



NATIONAL BOARD FOR TECHNICAL EDUCATION

PLOT B BIDA ROAD, P.M.B. 2239, KADUNA, NIGERIA

IN COLLABORATION WITH



NATIONAL OCCUPATIONAL STANDARDS (NOS)

FISH HATCHERY MANAGEMENT LEVELS 1 - 3

JUNE, 2026



**RENEWED HOPE
IN AGRICULTURE**

PREFACE

The development of the National Occupational Standards (NOS) for the agricultural sector marks another important milestone in Nigeria's commitment to strengthening Technical and Vocational Education and Training (TVET), promoting skills development, and improving workforce productivity. These standards have been developed to provide nationally recognized benchmarks for the knowledge, skills, and competencies required for effective performance in various agricultural occupations. The National Occupational Standards were developed through a collaborative process involving industry experts, employers, professional bodies, regulatory agencies, training institutions, development partners, and other key stakeholders. Their contributions ensured that the standards reflect current industry practices, emerging technologies, and the competency requirements of the modern agricultural sector. I wish to express my sincere appreciation to the Honourable Minister of Education for providing the policy direction that made this initiative possible. I also acknowledge the support of the Honourable Minister of Agriculture and Food Security and the Honourable Minister of Livestock Development for their commitment to advancing agricultural skills development in Nigeria. I extend my profound gratitude to the Tertiary Education Trust Fund (TETFund) for its intervention and support, which facilitated the development of these National Occupational Standards. I also appreciate the invaluable contributions of the Sector Skills Council for Agriculture (SSC4A), members of the Implementation Committee, resource persons, industry practitioners, employers, professional associations, regulatory agencies, the French Embassy in Nigeria, development partners, and all stakeholders who contributed their expertise throughout the development process. These National Occupational Standards will serve as an important reference for competency-based training, assessment, certification, apprenticeship, Recognition of Prior Learning (RPL), and workforce development within the agricultural sector. It is my expectation that all implementing institutions and industry partners will effectively utilize these standards to enhance the quality, relevance, and competitiveness of agricultural skills development in Nigeria. I commend all stakeholders for their dedication and commitment to this important national assignment and look forward to the successful implementation of these National Occupational Standards for the benefit of the agricultural sector and the nation as a whole.

Professor Idris M. Bugaje, FNSE
Chairman, Implementation Committee

EXECUTIVE SECRETARY

National Board for Technical Education (NBTE), Kaduna

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NATIONAL SKILLS QUALIFICATION (NSQ)



JULY, 2026

NATIONAL SKILLS QUALIFICATION

GENERAL INFORMATION

OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in Fish Hatchery Management for the award of National Skills Qualifications (NSQ)/National Occupational Standards (NOS). It is aimed at producing the competencies necessary to support Fish Hatchery Management at NSQ Level One (1).

This qualification is subject to review as and when the need arises.

QUALIFICATION PURPOSE

The qualification is designed to produce a competent entry-level Fish Hatchery Assistant I with the knowledge, skills and attitude required to perform routine fish hatchery management activities under supervision using basic precision agriculture principles and tools.

QUALIFICATION REQUIREMENTS

All Candidates must be:

- At least sixteen (16) years of age
- Medically fit
- Mentally fit (Mental alertness)
- A Nigerian citizen
- Other nationals should present international passport, residence permit or Parent work permit.
- Vetted
- Interest in agricultural production and related support operations;
- Ability to carry out simple practical tasks under supervision.

QUALIFICATION OBJECTIVES

At the end of this qualification, the learner should be able to:

- i. Communicate effectively in the Fish Hatchery Management workplace;
- ii. Work effectively as a member of a hatchery team to support routine fish hatchery operation;
- iii. Apply workplace health, safety and hygiene practices during fish hatchery operation;
- iv. Identify fish broodstock and the basic reproductive stages of fish used in hatchery production;
- v. Identify hatchery facilities and equipment and carry out basic maintenance;
- vi. Assist in carrying out basic fish breeding operations;
- vii. Assist in egg incubation and larval care using Standard Operating Procedures (SOPs)

NATIONAL SKILLS QUALIFICATION/NATIONAL OCCUPATIONAL STANDARDS (NOS) TABLE

MANDATORY UNITS

Unit	Unit Reference Number	Unit Title	Credit Value	Guided Learning Hours	Practice Time (Hours)	Remarks
1	AGR/FHM/001/L1	Communication in Fish Hatchery Management	1	10	60	Mandatory
2	AGR/FHM/002/L1	Teamwork in Fish Hatchery Management	2	20	20	Mandatory
3	AGR/FHM/003/L1	Workplace Health and Safety	2	20	20	Mandatory
4	AGR/FHM/004/L1	Fish Broodstock and Reproductive Stages	4	40	60	Mandatory
5	AGR/FHM/005/L1	Hatchery Facilities and Equipment Maintenance	3	30	60	Mandatory
6	AGR/FHM/006/L1	Fish Breeding Operations	4	40	80	Mandatory
7	AGR/FHM/007/L1	Egg incubation and Larval Care	3	30	60	Mandatory
TOTAL			19	190	360	

QUALIFICATION STRUCTURE

This qualification comprises a total of seven (7) Mandatory and Optional Units, with a credit value of **19** and **190** Guided Learning Hours (GLH) across the full qualification. One (1) credit is equivalent to ten (10) GLH. Guided Learning Hours are the time a learner spends in the classroom, workshop and laboratory of the Skills Training Centre (STC), being taught, instructed, supervised or assessed by a qualified trainer, facilitator or assessor.

In addition to the GLH, the qualification requires at least twice or thrice the GLH as practice time. Practice time is the time a learner is expected to spend applying the skills of each unit in a real workplace environment, carrying out the same tasks repeatedly until performance becomes consistent, accurate and habitual to the standard the qualification demands. It is undertaken under the guidance of a workplace supervisor, recorded in the learner's logbook and duly endorsed. Practice time is the principal setting where core assessment is conducted. It is through repeated performance in the workplace that a learner's achievement of the

Learning Outcomes and Performance Criteria is judged and evidenced. Practice time is an additional requirement to GLH and does not replace them.

To achieve this qualification, the learner must complete all mandatory units, undertake the prescribed practice time, and accumulate the minimum credit value approved by NBTE. Credit is awarded only when a learner has been assessed as competent against all Learning Outcomes and Performance Criteria of a unit.



GENERAL GUIDE

Unit title	Provides a clear explanation of the content of the unit.
Unit number	The unique number assigned to the unit.
Unit reference	The unique reference number given to each unit at qualification approval by NBTE
Unit level	Denotes the level of the unit within the National Skills Qualification Framework (NSQF).
Unit credit value	The value that has been given to the unit based on the expected learning time for an average learner. 1 credit = 10 learning hours
Unit aim	Provides a brief outline of the unit content.
Learning outcome	A statement of what a learner will know, understand or be able to do, as a result of a process of learning.
Assessment criteria	A description of the requirements a learner must achieve to demonstrate that a learning outcome has been met.
Unit assessment guidance	Any additional guidance provided to support the assessment of the unit.
Unit guided learning hours	The average number of hours of supervised or directed study time or assessment required to achieve a qualification or unit of a qualification.

Unit 001: Communication in Fish Hatchery Management

Unit Reference Number: AGR/FHM/001/L1

NSQ Level: 1

Credit Value: 1

Guided Learning Hours: 10

Practice Time: 60 Hours

Unit Purpose: This unit is designed to equip learners with knowledge and skills in simple communication techniques in the Fish Hatchery Management workplace.

Unit assessment requirements/ evidence requirement:

Assessment must be conducted in a real workplace where learning and human development occur.

Assessment methods to be used include:

1. Direct Observation (DO)
2. Witness Testimony (WT)
3. Personal Statement (PS) or Reflective Practice (RP)
4. Work Product (WP)
5. Recognition of Prior Learning (RPL)
6. Assignment (ASS)



Unit 001: Communication in Fish Hatchery Management

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.
LO 1: Use appropriate means of communication in the workplace	1.1	Use a verbal means to pass on necessary information		
	1.2	Use non-verbal means to convey necessary information.		
	1.3	Interpret symbols and signs appropriately		
LO 2: Source for information in a workplace	2.1	Identify the sources of information in the workplace		
	2.2	Relate effectively with the source of information		
	2.3	Use the different information flow systems in a workplace.		
LO 3: Apply various means of communication in a workplace	3.1	Locate the various communication equipment in the workplace.		
	3.2	Use the various communication equipment effectively in a workplace.		
	3.3	Pass information effectively to the right personnel		
	3.4	Obey instructions in line with the ethics of the workplace.		
Learners Signature:			Date:	
Assessors Signature:			Date:	
IQA Signature (if sampled)			Date:	
EQA Signature (if sampled)			Date:	

Unit 002: Teamwork in Fish Hatchery Management

Unit Reference Number: AGR/FHM/002/L1

NSQ Level: 1

Credit Value: 2

Guided Learning Hours: 20

Practice Time: 20 Hours

Unit Purpose: This unit is designed to equip learners with the knowledge and attitudes required to work effectively with others in a Fish Hatchery Management workplace.

Unit assessment requirements/ evidence requirements: Assessment must be carried out in real workplace environment in which learning and human development is carried out

Assessment methods to be used include:

1. Direct Observation (DO)
2. Witness Testimony (WT)
3. Personal Statement (PS) or Reflective Practice (RP)
4. Work Product (WP)
5. Recognition of Prior Learning (RPL)
6. Assignment (ASS)



Unit 002: Teamwork in Fish Hatchery Management

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.
LO 1: Identify team roles and responsibilities in fish hatchery management	1.1	Identify members of the team.		
	1.2	Identify the roles of the team members.		
	1.3	Describe own duties and responsibilities within the team.		
	1.4	Recognize reporting lines and supervisory structures.		
LO 2: Take responsibility within the team	2.1	Recognize own role and responsibilities within a team		
	2.2	Perform individual tasks in line with the team's rules and regulations		
	2.3	Participate effectively in team work		
LO 3: Work in line with organization standards	3.1	Explain the organizational code of conduct		
	3.2	Work in line with the organizational standard		
	3.3	Use the organizational code of practice		
	3.4	Adhere strictly to instructions given by superior		
	3.5	Treat colleagues with courtesy and respect.		
Learners Signature:			Date:	
Assessors Signature:			Date:	
IQA Signature (if sampled)			Date:	
EQA Signature (if sampled)			Date:	

Unit 003: Workplace Health and Safety

Unit Reference Number: AGR/FHM/003/L1

NSQ Level: 1

Credit Value: 2

Guided Learning Hours: 20

Practice Time: 20 Hours

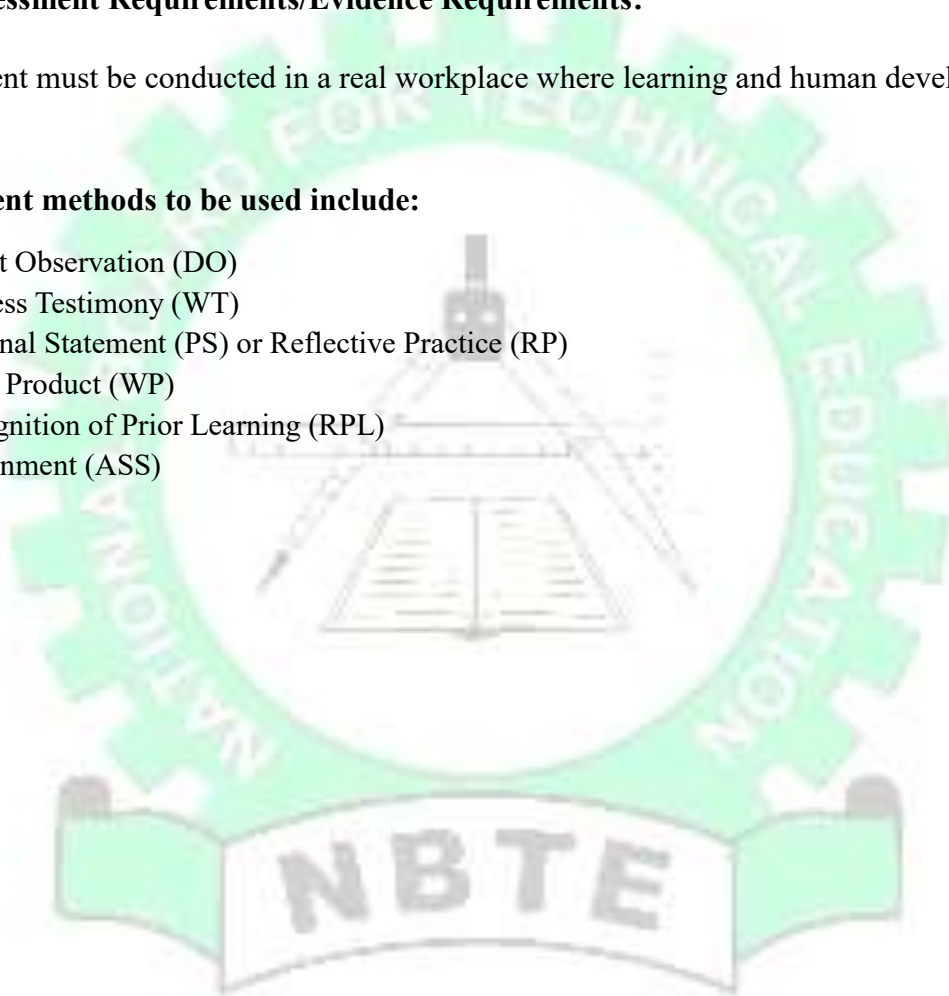
Unit Purpose: This unit equips learners with the knowledge and skill to maintain a safe, healthy, and hygienic fish hatchery workplace.

Unit Assessment Requirements/Evidence Requirements:

Assessment must be conducted in a real workplace where learning and human development occur.

Assessment methods to be used include:

1. Direct Observation (DO)
2. Witness Testimony (WT)
3. Personal Statement (PS) or Reflective Practice (RP)
4. Work Product (WP)
5. Recognition of Prior Learning (RPL)
6. Assignment (ASS)



Unit 003: Workplace Health and Safety

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type				Evidence Ref. Page No.			
<i>LO 1: Identify basic workplace hazards</i>	1.1	Explain common hazards in workplace.								
	1.2	Recognize hazards in the workplace								
	1.3	Report hazards to the appropriate personnel.								
<i>LO 2: Use Personal Protective Equipment (PPE)</i>	2.1	Identify PPE required for activities.								
	2.2	Select appropriate PPE for assigned tasks								
	2.3	Wear PPE correctly before commencing work.								
	2.4	Maintain PPE in a serviceable condition.								
<i>LO 3: Follow Safe Work Practices</i>	3.1	Carry out workplace safety procedures.								
	3.2	Use tools and equipment safely under supervision								
	3.3	Avoid unsafe action that may cause accidents.								
<i>LO 4: Maintain Personal Hygiene</i>	4.1	Carry out personal cleanliness before entering hatching areas								
	4.2	Sanitize hands and legs according to workplace procedures								
	4.3	Follow workplace hygiene requirements consistently.								
<i>LO 5: Respond to accidents/injury in the hatchery</i>	5.1	Locate the first aid facility								
	5.2	Use basic dressing materials								
	5.3	Carry out instructions given by supervisor								

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref.	Page No.
	5.4	Report accident/injury to the appropriate supervisor			
Learners Signature:			Date:		
Assessors Signature:			Date:		
IQA Signature (if sampled			Date:		
EQA Signature (if sampled)			Date:		



Unit 004: Fish Broodstock and Reproductive Stages**Unit Reference Number:** AGR/FHM/004/L1**NSQ Level:** 1**Credit Value:** 4**Guided Learning Hours:** 40**Practice Time:** 60 Hours

Unit Purpose: This unit is designed to equip learners with knowledge and skill to recognize ripe brood fish.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used include:

1. Direct Observation (DO)
2. Questions and Answers (QA)
3. Witness Testimony (WT)
4. Assignment (ASS)
5. Recognition of Prior Learning (RPL)/Accreditation of Prior Learning (APL)

Unit 004: Fish Broodstock and Reproductive Stages

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: Identify broodstock and its role in fish seed production.	1.1	Identify broodstock.		
	1.2	State the purpose of broodstock in fish breeding and seed production.		
	1.3	Identify common broodstock species used in aquaculture.		
	1.4	Distinguish between a mature fish and a brood fish selected for breeding		
LO 2: Carry out the selection of healthy broodstock.	2.1	Identify healthy broodstock based on physical appearance		
	2.2	Identify basic characteristics of good broodstock, including size, age, body condition, and free from disease or injury.		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
	2.3	Select healthy broodstock under supervision.		
LO 3: Distinguish between male and female broodstock.	3.1	Identify the external characteristics of male broodstock.		
	3.2	Identify the external characteristics of female broodstock.		
	3.3	Differentiate male from female broodstock using observable features.		
	3.4	Handle broodstock carefully during identification under supervision.		
LO 4: Identify the reproductive stages of brood fish.	4.1	List the reproductive stages of brood fish: immature, maturing, ripe (gravid) and spent.		
	4.2	Identify each reproductive stage using live specimens, photographs or charts.		
	4.3	Arrange the reproductive stages in their correct sequence.		
	4.4	Recognise the external signs of a ripe female and a running (milting) male.		
	4.5	Distinguish the reproductive stages from the developmental stages of fish (egg, larva, fry, fingerling, juvenile and adult).		
Learners Signature:			Date:	
Assessors Signature:			Date:	
IQA Signature (if sampled			Date:	
EQA Signature (if sampled)			Date:	

Unit 005: Hatchery Facilities and Equipment Maintenance

Unit Reference Number: AGR/FHM/005/L1

NSQ Level: 1

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 60 Hours

Unit Purpose: This unit is designed to equip learners with knowledge and skill required to prepare fish hatchery facility and equipment for breeding.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used include:

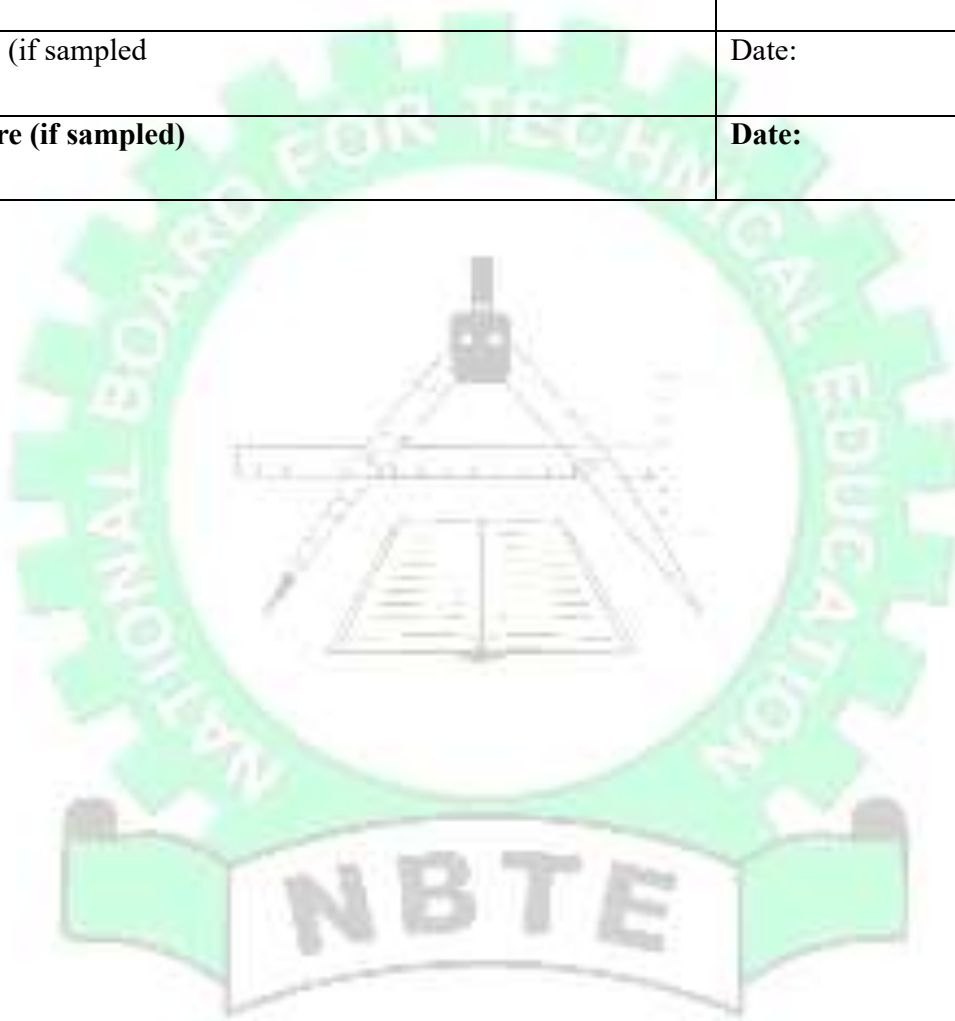
1. Direct Observation (DO)
2. Questions and Answers (QA)
3. Witness Testimony (WT)
4. Assignment (ASS)
5. Recognition of Prior Learning (RPL)/Accreditation of Prior Learning (APL)



Unit 005: Hatchery Facilities and Equipment Maintenance

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: Identify hatchery facilities and equipment.	1.1	Identify basic hatchery facilities and their functions.		
	1.2	Identify basic hatchery equipment		
	1.3	Identify basic hatchery materials		
	1.4	Describe the use of hatchery equipment.		
	1.5	Describe the use of hatchery materials.		
LO 2: Clean hatchery facilities and equipment.	2.1	Wash hatchery equipment and other materials.		
	2.2	Clean equipment using appropriate detergents.		
	2.3	Dispose of waste according to workplace procedures.		
LO 3: Disinfect hatchery facilities and equipment.	3.1	Identify different disinfectants.		
	3.2	Select appropriate disinfectants.		
	3.3	Prepare disinfectant solutions according to instructions.		
	3.4	Disinfect facilities and equipment.		
	3.5	Store equipment safely.		
LO 4: Inspect hatchery facilities and equipment.	4.1	Identify faulty or damaged equipment.		
	4.2	Identify damaged facility		
	4.3	Check tanks, trays, jars, nets, and other equipment for cleanliness and damage.		
	4.4	Report faults to the supervisor.		
LO 5: Prepare the hatchery for operations.	5.1	Arrange equipment according to hatchery layout.		
	5.2	Ensure water supply and drainage systems are operational.		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
	5.3	Ensure aeration and other essential systems are functional.		
Learners Signature:			Date:	
Assessors Signature:			Date:	
IQA Signature (if sampled)			Date:	
EQA Signature (if sampled)			Date:	



Unit 006: Fish Breeding Operations**Unit Reference Number:** AGR/FHM/006/L1**NSQ Level:** 1**Credit Value:** 4**Guided Learning Hours:** 40**Practice Time:** 80 Hours

Unit Purpose: This unit is designed to equip learners with knowledge and skill to assist in fish breeding.

Unit assessment requirements/ evidence requirements: Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used include:

1. Direct Observation (DO)
2. Witness Testimony (WT)
3. Personal Statement (PS) or Reflective Practice (RP)
4. Work Product (WP)
5. Recognition of Prior Learning (RPL)
6. Assignment (ASS)

Unit 006: Fish Breeding Operations

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: Identify fish breeding operations and their importance in aquaculture.	1.1	Identify fish breeding operations.		
	1.2	State the importance of fish breeding in aquaculture.		
	1.3	List the stages involved in fish breeding operations.		
LO 2: Identify the main components of a fish breeding operation.	2.1	Identify the following: • Hormone; • Syringes and needles; • Handling towel; • Normal saline; • Salt; • Broodstock; • Egg mat; • Hatchery troughs; • Rearing tanks;		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
		Screen net		
	2.2	State the function of each component.		
	2.3	Identify common fish species used in hatchery breeding.		
LO 3: Carry out the sequence of fish breeding activities.	3.1	Outline broodstock selection procedures.		
	3.2	Describe spawning, fertilization, egg incubation, hatching, and larval rearing in the correct order.		
	3.3	State the purpose of each stage.		
LO 4: Apply hatchery biosecurity practices.	4.1	State the importance of hygiene and water quality during breeding operations.		
	4.2	Apply good hygiene practices in the hatchery under supervision.		
	4.3	Follow the biosecurity measures used in the hatchery under supervision.		
Learners Signature:			Date:	
Assessors Signature:			Date:	
IQA Signature (if sampled)			Date:	
EQA Signature (if sampled)			Date:	

Unit 007: Egg Incubation and Larval Care

Unit reference number: AGR/FHM/007/L1

NSQ Level: 1

Credit value: 3

Guided learning hours: 30

Practice Time: 60 Hours

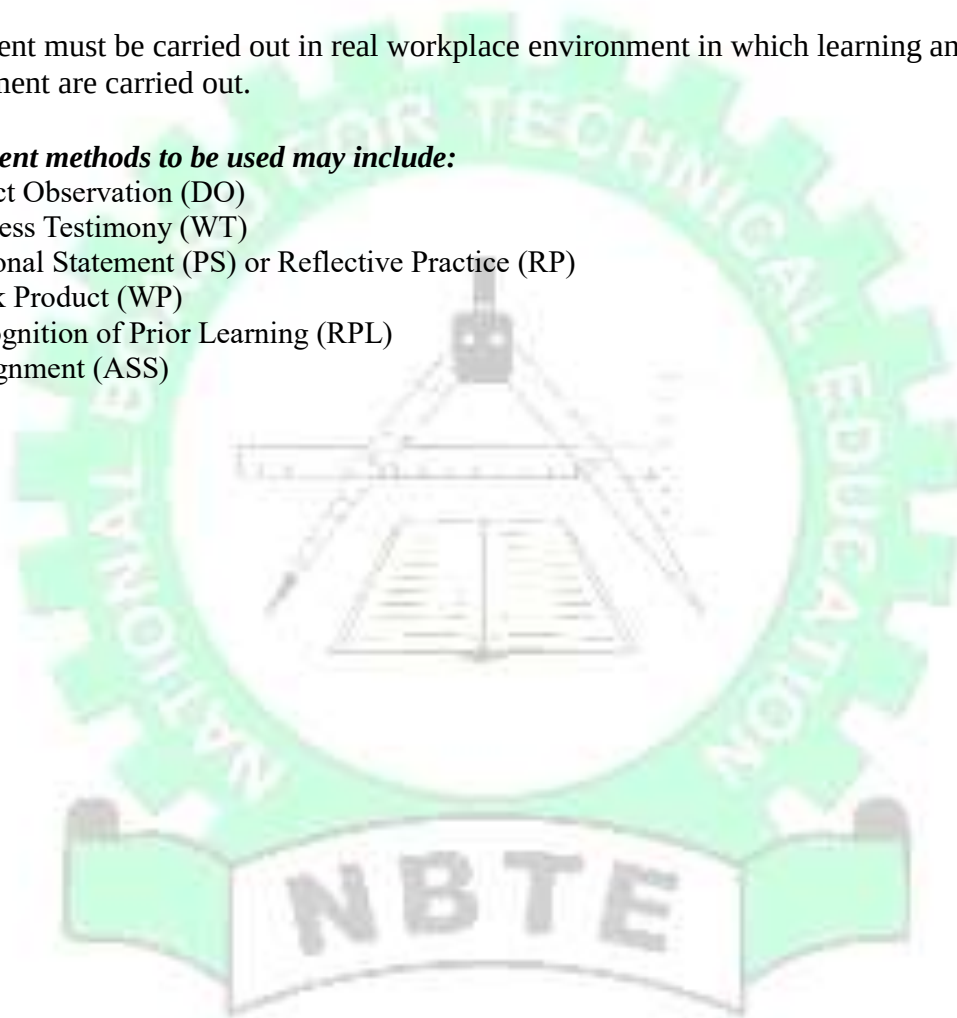
Unit Purpose: This unit is designed to equip learners with knowledge and skill required to assist in fish egg incubation and early larval care.

Unit assessment requirements/ evidence requirement:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Witness Testimony (WT)
3. Personal Statement (PS) or Reflective Practice (RP)
4. Work Product (WP)
5. Recognition of Prior Learning (RPL)
6. Assignment (ASS)



Unit 007: Egg Incubation and Larval Care

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref.	Page No.
The learner will:		The learner can:			
LO 1: Maintain equipment and materials used for egg incubation and larval care.	1.1	Identify egg incubation equipment.			
	1.2	Identify egg incubation material and consumables for hatchery operations			
	1.3	Clean incubation equipment before use			
	1.4	Disinfect incubation equipment after use.			
	1.5	Report damaged, missing or malfunctioning equipment to the supervisor			
	1.6	Store equipment and materials properly after use			
LO 2: Carry out egg incubation and larval care in fish hatchery production.	2.1	Describe handling of fertilized fish eggs.			
	2.2	Clean incubation trays, jars or tanks before use			
	2.3	Arrange incubation trays, jars or tanks for use			
	2.4	Describe eggs placement into incubators according to procedures			
LO 3: Maintain suitable water quality during egg incubation.	3.1	Maintain recommended water flow and cleanliness throughout incubation.			
	3.2	Identify acceptable water clarity and cleanliness for egg incubation.			
	3.3	Observe unusual changes in water colour and odour.			
	3.4	Report the changes in water colour and odour.			

LO 4: Monitor incubating eggs and identify healthy and dead eggs	4.1	Observe incubated eggs closely.													
	4.2	Identify suitable water flow and aeration during egg observation.													
	4.3	Maintain cleanliness and hygiene of incubation unit while handling eggs													
LO 5: Carry out clean and hygienic conditions in the hatchery.	5.1	Wear appropriate Personal Protective Equipment (PPE)													
	5.2	Clean hatchery according to established procedure													
	5.3	Dispose solid and liquid waste in the designated disposal areas													
Learners Signature:		Date:													
Assessors Signature:		Date:													
IQA Signature (if sampled)		Date:													
EQA Signature (if sampled)		Date:													



NATIONAL SKILLS QUALIFICATION (NSQ)

LEVEL 2

FISH HATCHERY MANAGEMENT

JULY, 2026

GENERAL INFORMATION

OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in Fish Hatchery Management for the award of National Skills Qualifications (NSQ)/National Occupational Standards (NOS). It is aimed at producing the competencies necessary to carry out fish breeding and hatchery operations with minimal supervision at NSQ Level 2.

This qualification is subject to review as and when the need arises.

QUALIFICATION PURPOSE

The qualification is designed to produce a competent Fish Hatchery Assistant II with the knowledge, skills and attitude required to perform routine fish breeding and hatchery management activities under minimal supervision using basic precision agriculture principles and tools.

QUALIFICATION REQUIREMENTS

All Candidates must be:

- At least seventeen (17) years of age
- Medically fit
- Mentally fit (Mental alertness)
- A Nigerian citizen
- Other nationals should present international passport, residence permit or Parent work permit.
- Vetted
- Interest in agricultural production and related support operations;
- Ability to carry out routine practical tasks with minimal supervision.

QUALIFICATION OBJECTIVES

At the end of this qualification, the learner should be able to:

- i. Communicate effectively with supervisors, colleagues, customers, and other stakeholders in fish breeding and hatchery operations.
- ii. Work effectively as a member of a team to achieve hatchery production goals and maintain a productive work environment.
- iii. Apply workplace health, safety, hygiene, and environmental practices to ensure safe and efficient hatchery operations.
- iv. Manage broodstock by selecting, conditioning, feeding, and maintaining healthy breeding fish for optimum reproductive performance.
- v. Carry out artificial breeding techniques, including induced spawning, gamete collection, fertilization, and handling of breeding materials.
- vi. Manage egg incubation and fry production by monitoring incubation conditions, hatching eggs, and rearing healthy fry to the required standard.
- vii. Produce quality fish seed through appropriate breeding, nursery, and stock management practices to meet industry requirements.

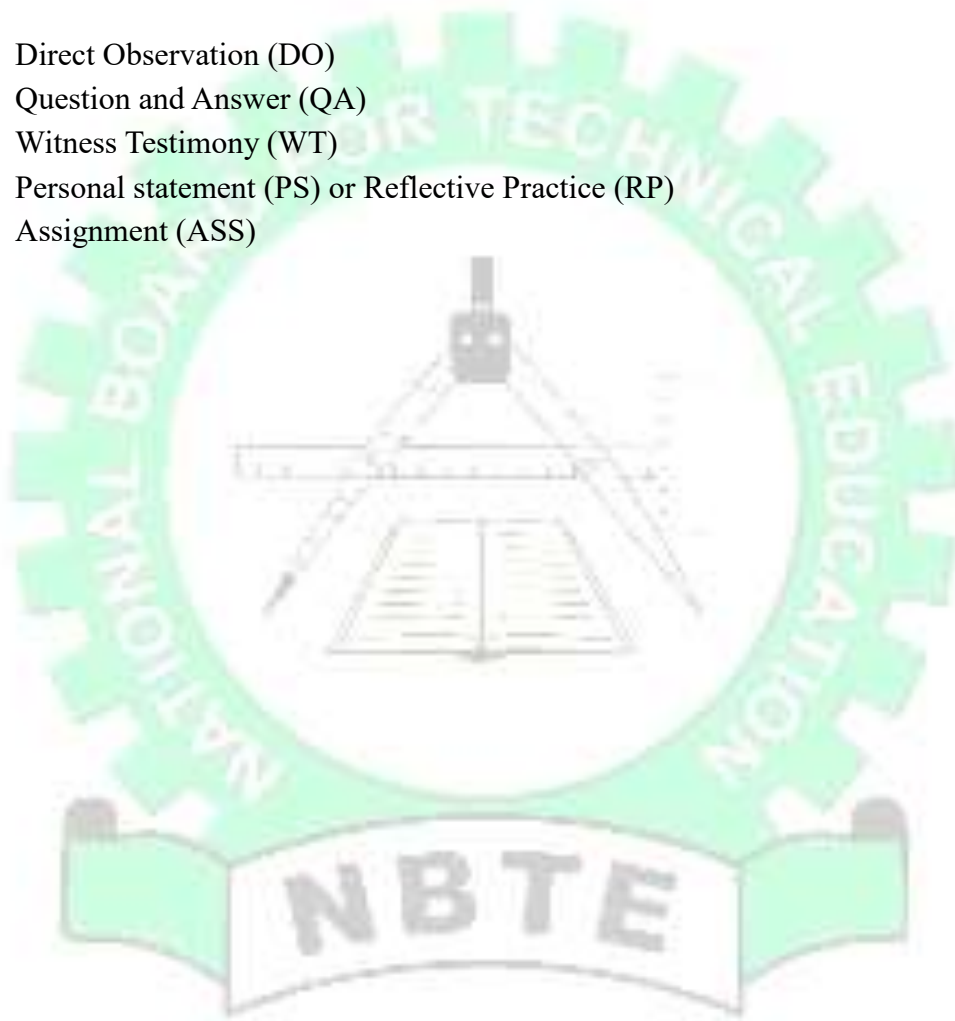
- viii. Operate and maintain hatchery equipment, monitor water quality, and implement quality control procedures to ensure efficient hatchery production and high survival rates.

QUALIFICATION ASSESSMENT/EVIDENCE REQUIREMENTS:

Assessment must be carried out in real workplace environment in which learning and human development is carried out. Simulation is not allowed at this level.

Assessment Methods to be Used Include:

1. Direct Observation (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Personal statement (PS) or Reflective Practice (RP)
5. Assignment (ASS)



NATIONAL SKILLS QUALIFICATION TABLE

MANDATORY UNITS

Unit	Unit Reference Number	Unit Title	Credit Value	Guided Learning Hours	Practice Time (Hours)	Remark
1	AGR/FHM/001/L2	Communication in Fish Hatchery Management	3	30	50	Mandatory
2	AGR/FHM/002/L2	Teamwork in Fish Hatchery Management	3	30	50	Mandatory
3	AGR/FHM/003/L2	Workplace Health, Safety and Hygiene	3	30	50	Mandatory
4	AGR/FHM/004/L2	Broodstock Management	4	40	60	Mandatory
5	AGR/FHM/005/L2	Artificial Breeding	4	40	80	Mandatory
6	AGR/FHM/006/L2	Manage egg incubation and fry production	4	40	80	Mandatory
7	AGR/FHM/007/L2	Fish Seed Production	5	50	100	Mandatory
8	AGR/FHM/008/L2	Operation of hatchery equipment and quality control	3	30	50	Mandatory
TOTAL			29	290	520	

QUALIFICATION STRUCTURE

This qualification comprises a total of eight (8) Mandatory and Optional Units, with a credit value of **29** and **290** Guided Learning Hours (GLH) across the full qualification. One (1) credit is equivalent to ten (10) GLH. Guided Learning Hours are the time a learner spends in the classroom, workshop and laboratory of the Skills Training Centre (STC), being taught, instructed, supervised or assessed by a qualified trainer, facilitator or assessor.

In addition to the GLH, the qualification requires at least twice or thrice the GLH as practice time. Practice time is the time a learner is expected to spend applying the skills of each unit in a real workplace environment, carrying out the same tasks repeatedly until performance becomes consistent, accurate and habitual to the standard the qualification demands. It is undertaken under the guidance of a workplace supervisor, recorded in the learner's logbook and duly endorsed. Practice time is the principal setting where core assessment is conducted. It is through repeated performance in the workplace that a learner's achievement of the Learning Outcomes and Performance Criteria is judged and evidenced. Practice time is an additional requirement to GLH and does not replace them.

To achieve this qualification, the learner must complete all mandatory units, undertake the prescribed practice time, and accumulate the minimum credit value approved by NBTE. Credit is awarded only when a learner has been assessed as competent against all Learning Outcomes and Performance Criteria of a unit.

GENERAL GUIDE

Unit title	Provides a clear explanation of the content of the unit.
Unit number	The unique number assigned to the unit.
Unit reference	The unique reference number given to each unit at qualification approval by NBTE
Unit level	Denotes the level of the unit within the National Skills Qualification Framework (NSQF).
Unit credit value	The value that has been given to the unit based on the expected learning time for an average learner. 1 credit = 10 learning hours
Unit aim	Provides a brief outline of the unit content.
Learning outcome	A statement of what a learner will know, understand or be able to do, as a result of a process of learning.
Assessment criteria	A description of the requirements a learner must achieve to demonstrate that a learning outcome has been met.
Unit assessment guidance	Any additional guidance provided to support the assessment of the unit.
Unit guided learning hours	The average number of hours of supervised or directed study time or assessment required to achieve a qualification or unit of a qualification.

Unit 001: Communication in Fish Hatchery Management

Unit Reference Number: AGR/FHM/001/L2

NSQ Level: 2

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 50 Hours

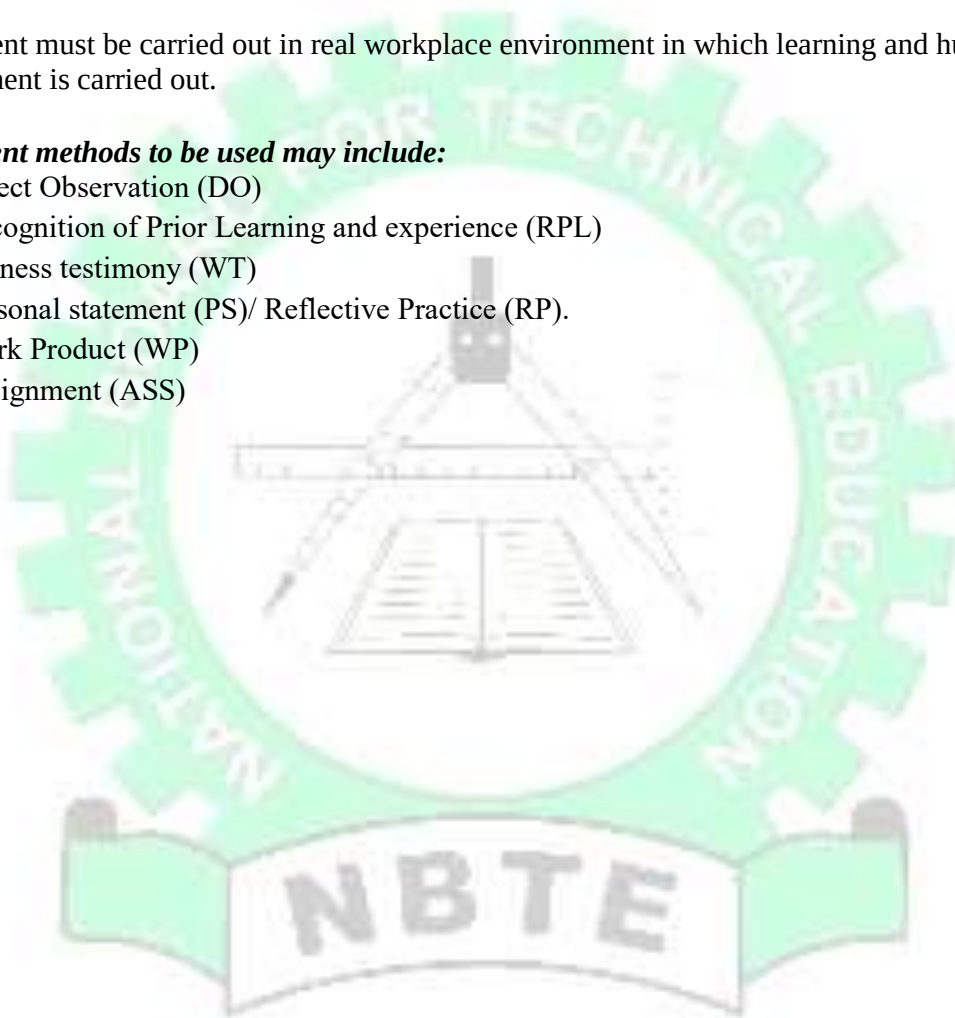
Unit Purpose: This unit equips learners with the competencies required to communicate effectively about fish breeding and hatchery management operations.

Unit Assessment Requirements/ Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used may include:

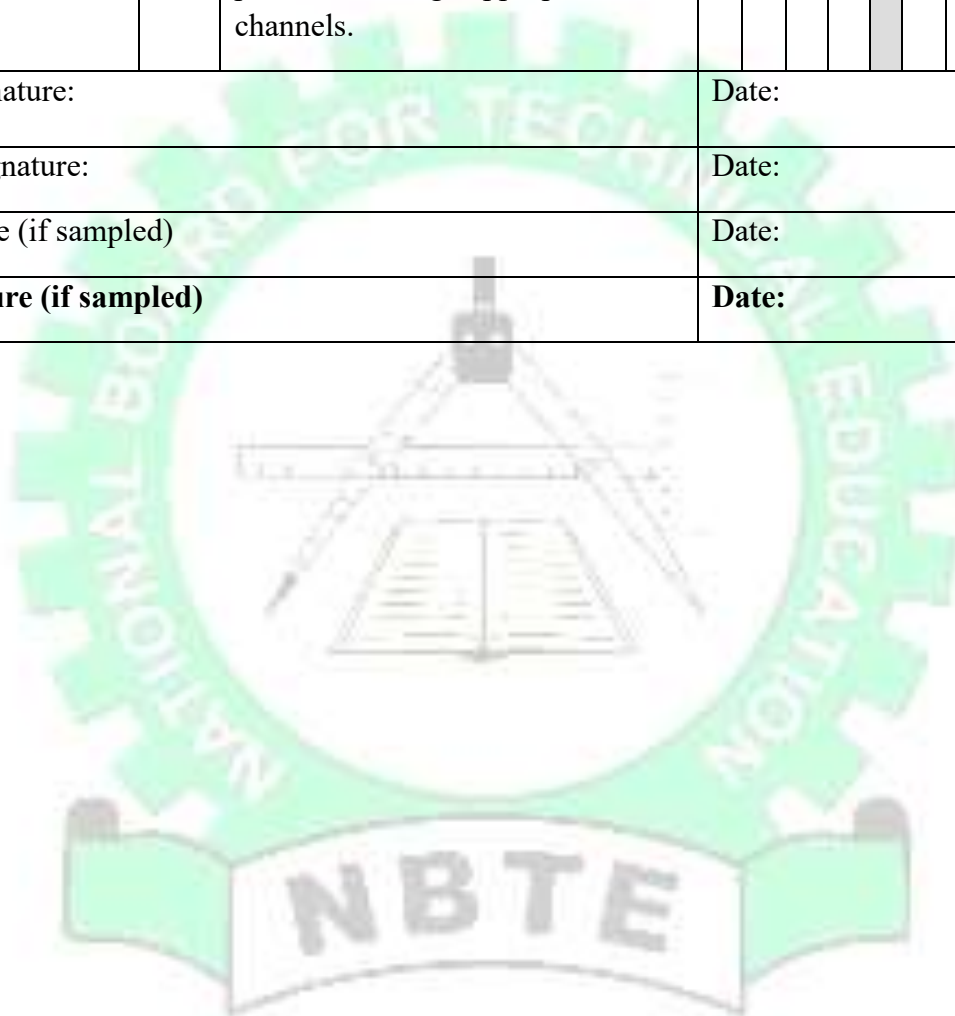
1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 001: Communication in Fish Hatchery Management

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref.				
LO 1: <i>Communicate effectively about fish breeding and hatchery management workplace</i>	1.1	Exchange work-related information clearly with supervisors and team members.										
	1.2	Interact verbally in line with fish breeding operations.										
	1.3	Explain workplace signs, symbols, notices and instructions correctly.										
	1.4	Communicate changes in production activities promptly.										
LO 2: <i>Use workplace information systems</i>	2.1	Obtain information from approved workplace sources.										
	2.2	Record and keep routine production information accurately.										
	2.3	Complete simple workplace forms										
	2.4	Report incorrect or incomplete information to appropriate personnel.										
LO 3: <i>Use workplace communication equipment.</i>	3.1	Describe production information accurately										
	3.2	Operate communication devices according to workplace procedures.										
	3.3	Identify faults in communication equipment.										
	3.4	Report faulty communication equipment promptly.										
	3.5	Follow workplace communication protocols.										
	3.6	Keep communication equipment safe after use.										
LO 4: <i>Maintain professional</i>	4.1	Respond respectfully to supervisors and colleagues.										

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref.
<i>workplace communication</i>	4.2	Receive information and provide constructive feedback appropriately.		
	4.3	Report unresolved communication problems through appropriate channels.		
Learners Signature:			Date:	
Assessors Signature:			Date:	
IQA Signature (if sampled)			Date:	
EQA Signature (if sampled)			Date:	



Unit 002: Teamwork in Fish Breeding and Hatchery Management

Unit Reference Number: AGR/FHM/002/L2

NSQ Level: 2

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 50 hours

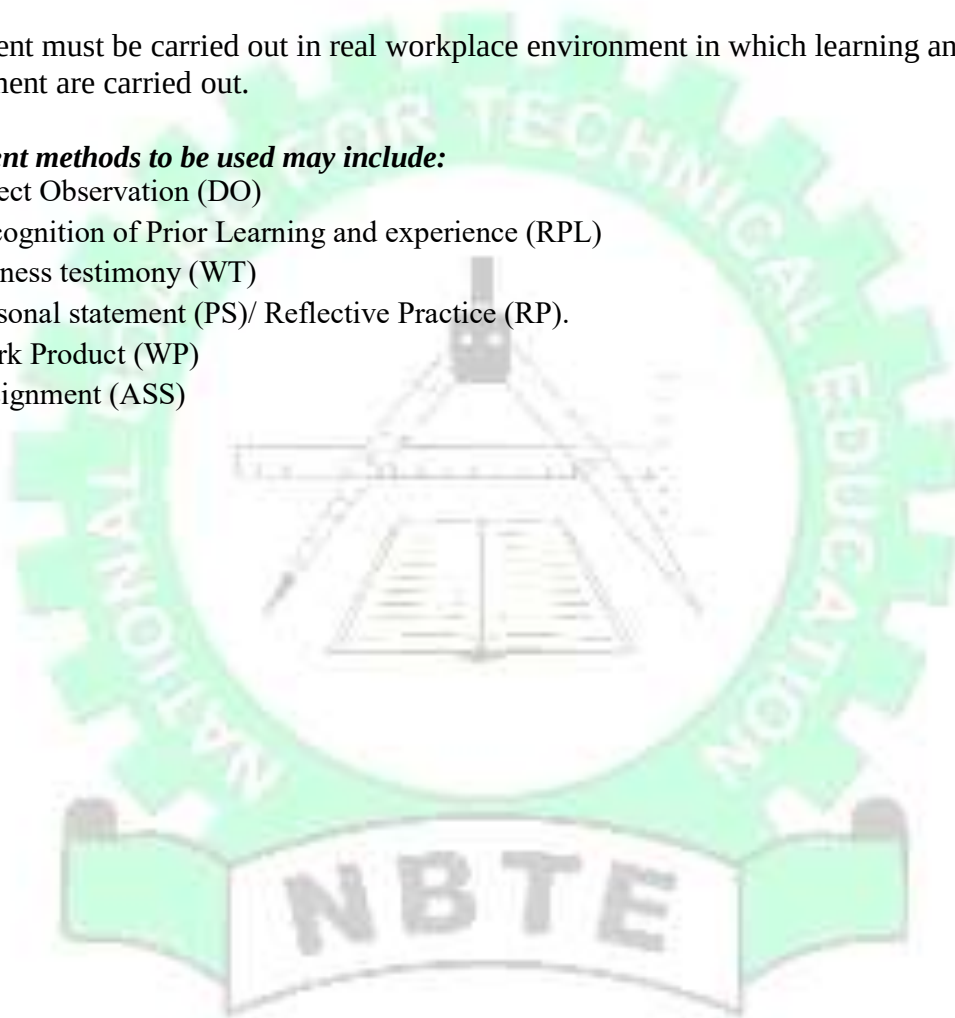
Unit Purpose: This unit equips the learner with the competencies required to work effectively with other hatchery management teams.

Unit assessment requirements/evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 002: Teamwork in Fish Hatchery Management

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref.	Page No.
The learner will:		The learner can:			
<i>LO 1: Carry out Assigned Responsibilities Within a Team</i>	1.1	Explain team objectives and production targets.			
	1.2	Carryout assigned duties according to workplace procedures.			
	1.3	Perform assigned work schedules.			
	1.4	Report task completion to supervisors.			
	1.5	Support team achievement of production targets.			
<i>LO 2: Collaborate with Team Members</i>	2.1	Share work information accordingly.			
	2.2	Carryout activities with other team members.			
	2.3	Assist colleagues during routine operations.			
	2.4	Maintain effective working relationships			
<i>LO 3: Contribute to Team Performance Improvement</i>	3.1	Identify routine workplace problems affecting production			
	3.2	Participate in team meetings and discussions.			
	3.3	Accept team decisions.			

Unit 003: Workplace Health, Safety and Hygiene

Unit Reference Number: AGR/FHM/003/L2

NSQ Level: 2

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 50 Hours

Unit Purpose: This unit equips learners with the competencies required to implement workplace health, safety and hygiene procedures.

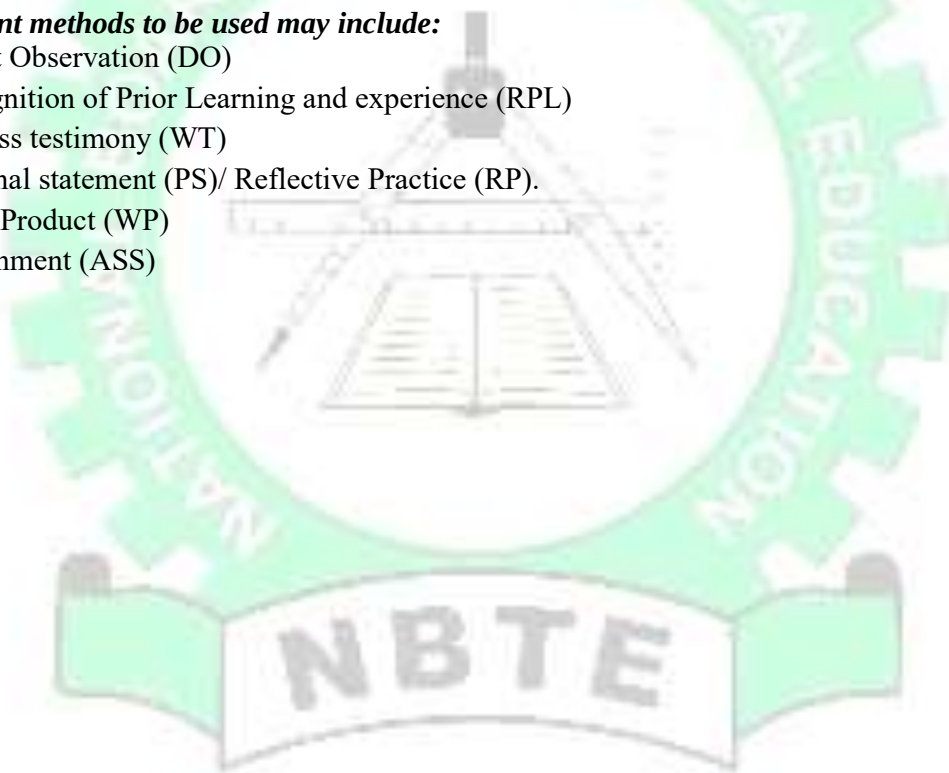
Unit Assessment Requirements/ Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Simulation is not allowed at this level.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



UNIT 03: Workplace Health, Safety and Hygiene

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Apply workplace hazards and control risks	1.1	Explain workplace hazard and risks control measures.									
	1.2	Apply approved risk control measures.									
	1.3	Report unsafe conditions promptly.									
	1.4	Participate in workplace hazard assessment.									
	1.5	Assist in workplace risks routine assessment.									
LO 2: Apply workplace health and safety procedures	2.1	Select and use appropriate PPE correctly.									
	2.2	Follow safe operating procedures during fish breeding operations.									
	2.3	Handle hatchery tools and equipment safely.									
	2.4	Respond appropriately to workplace emergencies.									
	2.5	Report accidents and incidents promptly at workplace									
LO 3: Maintain hygienic standards	3.1	Apply personal hygiene requirements consistently.									
	3.2	Maintain sanitation during hatchery operations.									
	3.3	Monitor hygiene compliance throughout operations.									
	3.4	Dispose of waste according to workplace procedures.									
LO 4: Maintain a safe hatchery environment	4.1	Carry out routine safety activities.									
	4.2	Assist in inspecting work areas before and after operations.									
	4.3	Locate emergency exits and safety									

		equipment.										
	4.4	Identify faulty equipment requiring maintenance.										
	4.5	Records basic safety records according to workplace procedures.										
Learners Signature:			Date:									
Assessors Signature:			Date:									
IQA Signature (if sampled)			Date:									
EQA Signature (if sampled)			Date:									



Unit 004: Broodstock Management

Unit Reference Number: AGR/FHM/004/L2

NSQ Level: 2

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 60 Hours

Unit Purpose: This unit is designed to equip learners with the knowledge and skill required to manage broodstock effectively.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)
7. (RPL)/Accreditation of Prior Learning (APL)



Unit 004: Broodstock Management

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type					Evidence Ref. Page No.			
The learner will:		The learner can:									
LO 1: Maintain broodstock health and welfare	1.1	Select healthy broodstock									
	1.2	Monitor health of the selected broodstock									
	1.3	Isolate sick or injured fish when necessary									
	1.4	Monitor stress factors: • Density • Water level • Temperature									
LO 2: Manage broodstock nutrition	2.1	Select appropriate feed for broodstock.									
	2.2	Establish feeding regime									
	2.3	Feed accordingly									
	2.4	Monitor feed intake									
	2.5	Adjust feeding rates accordingly									
	2.6	Maintain records of feeding activities.									
LO 3: Maintain suitable water quality for broodstock	3.1	Maintain clean tanks and ponds to promote fish health.									
	3.2	Monitor key water parameters; Temperature, pH, Colour and odour									
	3.3	Take corrective actions when water quality falls outside acceptable limits.									
LO 4: Monitor broodstock growth and reproductive development.	4.1	Observe broodstock behaviour regularly									
	4.2	Identify signs of sexual maturity									
	4.3	Separate male and female broodstock when necessary									
	4.4	Prepare broodstock for breeding									

		handling					
	5.6	Return fish safely to holding facilities after handling.					
in	6.1	Record broodstock identification details					
	6.2	Keep records of feeding, health, treatments and breeding status accordingly.					
	6.3	Update records accurately and promptly					
	6.4	Store records according to organizational procedures.					
Signature:			Date:				
Signature:			Date:				
(if sampled)			Date:				
Signature (if sampled)			Date:				

Unit 005: Artificial Breeding

Unit Reference Number:	AGR/FHM/005/L2
NSQ Level:	2
Credit Value:	4
Guided Learning Hours:	40
Practice Time:	80 Hours

Unit Purpose:

This unit is designed to equip learners with the knowledge and skill to prepare broodstock for artificial breeding operations

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)

Unit 005: Artificial Breeding

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.			
LO 1: Prepare broodstock, equipment, and materials for artificial breeding	1.1	Confirm readiness of broodstock and breeding materials before breeding begins					
	1.2	Select appropriate equipment and materials for artificial breeding					
	1.3	Prepare breeding tools and material (bowls, syringes, feathers, blades, hormones, salts, saline water, towels, and disinfectants) according to standard procedures.					
	1.4	Use appropriate equipment and materials for artificial breeding					
	1.5	Identify equipment and materials for artificial breeding					
LO 2: Carry out artificial breeding procedures.	2.1	Select broodstock suitable for breeding					
	2.2	Handle broodstock carefully to reduce stress and injury					
	2.3	Induce selected broodstock using suitable hormone					
	2.4	Observe the latency period depending on the temperature					
	2.5	Obtain eggs and milt using correct techniques					
	2.6	Maintain clean and hygienic working conditions to minimise contamination					
	2.7	Record breeding information accurately.					
LO 3: Carry out egg fertilization and initial egg handling.	3.1	Mix eggs and milt uniformly to achieve effective fertilization.					
	3.2	Incubate fertilized eggs using clean water					
	3.3	Monitor hatching for 24 hours					

		materials safely.						
	4.4	Clean equipment after use.						
	4.5	Disinfect equipment after use.						
	4.6	Store equipment after use.						
	4.7	Report abnormalities, poor fertilization rates, or equipment faults to the supervisor						
te	5.1	Record broodstock identification and breeding date.						
n.	5.2	Record fertilization rates and observations.						
	5.3	Complete breeding records accurately and submit them according to workplace requirements						

Signature: _____
Date: _____

Date: _____

Date: _____

Date: _____

Date: _____

Unit 006: Egg Incubation and Fry Production

Unit Reference Number: AGR/FHM/006/L2

NSQ Level: 2

Credit Value: 4

Guided Learning Hours: 40

Practice Time: 80 Hours

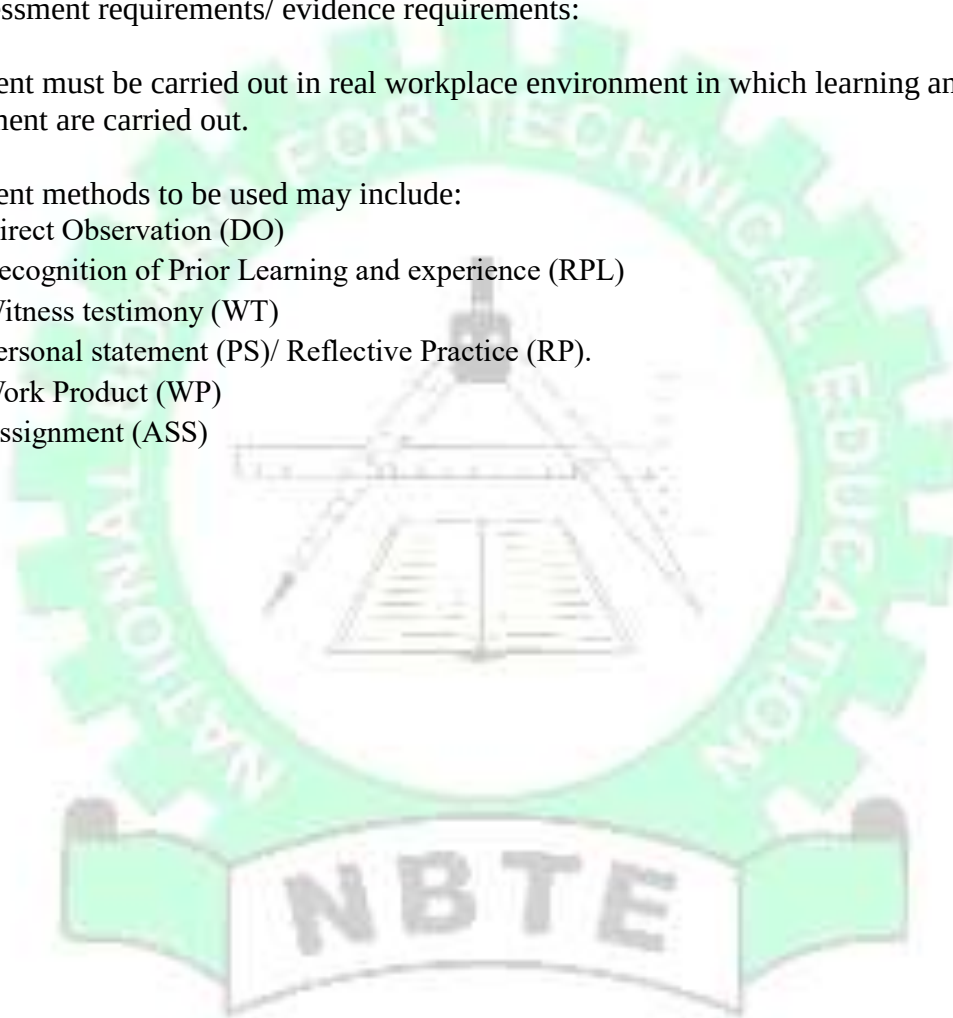
Unit Purpose: This unit is designed to equip learners with the knowledge and skills to incubate fish egg and monitor hatching.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 006: Egg Incubation and Fry Production

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.
LO 1: Manage egg incubation conditions to achieve high hatchability	1.1	Maintain key water parameters (temperature, dissolved oxygen) within recommended limits.		
	1.2	Maintain water level		
	1.3	Load fertilized eggs into incubators		
	1.4	Adjust incubation conditions as required to maintain optimum egg development.		
LO 2: Monitor egg hatching	2.1	Assess egg viability using observable indicators		
	2.2	Inspect eggs regularly to observe hatching.		
	2.3	Siphon dead eggs and egg shells		
LO 3: Maintain optimum water quality throughout incubation and fry production	3.1	Monitor key water quality parameters regularly.		
	3.2	Take corrective action when water quality falls outside recommended limits.		
	3.3	Maintain clean incubation and nursery systems to support healthy fish development.		
LO 4: Transfer newly hatched larvae/fry safely to nursery tanks.	4.1	Transfer hatchlings to nursery tanks with minimal stress.		
	4.2	Maintain suitable environmental conditions for fry growth and survival		
	4.3	Stock fry at desired densities.		
LO 5: Manage fry using appropriate feeding schedules	5.1	Feed fry using the correct feed type.		
	5.2	Maintain standard feeding schedule		

	5.3	Monitor feed intake and adjust feeding rates where necessary.																	
	5.4	Observe fry growth and maintain appropriate stocking densities																	
LO 6: Control common hatchery diseases through good biosecurity practices.	6.1	Observe fry daily for abnormal behavior, disease signs, and mortality.																	
	6.2	Implement biosecurity measures in the hatchery																	
	6.3	Clean incubation and fry-rearing equipment after use.																	
	6.4	Store incubation and fry-rearing equipment after use.																	
	6.5	Report corrective action																	
LO 7: Maintain accurate records of incubation and hatching.	7.1	Record the time of hatching																	
	7.2	Record fry survival																	
	7.3	Record water parameters,																	
	7.4	Record feeding activities																	
	7.5	Record production losses																	
	7.6	Complete hatchery records accurately and promptly according to workplace requirements																	
Learners Signature:			Date:																
Assessors Signature:			Date:																
IQA Signature (if sampled)			Date:																
EQA Signature (if sampled)			Date:																

Unit 007: Fish Seed Production

Unit Reference Number: AGR/FHM/007/L2

NSQ Level: 2

Credit Value: 5

Guided Learning Hours: 50

Practice Time: 100 Hours

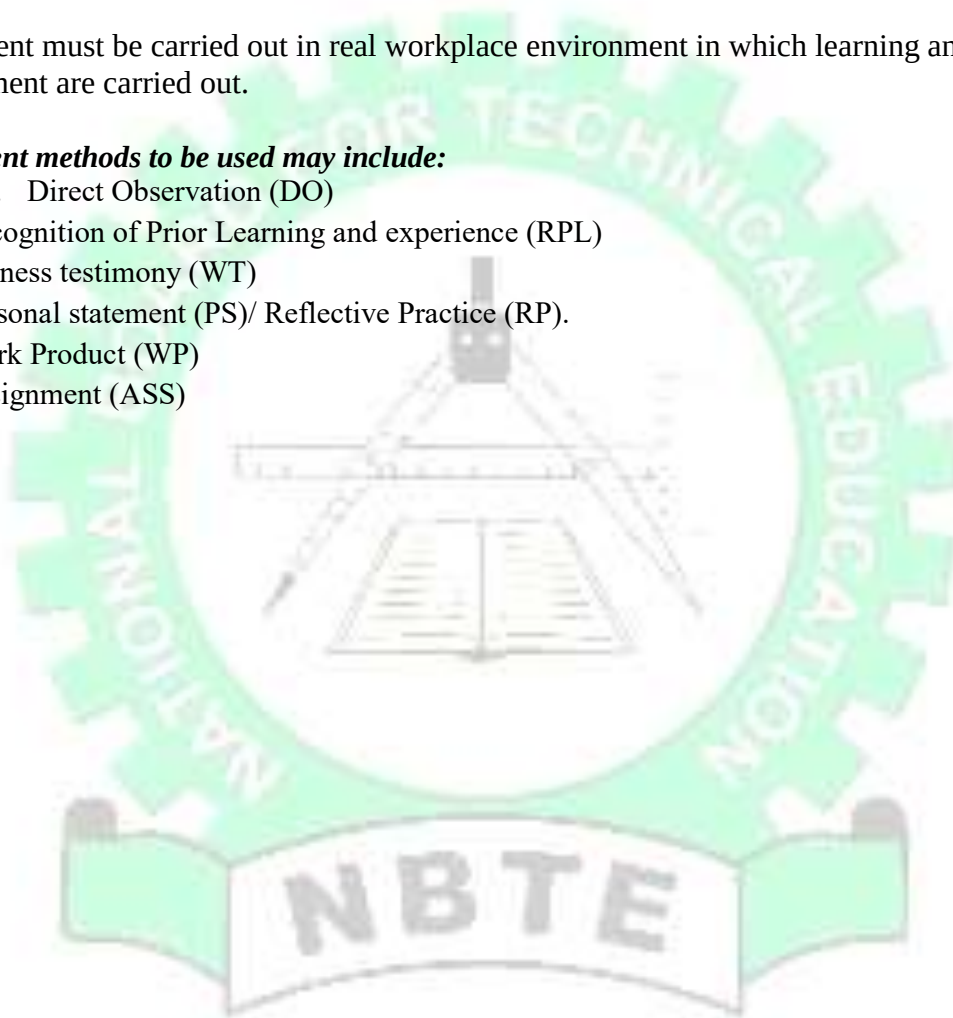
Unit Purpose: This unit is designed to equip learners with the knowledge and skill to produce quality fish seed through hatchery preparation

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 007: Fish Seed Production

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: Prepare fish breeding and hatchery facilities for fish seed production.	1.1	Identify hatchery equipment and materials		
	1.2	Prepare hatchery equipment and materials for fish seed production		
	1.3	Ensure all facilities and equipment are clean, functional, and ready for use.		
	1.4	Supply water for fish seed production		
	1.5	Ensure suitable environmental conditions for fish seed production		
LO 2: Select and condition broodstock for spawning.	2.1	Select healthy broodstock.		
	2.2	Condition broodstock.		
	2.3	Handle broodstock carefully to minimise stress and injury.		
LO 3: Carry out breeding techniques under supervision.	3.1	Perform induced spawning using the correct procedures and equipment.		
	3.2	Collect fish eggs		
	3.3	Fertilize fish eggs		
	3.4	Incubate fish eggs		
	3.5	Follow standard operating procedures throughout the breeding process		
LO 4: Incubate fertilized eggs and monitor hatching conditions.	4.1	Maintain suitable water quality to support successful incubation.		
	4.2	Remove dead eggs and maintain cleanliness to improve hatchability.		
	4.3	Assess hatching progress and determine hatchability.		
LO 5: : Manage larvae and fry through the early rearing stages.	5.1	Transfer hatchlings safely to nursery facilities at the appropriate stage.		
	5.2	Maintain suitable environmental conditions for larval and fry development.		
	5.3	Monitor fry growth, health, and survival regularly.		

	7.5	Package fish seed to minimise stress and mortality during transportation					
Security throughout production	8.1	Comply with workplace health, safety, environmental, and biosecurity requirements.					
	8.2	Maintain accurate production records.					
	8.3	Complete production records according to workplace procedures.					
	8.4	Store production records.					
e:			Date:				
re:			Date:				
(sampled)			Date:				
(if sampled)			Date:				

Unit 008: Operate Hatchery Equipment and Quality Control

Unit Reference Number: AGR/FHM/008/L2

NSQ Level: 2

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 50 Hours

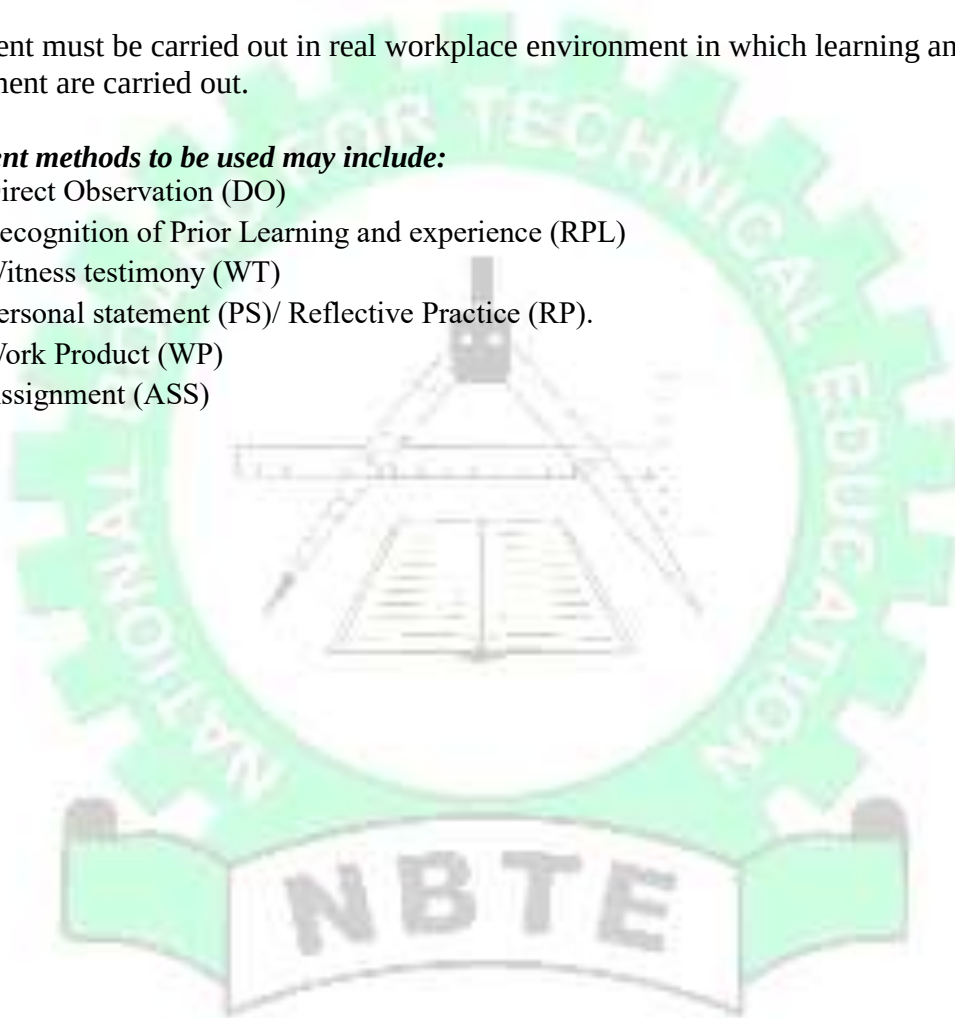
Unit Purpose: This unit is designed to equip learners with the knowledge and skill to operate and maintain fish hatchery equipment while applying quality control measures.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 008: Operate Hatchery Equipment and Quality Control

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: Operate hatchery equipment according to standard operating procedures.	1.1	Identify common hatchery equipment								
	1.2	Operate common hatchery equipment								
	1.3	Record results obtained from the operations								
LO 2: Carry out routine maintenance on hatchery equipment.	2.1	Inspect hatchery equipment before use								
	2.2	Clean hatchery equipment after use								
	2.3	Disinfect hatchery equipment after use								
	2.4	Perform routine maintenance of hatchery equipment								
	2.5	Store hatchery equipment safely								
LO 3: Identify equipment faults and take appropriate corrective actions.	3.1	Inspect hatchery equipment regularly.								
	3.2	Identify equipment faults								
	3.3	Identify possible causes of simple equipment faults								
	3.4	Report identified equipment faults								
	3.5	Maintain repaired equipment								
LO 4: Maintain to operational, maintenance and quality control records.	4.1	Record equipment inspected								
	4.2	Document maintenance activities								
	4.3	Record correct quality control measures								
LO 5: Adhere to workplace health, safety, and biosecurity procedures while	5.1	Wear appropriate Personal Protective Equipment (PPE) before operations								
	5.2	Identify workplace health, safety and biosecurity requirement applicable to								

<i>operating hatchery equipment.</i>		hatchery operation											
	5.3	Maintain clean and hygienic working conditions.											
Learners Signature:			Date:										
Assessors Signature:			Date:										
IQA Signature (if sampled)			Date:										
EQA Signature (if sampled)			Date:										





NATIONAL SKILLS QUALIFICATION(NSQ)



JULY, 2026

GENERAL INFORMATION

OVERVIEW

This qualification is designed for individuals who are interested in pursuing a career in Fish Hatchery Management for the award of National Skills Qualifications (NSQ)/National Occupational Standards (NOS). It is aimed at producing Hatchery Supervisor in Fish Hatchery Management, NSQ Level Three (3) with the competencies necessary to **supervise in Fish Hatchery Management at NSQ Level 3**.

This qualification is subject to review as and when the need arises.

QUALIFICATION PURPOSE

This qualification is targeted at developing competence in Fish Hatchery Management. This is focused on knowledge, practical skills, communication skill, health and safety, teamwork and workplace experience.

QUALIFICATION REQUIREMENTS

All Candidates must be:

- At least eighteen (18) years of age
- Medically fit
- Mentally fit (Mental alertness)
- A Nigerian citizen
- Other nationals should present international passport, residence permit or Parent work permit.
- Vetted
- Interest in agricultural production and related support operations;
- Ability to carry out practical tasks independently and to guide the work of others.

QUALIFICATION OBJECTIVES

At the end of this qualification, the learner should be able to:

- i. Communicate effectively with staff, clients, regulators and other stakeholders in fish hatchery management.
- ii. Lead, coordinate and improve teamwork in the fish hatchery workplace.
- iii. Implement, monitor and promote workplace health, safety, hygiene and environmental practices in the hatchery.
- iv. Prepare and implement annual hatchery production plans to meet fingerling production targets.
- v. Supervise day-to-day hatchery operations, personnel and schedules of duty.
- vi. Implement hatchery quality assurance systems and biosecurity measures.
- vii. Manage hatchery operations as an enterprise, including costing, record keeping and marketing.
- viii. Analyse, improve and optimise fish seed production systems.

NATIONAL SKILLS QUALIFICATION (NSQ) TABLE**MANDATORY UNITS**

Unit	Unit Reference Number	Unit Title	Credit Value	Guided Learning Hours	Practice Time	Remarks
1	AGR/FHM/001/L3	Communication in Fish Hatchery Management Workplace	3	30	60	Mandatory
2	AGR/FHM/002/L3	Teamwork in Fish Hatchery Management Workplace	3	30	60	Mandatory
3	AGR/FHM/003/L3	Workplace Health, Safety and Hygiene	3	30	60	Mandatory
4	AGR/FHM/004/L3	Annual Production Plans	5	50	100	Mandatory
5	AGR/FHM/005/L3	Supervise Hatchery Operations	6	60	120	Mandatory
6	AGR/FHM/006/L3	Hatchery Quality Assurance and Biosecurity	6	60	120	Mandatory
7	AGR/FHM/007/L3	Hatchery Operations and Enterprise Activities	5	50	100	Mandatory
8	AGR/FHM/008/L3	Improved Fish Seed Production Systems	6	60	120	Mandatory
TOTAL			37	370	740	

QUALIFICATION STRUCTURE

This qualification comprises a total of fifteen (8) Mandatory and Optional Units, with a credit value of **37** and **370** Guided Learning Hours (GLH) across the full qualification. One (1) credit is equivalent to ten (10) GLH. Guided Learning Hours are the time a learner spends in the classroom, workshop and laboratory of the Skills Training Centre (STC), being taught, instructed, supervised or assessed by a qualified trainer, facilitator or assessor.

In addition to the GLH, the qualification requires at least twice or thrice the GLH as practice time. Practice time is the time a learner is expected to spend applying the skills of each unit in a real workplace environment, carrying out the same tasks repeatedly until performance becomes consistent, accurate and habitual to the standard the qualification demands. It is

undertaken under the guidance of a workplace supervisor, recorded in the learner's logbook and duly endorsed. Practice time is the principal setting where core assessment is conducted. It is through repeated performance in the workplace that a learner's achievement of the Learning Outcomes and Performance Criteria is judged and evidenced. Practice time is an additional requirement to GLH and does not replace them.

To achieve this qualification, the learner must complete all mandatory units, undertake the prescribed practice time, and accumulate the minimum credit value approved by NBTE. Credit is awarded only when a learner has been assessed as competent against all Learning Outcomes and Performance Criteria of a unit.

GENERAL GUIDE

Unit title	Provides a clear explanation of the content of the unit.
Unit number	The unique number assigned to the unit.
Unit reference	The unique reference number given to each unit at qualification approval by NBTE
Unit level	Denotes the level of the unit within the National Skills Qualification Framework (NSQF).
Unit credit value	The value that has been given to the unit based on the expected learning time for an average learner. 1 credit = 10 learning hours
Unit aim	Provides a brief outline of the unit content.
Learning outcome	A statement of what a learner will know, understand or be able to do, as a result of a process of learning.
Assessment criteria	A description of the requirements a learner must achieve to demonstrate that a learning outcome has been met.
Unit assessment guidance	Any additional guidance provided to support the assessment of the unit.
Unit guided learning hours	The average number of hours of supervised or directed study time or assessment required to achieve a qualification or unit of a qualification.

Unit 001: Communication in Fish Hatchery Management Workplace

Unit Reference Number: AGR/FHM/001/L3

NSQ Level: 3

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 60 hours

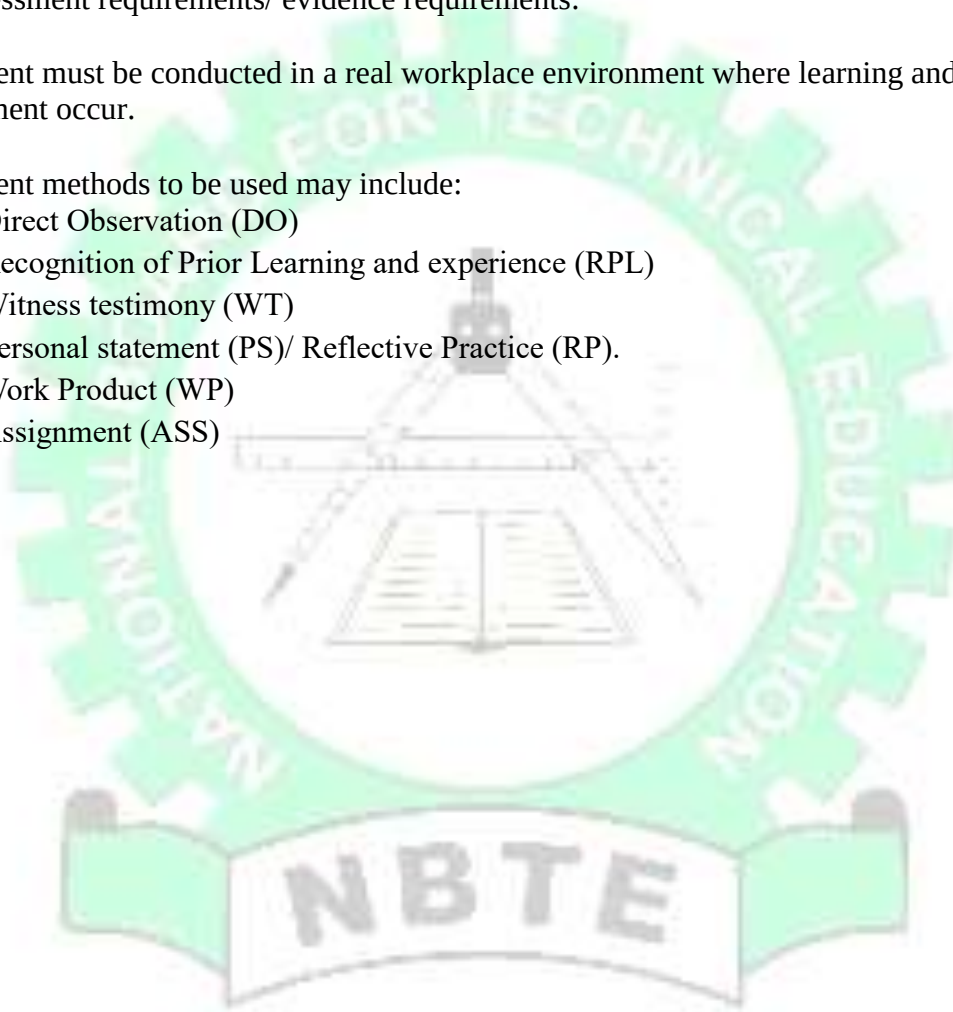
Unit Purpose: This unit is designed to equip learners with the knowledge and skill needed to communicate effectively with stakeholders involved in fish Hatchery Management.

Unit assessment requirements/ evidence requirements:

Assessment must be conducted in a real workplace environment where learning and human development occur.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 001: Communication in Fish Hatchery Management Workplace

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Apply effective workplace communication techniques	1.1	Communicate clearly and professionally with supervisors, colleagues, and subordinates									
	1.2	Interpret written instructions related to fish hatchery activities.									
	1.3	Convey hatchery information accurately and in a timely manner.									
	1.4	Demonstrate active listening during workplace interactions.									
LO 2: Communicate technical information	2.1	Interpret fish hatchery schedules and standard operating procedures.									
	2.2	Explain technical instructions to team members accurately									
	2.3	Communicate technical information using appropriate terminologies									
	2.4	Verify the understanding of communicated technical information									
LO 3: Coordinate communication within production teams	3.1	Facilitate information flow among team members.									
	3.2	Communicate hatching targets and schedules to workers									
	3.3	Conduct staff shift handover and communication effectively									
LO 4: Communicate quality, safety, and environmental requirements	4.1	Communicate workplace safety requirements to team members									
	4.2	Report hazards, incidents, and unsafe practices promptly									
	4.3	Document reports and corrective actions when required.									
Learner's Signature:			Date:								
Assessor's Signature:			Date:								
IQA Signature (if sampled)			Date:								
EQA Signature (if sampled)			Date:								

Unit 002: Teamwork in Fish Hatchery Management Workplace

Unit Reference Number: AGR/FHM/002/L3

NSQ Level: 3

Credit Value: 3

Guided Learning Hours: 30

Practice Time: 60 hours

Unit Purpose: This unit equips learners with the knowledge and skill required to lead, coordinate, and improve teamwork in hatchery management.

Unit assessment requirements/ evidence requirements:

Assessment must be conducted in a real workplace environment where learning and human development occur.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 002: Teamwork in the Fish Hatchery Management Workplace

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.
LO 1: Coordinate team activities in fish breeding	1.1	Assign tasks to team members according to hatchery requirements and competence levels.		
	1.2	Communicate production targets and work schedules to team members.		
	1.3	Monitor team performance against established hatchery plans.		
	1.4	Provide guidance and support to team members during breeding activities.		
	1.5	Modify work assignments to address changes in production requirements.		
LO 2: Promote effective teamwork in fish breeding	2.1	Foster cooperation and mutual respect among team members.		
	2.2	Facilitate open communication within the team.		
	2.3	Facilitate information sharing to support fish seed production.		
	2.4	Promote active participation in team decision-making processes.		
LO 3: Resolve team-related issues in the workplace	3.1	Identify factors affecting team performance.		
	3.2	Investigate team conflicts and workplace issues objectively.		
	3.3	Apply appropriate conflict resolution techniques to address disagreements.		
	3.4	Facilitate discussions to achieve mutually acceptable solutions.		
	3.5	Report unresolved issues according to organizational procedures.		
Learner's Signature:			Date:	
Assessor's Signature:			Date:	
IQA Signature (if sampled)			Date:	

EQA Signature (if sampled):**Date:**

Unit 003: Workplace Health, Safety and Hygiene

Unit Reference Number:	AGR/FHM/003/L3
NSQ Level:	3
Credit Value:	3
Guided Learning Hours:	30
Practice Time:	60 hours

Unit Purpose: This unit is designed to equip the learner with the knowledge, skills and competencies required to implement, monitor, and promote health, safety, and environmental (HSE) practices in the fish hatchery.

Unit assessment requirements/ evidence requirements:

Assessment must be conducted in a real workplace environment where learning and human development occur.

Assessment methods to be used include:

Direct Observation (DO)

1. Personal statement/Learning Journal (PS/LJ)
2. Questions and Answers (QA)
3. Witness Testimony (WT)
4. Assignment (ASS)
5. Work Products (WP)
6. Recognition of prior learning (RPL)

Unit 003: Workplace Health, Safety and Hygiene

LEARNING OUTCOME (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.
LO 1: Conduct workplace hazard identification and risk assessment	1.1	Identify common hazards associated with fish hatchery facilities.		
	1.2	Conduct workplace inspections to detect potential hazards.		
	1.3	Identify risks associated with breeding activities and equipment.		
LO 2: Implement occupational health and safety procedures	2.1	Adhere to workplace health and safety policies and procedures.		
	2.2	Comply with safe operating procedures during fish breeding activities.		
	2.3	Monitor workers' adherence to safety requirements.		
	2.4	Enforce the use of personal protective equipment (PPE).		
LO 3: Carryout safe operation of fish hatchery equipment	3.1	Verify that equipment is operated in accordance with safety requirements.		
	3.2	Ensure machine guards and safety devices are functional.		
	3.3	Coordinate lockout/tagout procedures during maintenance activities.		
LO 4: Manage emergency preparedness and response	4.1	Communicate emergency response procedures.		
	4.2	Coordinate emergency drills and evacuation exercises.		
	4.3	Ensure emergency equipment is available and functional.		
	4.4	Respond appropriately to fires, chemical spills, injuries, and equipment failures.		
LO 5: Implement Environmental Protection Measures	5.1	Explain the environmental impacts of fish breeding activities.		
	5.2	Carry out safe disposal of waste materials.		
	5.3	Implement measures to control dust, noise, and pollution in the hatchery.		

LEARNING OUTCOME (LO) The learner will:	PERFORMANCE CRITERIA The learner can:	Evidence Type	Evidence Ref. Page No.
Learner's Signature:		Date:	
Assessor's Signature:		Date:	
IQA Signature (if sampled)		Date:	
EQA Signature (if sampled)		Date:	



Unit 004: Annual Production Plans**Unit Reference Number:** AGR/FHM/004/L3**NSQ Level:** 3**Credit Value:** 5**Guided Learning Hours:** 50**Practice Time:** 100 Hours

Unit Purpose: The unit is designed to equip learners with knowledge and skills to plan and produce fingerlings.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used include:

1. Direct Observation (DO)
2. Questions and Answers (QA)
3. Witness Testimony (WT)
4. Assignment (ASS)
5. Recognition of Prior Learning (RPL)/Accreditation of Prior Learning (APL)

Unit 004: Annual Production Plans

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 1: Plan hatchery production.	1.1	Determine carrying capacities for hatchery troughs, nursery and rearing tanks.		
	1.2	Determine production targets		
	1.3	Estimate broodstock requirements.		
	1.4	Identify equipment, materials and items needed		
	1.5	Determine quality of fish feeds		
	1.6	Provide cost estimates for all items		
LO 2: Plan breeding schedules.	2.1	Provide breeding calendar for each cycle		
	2.2	Determine the species for hatching		
	2.3	Select broodstock		
	2.4	Assign specific duties to staff for hatchery operations		
LO 3: Develop annual production	3.1	Identify breeding seasons for different species		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
<i>plans.</i>	3.2	Establish feeding regimes to enhance growth rate of fish seeds		
	3.3	Establish production durations		
LO 4: Monitor production targets.	4.1	Compare actual hatchery production output with set production targets		
	4.2	Identify causes of shortfalls in production targets		
	4.3	Report findings to management		
	4.4	Recommend corrective actions		
Learner's Signature:			Date:	
Assessor's Signature:			Date:	
IQA Signature (if sampled)			Date:	
EQA Signature (if sampled)			Date:	



Unit 005: Supervise Hatchery Operations

Unit Reference Number: AGR/FHM/005/L3

NSQ Level: 3

Credit Value: 6

Guided Learning Hours: 60

Practice Time: 120

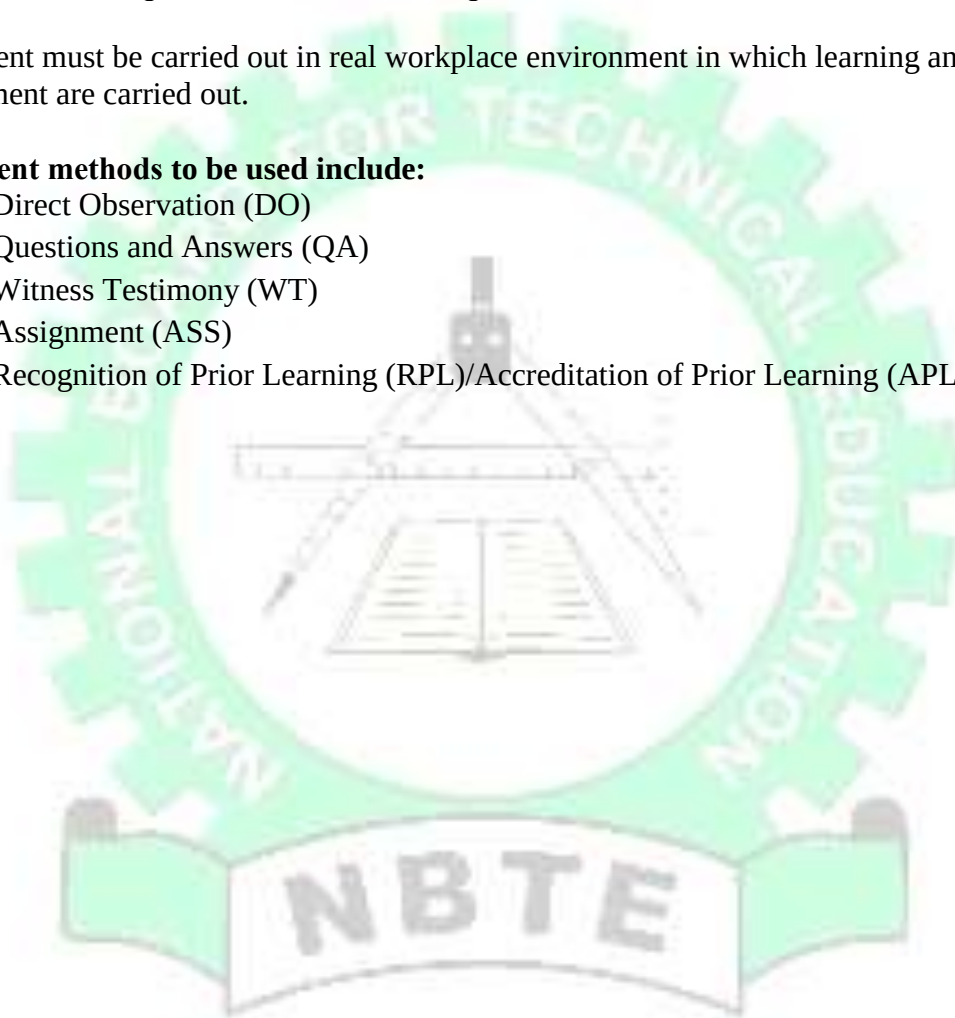
Unit Purpose: The unit is designed to equip learners with knowledge and skill to supervise hatchery operation activities

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used include:

1. Direct Observation (DO)
2. Questions and Answers (QA)
3. Witness Testimony (WT)
4. Assignment (ASS)
5. Recognition of Prior Learning (RPL)/Accreditation of Prior Learning (APL)



Unit 005: Supervise Hatchery Operations

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
<i>LO 1: Supervise schedule of duties for hatchery staff</i>	1.1	Inspect hatchery facilities and equipment at regular intervals		
	1.2	Assign work responsibilities to individual staff		
	1.3	Ensure compliance with Standard Operation Procedures (SOP)		
	1.4	Resolve operational problems.		
	1.5	Prepare operational reports		
<i>LO 2: Supervise breeding operations.</i>	2.1	Inspect assembled equipment, tools and materials before commencement of operations		
	2.2	Inspect selected broodstock		
	2.3	Supervise the physical activities during breeding operations		
	2.4	Inspect incubated eggs		
	2.5	Observe changes in eggs and water		
	2.6	Supervise syphoning of dead eggs and spent shells		
	2.7	Adhere strictly to feeding frequencies		
<i>LO 3: Ensure hatchery operations are carried out in line with best practices</i>	3.1	Verify that hatchery facilities are cleaned to the required standard		
	3.2	Verify that broodstock are handled in accordance with welfare procedures		
	3.3	Verify that broodstock feeding is carried out to the approved regime		
	3.4	Monitor egg incubation and larval rearing operations against set targets		

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
	3.5	Review water quality results and direct corrective action where required		
	3.6	Enforce feed handling procedures that prevent contamination		
	3.7	Verify that feed is stored so as to exclude insects and rodents		
	3.8	Enforce biosecurity measures to prevent disease outbreaks		
	3.9	Maintain operational records and records of staff performance		
LO 4: Handle adult and young fishes in line with best practices	4.1	Adopt appropriate handling methods to reduce stress in fishes of all ages		
	4.2	Use special tools to ease and hasten counting of fingerlings		
	4.3	Educate all staff about Good Management Practices (GMP)		
	4.4	Adhere to laid down procedures in handling fishes		
Learner's Signature:			Date:	
Assessor's Signature:			Date:	
IQA Signature (if sampled)			Date:	
EQA Signature (if sampled)			Date:	

Unit 006: Hatchery Quality Assurance and Biosecurity

Unit Reference Number: AGR/FHM/006/L3

NSQ Level: 3

Credit Value: 6

Guided Learning Hours: 60 Hours

Practice Time: 120 Hours

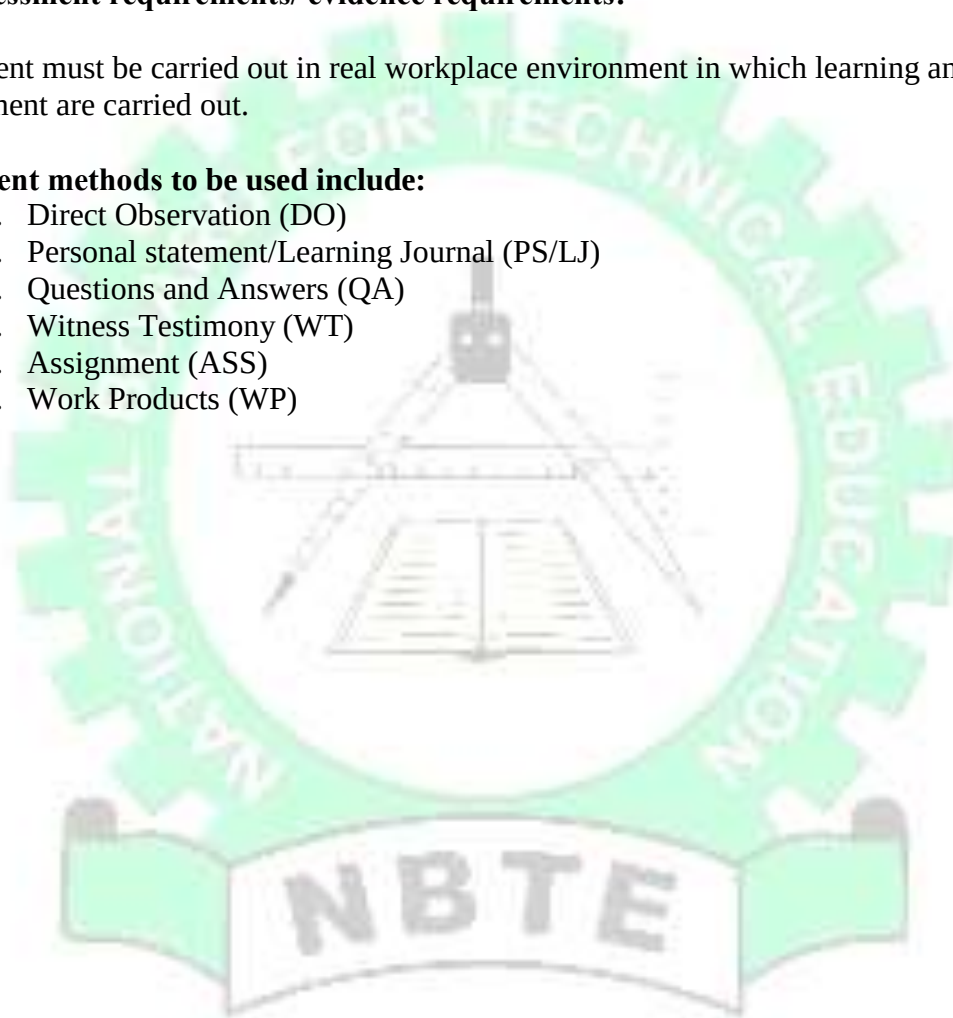
Unit Purpose: This unit is designed to equip learners with knowledge, skill, and competence to implement hatchery quality assurance systems and biosecurity measures.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used include:

1. Direct Observation (DO)
2. Personal statement/Learning Journal (PS/LJ)
3. Questions and Answers (QA)
4. Witness Testimony (WT)
5. Assignment (ASS)
6. Work Products (WP)



Unit 006: Hatchery Quality Assurance and Biosecurity

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type					Evidence Ref. Page No.			
The learner will:		The learner can:									
LO 1: Implement hatchery quality assurance procedures	1.1	Adhere to hatchery quality standards in accordance with organizational procedures									
	1.2	Inspect eggs and hatchery facilities for compliance with quality requirements.									
	1.3	Monitor hatchability quality									
	1.4	Identify and report quality deviations promptly									
	1.5	Apply corrective actions to improve hatchery performance									
	1.6	Maintain accurate quality assurance records and reports									
LO 2: Apply biosecurity measures to prevent disease transmission	2.1	Enforce access control procedures for personnel and visitors									
	2.2	Implement cleaning, sanitation and disinfection schedules.									
	2.3	Ensure proper use of personal protective equipment (PPE).									
	2.4	Control movement of equipment, vehicles, and materials entering the hatchery									
	2.5	Dispose of hatchery waste, dead eggs and spent egg shells									
	2.6	Monitor compliance with established biosecurity protocols									
LO 3: Monitor hatchery hygiene, environmental conditions, and disease prevention	3.1	Monitor contaminated hatchery water for corrective measures									
	3.2	Conduct routine hygiene inspections of work areas and equipment.									

	3.3	Identify signs of disease outbreaks or contamination risks.																	
	3.4	Implement preventive disease control measures																	
	3.5	Report abnormal findings																	
	3.6	Maintain environmental monitoring and inspection records.																	
LO 4: Maintain documentation and continuous quality improvement systems	4.1	Record hatchery operational and quality assurance data																	
	4.2	Participate in internal quality inspections																	
	4.3	Ensure compliance with relevant national standards																	
	4.4	Prepare and submit quality assurance reports within specified timelines																	
Learner's Signature:			Date:																
Assessor's Signature:			Date:																
IQA Signature (if sampled)			Date:																
EQA Signature (if sampled)			Date:																

Unit 007: Hatchery Operations and Enterprise

Unit Reference Number: AGR/FHM/007/L3

NSQ Level: 3

Credit Value: 5

Guided Learning Hours: 50 Hours

Practice Time: 100 Hours

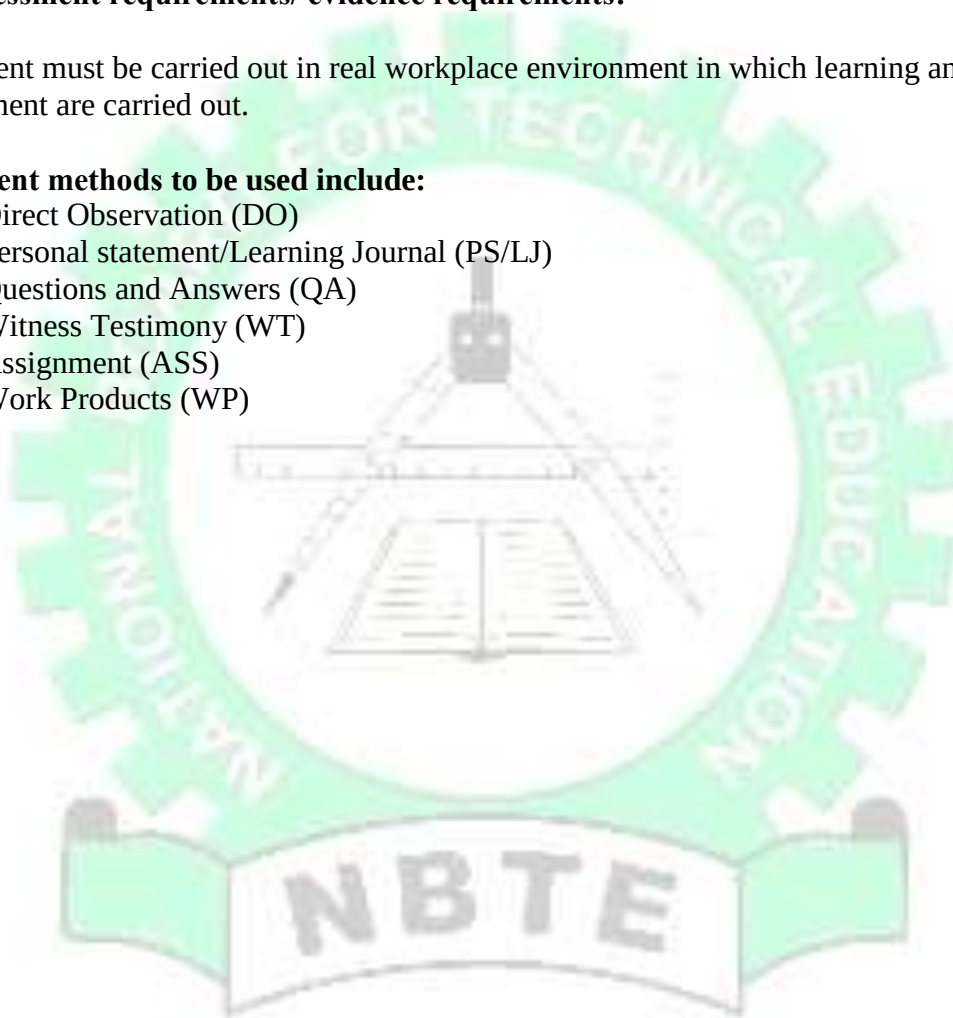
Unit Purpose: This unit is designed to equip learners with the competencies required to manage day-to-day hatchery operations as an enterprise.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development are carried out.

Assessment methods to be used include:

1. Direct Observation (DO)
2. Personal statement/Learning Journal (PS/LJ)
3. Questions and Answers (QA)
4. Witness Testimony (WT)
5. Assignment (ASS)
6. Work Products (WP)



Unit 007: Hatchery Operations and Enterprise Activities

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: Coordinate hatchery production activities	1.1	Prepare hatchery production schedules based on commercial production targets								
	1.2	Ensure proper allocation of labour, equipment and materials								
	1.3	Monitor workflow to ensure timely operations.								
	1.4	Evaluate production performance against planned targets								
LO 2: Manage hatchery resources and operational records	2.1	Maintain inventory of fingerlings, consumables, equipment and other supplies.								
	2.2	Monitor utilization of hatchery equipment and facilities.								
	2.3	Ensure accurate records of production and sales.								
	2.4	Prepare operational reports for management								
	2.5	Ensure proper storage and handling of hatchery materials								
LO 3: Implement hatchery enterprise management practices	3.1	Estimate operational costs								
	3.2	Apply cost-control measures to improve profitability.								
	3.3	Develop simple marketing strategies								
	3.4	Manage customer orders, enquiries, and after-sales support.								
	3.5	Maintain positive relationships with suppliers and customers.								
	3.6	Identify opportunities for enterprise growth								

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type	Evidence Ref. Page No.
The learner will:		The learner can:		
LO 4: Supervise personnel and improve hatchery performance	4.1	Assign duties to personnel.		
	4.2	Monitor staff performance		
	4.3	Provide guidance and on-the-job coaching to junior workers		
	4.4	Promote teamwork and effective workplace communication		
	4.5	Report operational and personnel issues		
	4.6	Monitor key performance indicators, including hatchability and customer satisfaction		
	4.7	Recommend improvements to enhance productivity		
Learner's Signature:			Date:	
Assessor's Signature:			Date:	
IQA Signature (if sampled)			Date:	
EQA Signature (if sampled)			Date:	

Unit 008: Improved Fish Seed Production Systems

Unit Reference Number:	AGR/FHM/008/L3
NSQ Level:	3
Credit Value:	6
Guided Learning Hours:	60
Practice Time:	120 Hours

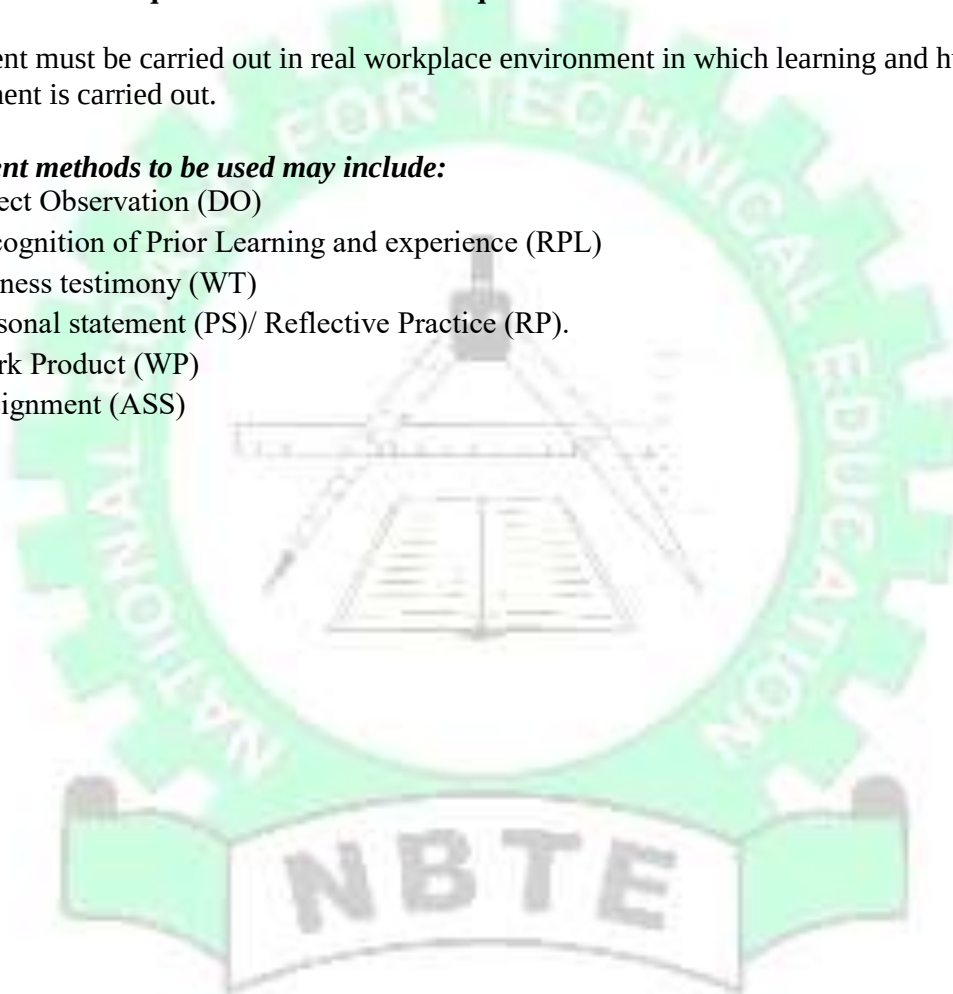
Unit Purpose: This unit is designed to equip learners with the knowledge and skill required to analyse, improve, and optimise fish seed production systems.

Unit Assessment Requirements/ Evidence Requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used may include:

1. Direct Observation (DO)
2. Recognition of Prior Learning and experience (RPL)
3. Witness testimony (WT)
4. Personal statement (PS)/ Reflective Practice (RP).
5. Work Product (WP)
6. Assignment (ASS)



Unit 008: Improved Fish Seed Production Systems

LEARNING OUTCOME (LO)		PERFORMANCE CRITERIA	Evidence Type				Evidence Ref. Page No.			
The learner will:		The learner can:								
LO 1: Evaluate fish seed production systems	1.1	Assess hatchery performance using production records and key performance indicators (KPIs)								
	1.2	Identify production bottlenecks affecting seed quality and output								
	1.3	Analyse hatchery efficiency using technical and economic indicators.								
LO 2: Improve broodstock and breeding management	2.1	Develop broodstock improvement plans.								
	2.2	Apply selective breeding and broodstock replacement strategies.								
	2.3	Optimize breeding schedules to ensure continuous seed supply.								
LO 3: Optimize hatchery operations	3.1	Improve incubation, larval rearing, and nursery management procedures								
	3.2	Optimize stocking density, feeding, and water quality management								
	3.3	Introduce appropriate technologies to improve hatchery efficiency.								
LO 4: Monitor production performance and implement corrective actions	4.1	Collect production data								
	4.2	Analyse production data								
	4.3	Introduce innovations that improve survival, growth, and seed quality								
	4.4	Monitor the effectiveness of improvements and update standard operating procedures (SOPs).								
Learners Signature:			Date:							

Assessors Signature:

IQA Signature (if sampled

EQA Signature (if sampled)

Date:

Date:

Date:



LIST OF FISH HATCHERY MANAGEMENT FACILITY AND EQUIPMENT

(List includes Equipment, Devices, Tools and Necessary Materials for Fish Hatchery Management)

Main Facility (Housing)

Fish hatchery Building (housing facility) with capacity for multi- species production (Minimum size 15x10m)

Units under Main Facility

- i. Broodstock holding/rearing tanks (Minimum size, 6x5x1.2m) -----3no
- ii. Indoor and outdoor Nursery tanks (Minimum size, 2x1x0.6m) -----6no
- iii. Hatchery troughs (indoor only) provide desired number and size.... (0.5x1x0.3m)
- iv. Fingerling holding tanks (All tanks can be made of steel, plastic, fibre glass, tarpaulin or concrete)
- v. Overhead water tank with filter system
- vi. Permanent water supply and distribution installation
- vii. High yielding borehole or alternative source of good quality water
- viii. Power generating plant or alternative source of adequate power supply with standard wiring system
- ix. Permanent screen nettings for the house and outdoor nursery/rearing tanks for the young fish

Equipment, Apparatus, Tools and Others

S/N	ITEM	QUANTITY REQUIRED (30 LEARNERS)
1.	Air pumps (aerators) with diffusers	5
2.	Electronic water sampling equipment (either for single or multi parameters)	5
3.	Complete water analysis kit	1
4.	Dry and wet thermometers	2
5.	Complete water re-circulatory (RAS) system	1 (optional)
6.	Microscopes (light microscope preferred)	5
7.	Water heater	1
8.	Light weight feed compounding machine	1
9.	Weighing balance (Scale)	6
10.	Sensitive weighing balance	1
11.	Calibrated measuring cans, Buckets, beakers and tubes,	10
12.	Magnifying Hand lens	10
13.	Secchi discs	2
14.	Biological dissecting kits	10
15.	Syringes and needles	Assorted
16.	Spatulas	10

17.	Broodstock harvesting nets (desired sizes)	3
18.	Fry/fingerlings harvesting nets (scoop and simple light nets)	5
19.	Egg mixing bowls/light containers	10
20.	Incubation jars/troughs	10
21.	Egg screen vats (mosquito size netting)	2 rolls
22.	Soft plastic spoon size or feather for egg mixing	10
23.	Syphoning tube/hose	Assorted
24.	Personal Protective Equipment (PPE)	10
25.	Hormones	1 bottle
26.	Normal saline	Assorted
27.	Disinfectants and detergents	Assorted
28.	Medications	Assorted
29.	Cotton wool	Assorted
30.	Blades	Assorted
31.	Hand towels	Assorted
32.	Industrial salts	Assorted
33.	Sorting table	1
34.	Hand gloves	Assorted

LIST OF PARTICIPANTS FISH HATCHERY MANAGEMENT NSQ/NOS DEVELOPMENT WORKSHOP (CRITIQUE AND VALIDATION) (LEVELS 1-3)			
S/N	FULL NAMES	CONTACT ADDRESS	EMAIL
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4.	Dr. Elizabeth Mangai	Federal College of Fisheries & Marine Technology, Lagos.	lizmangai@yahoo.com
5.	Hammed Muinat A.	Hybrid Feeds Ltd	emailmuinat@gmail.com
6.	Aliyu Adamu	Dyna Integrated Farm, Gombe State	jauroaliyujr@gmail.com
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