KWARA STATE POLYTECHNIC, ILORIN

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

HELD AT

MINISTRY OF AGRICULTURE & RURAL DEVELOPMENT

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By

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ABSTRACT

Student Industrial Work Experience Scheme (SIWES) is a skill development programme established by Industrial Training Fund (ITF) in 1973 to provide a link opportunity for students to participate in the real world of work, benefit from practical exposure at various institutions offering services relevant to their field of studies and it is aimed at exposing students to the realities of world of work by matching the theoretical classroom knowledge with current practices in the work environment.

This report has attempted to give the overview of all that was done during the four (4) months Industrial Training and the experience gathered in the course of the training at Ministry of Agriculture and Rural Development Ilorin.

Agricultural Services is one of the Department in Ministry of Agriculture and Rural Development which was established to disseminate information on improved technological approach in farming through the Extension agent,

To improve nutrition training to the Rural Women through the Home economics division

To help in the raising of nursery through the horticulture division

TABLE OF CONTENTS

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND OF STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

The Student Industrial Work Experience Scheme (SIWES) was introduced in 1973 by the Industrial Training Fund (ITF), an institution established by the Federal Government of Nigeria to carry out training programme for students in tertiary institutions of the country.

SIWES is more or less skill training programme, which forms part of the approved minimum academic requirement in the various degree programmes for all Universities in Nigeria. It is an effort to bridge the gap existing between theory and practice of Engineering and Technology, Science, Agriculture, Medicine, Management and other professional Education programme in Nigeria tertiary institutions.

It is aimed at exposing students to the operation of machine and equipment, which are usually not available in the educational institutions.

Participation in SIWES has become a necessary pre-condition for the award of Diploma and Degree certificates in specific disciplines in all institutions of higher learning in the country, in accordance with the education policy of government.

Kwara State Polytechnic, Ilorin actively engages her eligible 200level Students on the scheme for a period of four months to the final session. This is the period students are expected to have full Industrial Training Experience.

1.2 OBJECTIVES OF SIWES

Specifically, the objectives of the Student Industrial Work Experience Scheme are to:

1) Certification for different Nigeria Universities to acquire basic industrial skills and experience in their respective course of study.

2) Make students aware of what they are likely expected to meet after their

graduation from the institution.

3) Get students acquainted to different industrial work methods and techniques in handling equipment and machinery that may not be available in the institution.

4) Provide students with an opportunity to apply their theoretical knowledge in real work situation, thereby bridging the gap between institution work and actual practice.

5) Enlist and strengthen employers' involvement in the entire educational process of preparing graduates for employment in industry.

1.3 BRIEF HISTORY OF INDUSTRIAL TRAINING FUND

The Industrial Training Fund (ITF) is a government parastatal established for man power training and development. It was established in line with the post - independence drive for accelerated economic growth and development during the plan period (1970 - 1974). ITF was established with the specific mandate of transforming the Nigerian economy from its predominant dependence on foreign expertise to a state of self-reliance through training and development of Nigerians who would be competent to perform specialized duties required to manage the essential sectors of the Nigerian economy. The training fund has operated consistently and painstakingly within context of its enabling law i.e. decree 47 of 1971. The objective for which the fund was established has been pursued vigorously and efficaciously.

CHAPTER TWO

2.0 BRIEF HISTORY OF ESTABLISHMENT (MARD)

The Ministry 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 Ministry 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

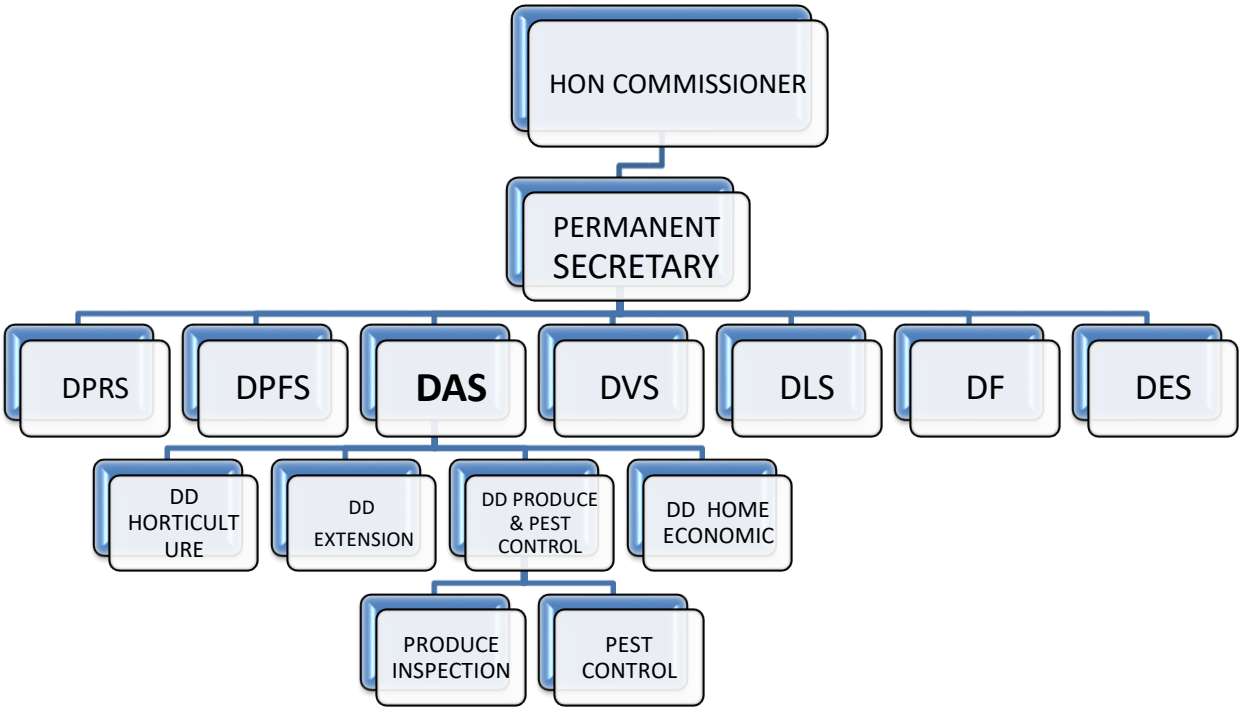
The Kwara State Government is committed to the Development and expansion of its Agricultural potential in order to ensure:

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**2.2 ORGANOGRAM OF MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT**

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 Ministry of Agriculture and rural Resources. 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

Agric Service (AS) is one of the departments that are in the ministry. Agric Service is sub-divided into four different divisions which are;

1. Extension division
2. Horticulture division
3. Home - Economics division
4. Produce and pest division.

CHAPTER THREE

3.0 ACTIVITIES PARTICIPATION AND EXPERIENCE GAINED

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

i) Vegetable farming

ii) Extension methods

iii) Soya beans and soya cheese preparation

3.1 NURSERY PRACTICES

Nursery is simply an intensive plant care-centre where young plants are raised and nurtured to age that can facilitate and ensure their survival when transplanted into field.

GROWING AND HARVESTING OF VEGETABLE (JUTE LEAF)

Jute leaves are very popular and versatile vegetables. They are rich in immune and bone supporting nutrients like calcium and vitamin A & C. Jutes leaves are very common vegetables in West Africa. Steps involved in growing the vegetables are classified into pre-planting, planting and post-planting activities.

Pre-planting includes:

i. Clearing of land: This involves slashing of grasses and shrubs on the place one intends to plant. It is important to ensure that the plot intended to be used have a good drainage system to enable the easy flow of water in order to prevent erosion and flooding which may cause waterlogged.

ii. Tilling: This is necessary to ease the preparation of beds and allow clear aeration of the soil.

iii. Beds making: The bed are made about 1.0m with a small furrow of about 0.5m. the furrow is to allow easy passage when carrying out some post-planting activities e.g. watering, weeding, fertilizer application, spraying etc.

iv. Manuring- Organic manure like dried poultry dropping were be used

Planting: The seed of vegetables is will then be planted using drilling method. It is the method for planting small-seeded vegetables in rows. Shallow furrows are made and the seed drilled along the furrows. The seeds should be mixed in wood ash (sieve the wood ash before mixing it with the seeds) before broadcasting, this helps to prevent root-knot in young plants.

Post-planting activities are:

- Watering of Beds- Wetting of bed should be done daily, either early in the morning or in the evening; this should be done into the harvesting period.
- Weeding- The seeds start germinating 3 or 4 days after planting, weeding would start 2 weeks after germination.
- Thinning and Supplying- Thinning is the process of reducing plants in overcrowded area to give or to make room for the growth of others. Supplying on the other hand is the practice of providing missing stands of vegetables planted by direct sowing as a result of poor emergence or when seedlings are damaged by pests. The essence of seed supply is to maintain correct plant population. Supplying of seeds has to be carried out as early as possible after emergence; both operations should be carried out after first weeding.
- Mulching- A mulch is a layer of plant residue or other materials which is applied to the surface of the soil in order to reduce evaporation, run-off or to prevent weed growth. The purpose of mulching is to conserve soil moisture. Mulching also ensure clean fruit, hasten maturity and increase yields. This operation should be done 3 weeks after planting.
- Fertilizer Application- Fertilizers like urea is best for leafy vegetables, but its best one makes use of both fertilizers and organic manure. Knapsack sprayer is used to spray the fertilizer on the vegetables.

3.2 EXTENSION DIVISION

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

ADOPTION OF INNOVATION

Adoption is the process of transferring innovative ideas, knowledge to Farmers in other to accept for practice.

PROCESS OF ADOPTION

i Awareness

ii Evaluation

iii Interest

iv Adoption

v Trial

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

CHAPTER FOUR

4.0 ACTIVITIES PARTICIPATION AND EXPERIENCE GAINED

4.1 PRODUCE AND PEST CONTROL

It is imperative to control pest attacking produce of plants since each crop has one or two pests attacking them and this will lead to total loss or damage of the crops if not well managed.

Pest can be defined as organisms that causes damage or infestation to agricultural produce. Examples include termites, grasshopper, bean weevils, cockroach, rats etc. The different types of pests are field pest, house pest and storage pest

Field Pest: These are insects and mites that damage crops, weeds that compete with field crops for nutrients and water, plants that choke irrigation channels or drainage systems, rodents that eat young plants and grain, and birds that eat seedlings or stored foodstuffs. Examples include locusts, grasshoppers and caterpillar

House Pest: They are animals and insects that live in the house. They are harmful insects and animals. They are dangerous to health. They often carry diseases. They are commonly found in dirty houses and surroundings e.g rats, cockroaches etc.

Storage Pest: A storage pest is any organism which causes damage to farm produce in storage. Examples include bean weevils.

Method of Controlling Pest

This involves reducing the number of pests attacking agricultural produce to minimal. This is very important so that their will be minimal/low damage and no loss in agricultural produce. The methods are:

Cultural: Cultural methods of pest management include use of resistant varieties, tillage, mulching, hand weeding and hoeing, pruning, trapping and hand picking of insects and weeds, and the use of physical barriers such as row covers and sticky bands.

Physical: Physical control refers to mechanical or hand controls where the pest is actually attacked and destroyed. Physical controls are used mostly in weed control. Tillage, fire, removal by hand, grazing and mowing are all used to destroy weeds and prevent reproduction.

Chemical: The most well-known way of controlling pests is by using pesticides and rodenticides. Chemical types of pest control have been seen as reliable, and tackle a large portion of the pest population. Pesticides are usually used in certain circumstances where no other method will work.

Mechanical: Mechanical and physical controls kill a pest directly or make the environment unsuitable for it. For example, traps - for pest animals and insects; mulches - for weed management; steam sterilization - for soil disease management; or barriers - such as screens or fences to keep animals and insects out.

Application of Pesticides

- Selective (Effective on specific plants)
- Non-Selective (This is use when the land has been cleared and new farmland is to be established. It is effective on random plants)
- Contact (It is effective on the leaves and flower but the root is not affected)
- Systemic (Effective on the root, but it takes 3-5days before it becomes visible)

3.5.1 Symptoms of not properly applied herbicides

- Vomiting
- Skin irritation
- Dizziness
- Blurred vision
- Dehydration
- Skin diseases
- Death

Safety precautions to follow while applying herbicides

- Wear overall
- Novet
- Avoid Eye contact

4.2 PROCESSING OF SOYA-BEANS

soyabeans are processed to produce different varieties of food e.gBeske (Tofu) and Soya milk. These processed produces can then serve as source of food both to the processor and the consumer or as source of income to the processor. In Ministry of Agriculture, I learned how to make Beske and Soya milk using soyabeans.

4.2.1 Soya Milk Making

The steps involve in making soya milk includes:

1. Picking out of the soyabeans to be used. Ensure that stones are removed.
2. Soaking the picked soyabeans in water for 3- 4 hours. This is to ensure that the beans are soft enough for grinding.
3. Grinding of the soaked soyabeans until finely smooth. This is done either by using a grinding machine or a grinder with enough water.
4. Sieving out the liquid part of the grinded soyabeans. This is then set apart.
5. Pour the liquid soyabeans into a pot and then put on fire and allow to cook for 45 minutes or more.
6. While cooking, it becomes foamy at the surface. To avoid spilling and for it to be properly cooked, it is required that one continually stir it. Doing this will make the foam to reduce and gradually becomes leathery-like/milky.
7. When the milky liquid is clear and few bubbles seems to be present, on can stop the stirring and allow it to cook well on fire for few more minutes.
8. After it has been well cooked, pour the liquid in a neat bowl and add salt & sugar (to one's taste since they are not necessary) and stir.
9. The soya milk is now ready for drinking. It can be served hot or allow to cool down by putting in a refrigerator.
10. It is to be noted that the soya milk can only last for 6-7 hours as it will begin to ferment and coagulates afterwards.

4.2.2 Beske (Tofu) Making

This is another thing that soyabeans can be processed into. The steps in making Beske are:

- Picking out the soyabeans
- Soaking the soyabeans for about 30-60 minutes in water
- The soaked soyabeans will then be grinded until finely smooth using a grinding machine/ grinder
- After grinding, sieve out the liquid portion of the grinded soyabeans.
- Pour the liquid portion into a pot and place on fire to cook, add a moderate amount of fermented Ogi water (it helps the liquid to coagulates)
- On cooking, salt and seasoning is added including dry grinded pepper. This is done to make it tasty and it is left to cook until it is well coagulated.
- Transfer the coagulated portion into a clothing material used for sieving, tighten it up and put under a manual press machine (this is done in order to sieve out the excess water for about 20-30minutes).
- Transfer into a tray and cut into your desire shape then fry with vegetable oil.
- Beske is now ready for eating. It can be eaten alone and it can be served in meals a s well

CHAPTER FIVE

5.0 PROBLEMS ENCOUNTERED, RECOMMENDATIONSAND CONCLUSION

5.1 PROBLEMS ENCOUNTERED DURING THE PROGRAM

There were quite a number of problem and challenges during the industrial attachment program. These problems include;

- Limited number of equipment was available which made work slow, tiring and time wasting

- Inadequate monitoring of students on industrial training
- There was low level of infrastructures
- The distance from home to place of attachment is quite far and sometimes caused delay in arriving to work.

5.2 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:

The institution 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.

5.3 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 as an

Agricultural Extension agent. 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.