowledge in real work situation, thereby bridging the gap between university work and actual practice.
- Enlist and strength employers' involvement in the entire educational process of preparing graduates for employment in industry.

1.3 IMPORTANCE OF SIWES

1.3.1 It provides students with an opportunity to apply their theoretical knowledge in real life situation.

1.3.2 It expose student to more practical work methods and techniques.

1.3.3 It strengthens links between the employer and industrial training fund (ITF)

1.3.4 It also prepares the student for the labour market after graduation.

CHAPTER TWO

2.0 BRIEF HISTORY OF ESTABLISHMENT (MARD)

The Training And Research Agro Bilogical Garden is as old as the State itself. At the creation of the State in 1967, it took off with three departments, namely Forestry, Veterinary and Agric Services. Later, Forestry department was exercised to the Ministry of Environment where it is more relevant and renamed Ministry of Agriculture and Rural Development. Subsequently, other important departments of Fisheries, Livestock were created to bring their functions to the disposal of the farmers. As at today, the Training And Research Agro Bilogical Garden has four core departments: Agriculture and Engineering Services, Fisheries, Livestock and Veterinary. Because of the importance of the Ministry to food Security and the need to propagate new methods of farming that will reduce the drudgery of Farming, the Kwara State Agric Development Project (ADP) was established in 1989 while State Fadama Project was established in 2005 as Parastatal/Agency to take the new methods of farming to the doorsteps of farmers in the State. These departments with ADP and Fadama are coordinated by Administrative and Planning, Research and Statistics departments respectively.

2.1 OBJECTIVE OF MARD

The Kwara State Government is committed to the Development and expansion of its Agricultural potential in order to ensure:

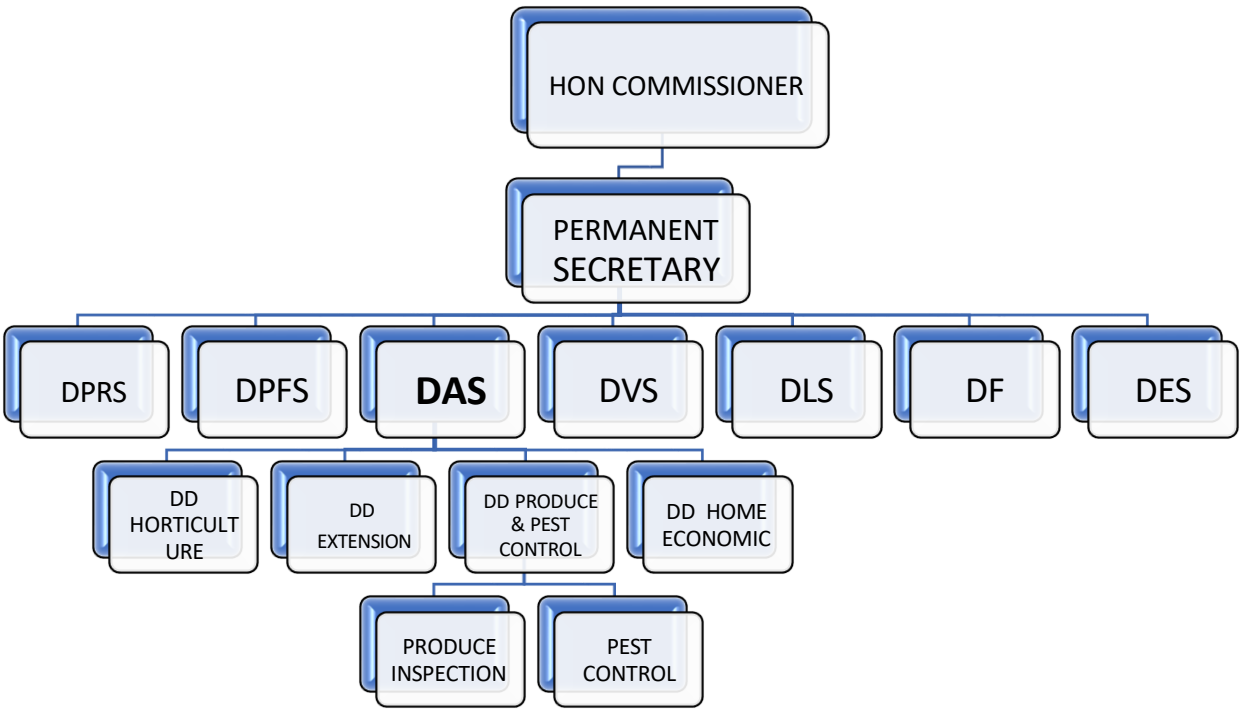
i Food Security for its citizens

ii Transformation of the Agricultural Sector from Subsistence to Commercial farming to support Local Consumption, Export Production and the Generation of raw materials for Agro allied industries.

iii Sustenance of employment generation that would significantly contribute to the internally generated revenue of the State- as well as Socio-economic empowerment of the Citizenry.

2.2 ORGANOGRAM OF TRAINING AND RESEARCH AGRO BILOGICAL GARDEN

ORGANIZATIONAL STRUCTURE OF THE ESTABLISHMENT



KEY

DPRS : DIRECTOR PLANNING RESEARCH AND STASTITICS

DFS : DIRECTOR PERSONEL, FINANCE AND SUPPLY

DAS : DIRECTOR AGRIC SERVICES

DVS : DIRECTOR VETRINARY SERVICES

DLS : DIRECTOR LIVESTOCK SERVICES

DF : DIRECTOR FISHERY

DES : DIRECTOR ENGINEERING SERVICES

DD : DEPUTY DIRECTOR

2.3 BRIEF HISTORY OF DEPARTMENT OF AGRICULTURAL SERVICES

The Agric Services is one of the Six Directorates of the Training And Research Agro Bilogical Garden The Directorate consists of four Divisions. Each of the Divisions has their respective responsibilities to accomplish the Government policies which are hereafter enumerated. But in general, the Directorate is responsible for raising of assorted tree crops seedlings, production of vegetables and ornamental plants. Disseminating information on improved technological approach in farming to the Farmers through the Extension Agents and collection of information for research and agricultural improvement. Improved nutrition training to the Rural Women is the responsibility of the Home Economics of the Directorate. Produce grading, grain storage, produce quality control, pest and weed control activities are the responsibilities of Pest and Produce Division.

2.4. DIVISIONS IN AGRIC SERVICES

2.4.1. EXTENSION DIVISION (CROPS)

Extension division is one of the Divisions in the Agric & Engineering Services Directorate of the Ministry of Agriculture and Natural resources.

The objectives of the Division include among others;

1. Provision of enabling environment for agricultural practitioners in Kwara State.
2. Facilitating availability of agricultural inputs on subsidy where and when necessary.
3. Provision of extension services on crop activities.
4. Co-ordination of the State agricultural programmes and projects to ensure achievement of set targets/objectives and ensuring success of National Policies on agriculture in Kwara State
5. Carrying out independent field researches and in collaboration with Agricultural Researchers to obtain adequate agricultural information in the State.

2.4.2. HORTICULTURE DIVISION.

MANDATE OF THE DIVISION

i. Raising of assorted tree crops and ornamental plants in nurseries where new plants are grown before being sold to the public.

ii. Production of vegetable plants for the public.

iii. Consulting for public about the selection of plants suitable for their needs

iv. Recommending new planting designs or layouts based on client needs, available space, sunlight requirements, and other considerations

2.4.3. PRODUCE/PEST DIVISION.

DUTIES

i. Control of pests on the field and residential

ii. Registration of produce merchants

iii. Grading of quality produce

iv. Storage of produce i.e. grains in the store

v. Storage of fertilizer procured by the State Government

2.4.4. HOME ECONOMICS DIVISION.

There are five [5] Home Economics centers for the processing of food, namely: Offa, Omu-aran, Oyun, Osi and Headquarter. All these centers except Headquarter have been abandoned due to dilapidation of the structures. Meanwhile staff stationed at these stations gets alternative means of discharging their duties.

Center for breast feeding support programme.

This programme was designed to help nursing mothers to be able to breast feed their babies during working hours. The Headquarter and Baboko market centers are the functional ones to date.

CHAPTER THREE

3.0 ACTIVITIES PARTICIPATION AND EXPERIENCE GAINED

During my SIWES program at Department of Agric service, I was able to attend lectures and practical class on;

i) Horticultural crops
ii) Extension methods
iii) Soya beans and soya cheese preparation
iv) Method of pest control

3.1 HORTICULTURE

Horticulture: can be defined as the branch of agriculture that deals with development, growth, distribution and socialization of food, fruits, vegetables and ornamental plants (flowers).

3.1.1 VEGETABLE FARMING

Vegetable are parts of plants that are consumed by humans or other animals as food. Vegetables can be eaten either raw or cooked and it plays an important role in human nutrition, being mostly low in fats and carbohydrates but very high in vitamin, minerals and dietary fiber. Many nutritionists encourage people to consume plenty of fruits and vegetables.

Vegetable farming is the growing of vegetables for human consumption. The practice probably started in several years ago, with families growing vegetables for their own consumption or to trade locally.

3.1.2 PLANTING AND HARVESTING OF JUTE MALLOW (EWEDU)

Ewedu, botanically called *Corchorus olitorius*, is also called jute in the English language. It is a major delicacy in the southwestern part of Nigeria, usually served with an indigenous dish like yam flour and melon soup. This vegetable is very palatable and simple to cultivate. One can make it big from the cultivation of this vegetable.

Planting Ewedu, is very easy but needs some technical approaches to increase yield and profit in the long run. Ewedu cultivation is a very lucrative business.

Land Preparation and Pre-Planting Activities of Planting Ewedu

- A conventional tillage practice is best for planting Ewedu successfully.
- A soil that is well-pulverized aids root development and good growth. Also, decomposed poultry manure should be added to the soil about two weeks before planting.
- Before planting, it is imperative the seeds dormancy are broken to aid fast germination and uniform growth.

Planting Method

Ewedu is best planted on beds, like 1m by 5m. Organic fertilizers are incorporated in the beds about two weeks before planting. There are various systems of planting seeds; we have broadcasting, dibbling, drilling etc.; for vegetable seeds, broadcasting and drilling are the best. In broadcasting, the seeds are evenly dispersed on the bed. In the drilling system, tiny channels are made across the bed with the finger; the seeds are poured on these channels and covered with soil slightly.

For commercial purposes, the broadcasting method is the best. Since the vegetables are to be sold per bed; more plants are gotten from a single bed, thus, making it more profitable. To do this, mix the seeds with dry sand before broadcasting on the beds. This will facilitate even distribution and the seeds are utilized evenly too.

Harvesting of Ewedu plants

Ewedu has a short gestation period; it is ready to harvest at about 4-5 weeks after planting. Harvesting can be done by cutting the plant's stem with a knife or

uprooting the plants completely from the bed. Uprooting the plants completely from the beds is the best because it helps to conserve soil nutrient and rejuvenate the soil.

Post planting activities of Ewedu cultivation

- After planting for about four days Ewedu seedlings emerge; they are very tender and fragile.
- Supply adequate water to ensure to hasten germination and increase yield.
- Apply water daily till after 3 weeks when the vegetables are fully grown.
- Alternate your supply of water to about 3 times in a week.

Fertilization is also crucial to increase yield; this greatly depends on your system of cultivation. If you plan to plant organically; that is, total avoidance of chemical or synthetic materials, you just add manure at about two weeks after planting. But if you decide to plant inorganically; that is, using chemical

3.2 EXTENSION METHODOLOGY

Agricultural Extension involves the dissemination of innovative information to Farmers and his household in other to increase farmer's income, farmer's production, farmer's livelihood

PRINCIPLES OF AGRICULTURAL EXTENSION

* Extension work starts from people i.e. where they are (location)

* Extension is based on clearly stated and specific objectives

* Extension work is based on the cultural needs and interest of the people you are willing to reach

* It should not be forced on people

METHODOLOGY OF EXTENSION

i. Communication

ii. Diffusion: This involves passing the same information to Farmers the same way.

iii. Adoption: This involves the acceptance of innovation

EXTENSION METHODOLOGY OF TECHNOLOGY DESSEMINATION

i. Workshop
ii. Seminar
iii. Conference
iv. Agric shows
v. Field days

EXTENSION TEACHING METHOD

Extension teaching method can be defined as a medium of communication between the instructor and the learner.

QUALITIES OF GOOD EXTENSION AGENT

i. Must be knowledgeable on the field
ii. Don't underrate the farmers
iii. Must be articulate i.e. get yourself prepared
iv. It should be down to earth
v. Be a problem solver

EXTENSION METHOD

1. Individual contact
2. Group contact
3. Mass contact

INDIVIDUAL CONTACT: The extension agent meets the farmer at home or on the farm and discusses issues of mutual interest, giving the farmer both information and advice.

Types of individual method

i. Family and home visit,

ii. Phone calls,

iii. Personal letters,

iv. Result demonstration

GROUP CONTACT**:** It is a method in which a group of interested farmers accompanied and guided by an extension worker, goes on a tour to see and gain first-hand knowledge of improved practices in their natural setting. Is majorly for early and late adopters.

Types of group method

i. Group meeting,

ii. Group discussion

MASS CONTACT**:** An extension worker has to approach a large number of people for disseminating new information & helping them to use it.

Types of mass method

i. Newspaper,

ii. Radio,

iii. Television,

iv. Publications**.**

CHAPTER FOUR

4.1 PREPARATION OF TOFU (SOYABEAN CAKE/BESKE/AWARA)

Tofu is faux cheese made from SoyMilk curds. Awara or Beske is the local name for Tofu amongst Yoruba speaking people in Nigeria.

Tofu is a good source of protein and contains all nine essential amino acids. It is also a valuable plant source of iron and calcium and the minerals manganese and phosphorous (Britannica)

Making Awara/Beske even though it requires a couple of steps is pretty easy. The basic ingredients are Soya beans, Water and a Coagulant. The steps required are just like making Soya Milk but the fun starts once a coagulant is added. What makes Beske / Awara different from other Tofu is the frying. Frying the Awara completes the preparation process. Air frying or baking or grilling are healthier options if you like.

"Beske oni gun merin" is a fun name we called this as kids. Loosely translates as Fried Tofu with four sharp edges.

Ingredient

- Soya (Soy) Beans
- Water
- Coagulant (you can used either Liquified Alum or Vinegar or Lime Juice)
- Salt
- Spices (blitzed peppers are traditionally used)
- Vegetable oil for frying

Procedure

1. Sort the beans to remove impurities especially if you bought the unsorted ones from the open market
2. Rinse thoroughly and soak for a few minutes. The outer coat of Soya beans is a little tough to remove, so soaking for a few minutes will soften it first.
3. Peel the beans to remove the outer coat, rinse and repeat continuously until all the coat is removed.
4. In a blender or industrial mill, grind the beans to a smooth thick paste with water.
5. Add water twice the amount of the paste, into the paste. And mix it till it is loose.
6. Get a sieve cloth (muslin or cheesecloth) the type for Ogi and sieve out the milk from the beans chaff. Squeeze till all the milk is out.
7. Add a little more water to the chaff and squeeze one more time. This is to ensure you get out all the milk.
8. In a large pot (you need a very large pot because soya milk froths over), pour in the raw milk and boil.
9. You will need to stand over the pot as you cook this, to skim off the froth and to watch it to keep it from boiling over.
10. Cook for at least 20 mins, on medium heat, to bring it to a boil
11. Slowly add coagulant, in little bits and watch as the milk splits. Don't add all at once or too much, it may alter the taste and texture if you add too much.
12. Once split, turn the heat off, and strain the milk curds with a sieve cloth and squeeze out all the water.
13. Add salt, and spices and mix in till the spices are well incorporated into the curd.
14. Return into the sieve cloth, tie it in firmly and squeeze further. Place on a

flat surface and place a heavy weighted item on it and leave the rest water to ooze out.

15. Once firm cut to shapes.
16. Deep fry in hot oil until golden brown. A healthier option will be baking or air frying.

4.2 PEST CONTROL

A pest is any organism that Damages crops, livestock and Competes with humans for food, water, or shelter in order to Spreads diseases or causes health risks. Examples of pests are Insects (e.g., mosquitoes, cockroaches, termites) Rodents (e.g., rats, mice) Weeds (e.g., invasive plants) Microorganisms (e.g., bacteria, viruses) Nematodes (e.g., parasitic worms)Fungi (e.g., mold, mildew)

METHODS OF PEST CONTROL:

1. Cultural Control: Modify practices to prevent pest infestations.
2. Physical Control: Use physical barriers or traps.
3. Chemical Control: Use pesticides.
4. Biological Control: Use living organisms to control pests.
5. Integrated Pest Management (IPM): Combine multiple methods.
6. Organic Pest Control: Use natural methods.

Modern Pest Control Methods:

1. Precision Agriculture: Use technology (e.g., drones, satellite imaging) to monitor and control pests.
2. Genetic Engineering: Develop pest-resistant crops.
3. RNA Interference (RNAi): Silence pest genes.
4. Biopesticides: Use microorganisms or natural compounds.

Importance of Pest Control:

1. Prevents crop losses

2. Reduces disease transmission
3. Protects livestock and human health
4. Preserves ecosystem balance
5. Supports food security

Challenges in Pest Control:

1. Resistance to pesticides
2. Environmental concerns
3. Climate change
4. Emerging pests
5. Limited resources

Effective pest control requires a holistic approach, considering ecological, economic, and social factors.

CHAPTER FIVE

5.0 PROBLEM ENCOUNTERED, CONCLUSION AND RECOMMENDATIONS

5.1 PROBLEM ENCOUNTERED

The followings are the problems encountered during the SIWES programme.

1. Unavailability of place of attachment. SIWES is meant to expose the student to various aspects of their field of study and therefore organization should ensure that provision for places of attachment are made available for any student due for the experience. Most students find it difficult to obtain approval from most industries for their training and poor supervision scheme.
2. Another problem encountered was non-exposure to critical works due to the employer's student's non-expertise.
3. Insufficient personal protective equipment

5.2 CONCLUSION

The Student Industrial Work Experience was quite inspiring, updating and revealing. It exposed me to real life situations as it relates to my noble profession. My knowledge of most of the courses taught- topic like extension teaching methods, leadership, monitoring and evaluation, introduction to agricultural extension and rural sociology and agronomy before going for the industrial Training afforded me the opportunity to contribute significantly to the organization and the programme.

The gap between my theoretical classroom experience and the practical knowledge has been closed. Aside this, it has also improved my capacity, social relationships and team work.

5.3 RECOMMENDATIONS

The Student Industrial Work Experience Scheme (SIWES) is a laudable scheme that prepares students for the challenges ahead and for this reason it should be continued. Considering the importance of the scheme and the opportunities available during Industrial Work Experience, below are my recommendations for a more effective scheme:

They should provide more practical facilities so as to ensure that student have a fair practical knowledge of the profession before going on attachment.

Student should be assisted in getting attached to places where needed experience in their field of study can be obtained.

The industry-based supervisor should be contacted and encouraged to meet with the industrial attachés so that there can be room for them to relate for intellectual development.

The departments in various schools should provide students with list of firms and places where experience relevant to the field of study can be obtained.

The school supervisors should keep contacts of industry-based supervisors during their visit to foster good relationship between the department and the firm. As this will go a long way in helping students with placements in the future.