****

**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARD**

**FOR**

**POULTRY *(KIENYEJI)* PRODUCTION OPERATOR**

**KNQF LEVEL: 3**

**OCCUPATIONAL STANDARD ISCED CODE: 0811 254 A**

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# FOREWORD

Agriculture plays an important role in Kenya’s economy. This importance is reflected in the positive correlation between growth in the agricultural sector and that of the national economy. Kenya’s economy registered a growth of 3.3% between 2013 and 2014, agriculture was the leading sector which contributed 27.3% to the Gross Domestic Product (GDP) in 2014. In this regard, crops, animal production, and fishing and aquaculture contributed 19.7%, 4.9% and 0.8% respectively (25.4%), while the balance of 1.9% came from forestry and other support activities. Like most countries in Africa, majority (61%) of Kenya’s population rely on agriculture for employment despite the challenges of climate change, soil degradation and increasing population pressure. In order to enhance the productivity of the work force and ensure a productive and innovative agricultural sector, as well as food security, meaningful education and training of all people involved is of utmost importance.

In the past Agricultural Technical and Vocational Education and Training (ATVET) did not always receive adequate attention from policy-makers. The education system emphasized on acquiring knowledge rather than skills development. This resulted to most farmers and the stakeholders in agriculture lacking the requisite skills. Current reforms in the education system aim at addressing this challenge by reforming the curriculum, its delivery and its assessment. These reforms can only be achieved through Competency Based Education and Training (CBET) approach. The reforms demand for a competency-based curriculum which is a tool that will aid in the development of skills, knowledge and attitudes of the farmers. Such training will improve crop and animal husbandry skills which will in turn contribute to increased productivity and improvement of agriculture in the country. Ideally, this education and training will not only include farmers, but all professions involved in agriculture

These Occupational Standards as such presents us with a base for developing curricula for training in the poultry subsector and presents the basis for content development for the curriculum in *Kienyeji* Chicken Production Operation Level 3. It will lead to a situation where the trainees will gain skills required in their occupation/jobs. The curriculum to be developed based on these OS will revolutionize the Agriculture sector in Kenya.

# PREFACE

Poultry farming has been on the increase in the last ten years due to diminishing land size, high population density and the escalating un-employment levels in formal sector. It contributes to the lives of 21 million Kenyans and 6.1% of the agricultural GDP. There are approximately 32 million birds in Kenya out of which 76% are free ranging indigenous chicken, 8% are broilers and 14% commercial layers. The indigenous poultry production involves 75% of rural households. As of 2011, it was reported that approximately 71% of eggs and poultry meat in Kenya are derived from indigenous poultry. In 2006, it was reported that commercial poultry production constitutes 23.8% of the total poultry population, with broilers representing 16.2% and layers another 7.8%. Other poultry species such as ducks, guinea fowl, Quails and turkeys comprise about 2.2% of the total poultry population. The industry is therefore is supposed to play a strategic role in the ongoing socio-economic pillar under the vision 2030.

However, the industry has seen slow growth over the past years due to lack of skills and increasing costs of production. This is despite the fact that the sub-sector contributes positively to wealth creation, poverty alleviation, and gender equity especially in the rural areas. The industry contributes to the macro economy by generating incomes for the value chain actors, creation of employment opportunities for rural people and provision of source of protein for poor families and manure for their gardens.

To address the challenge of lack of skilled labour, a Competency Based curriculum development process was initiated. 11 Jobs/Occupations were identified. The information generated from the task analysis was also used to develop the Units of competences for each job. This was done by experts drawn from Technical training institutions, Universities and industry representatives. The result of the analysis was to the realization of Occupational Standards for 11 jobs along the poultry value chain.

The OS were presented to the Poultry Sector Skills Advisory Committee (PSSAC) who made recommendations for improvement and later submitted to the next stages of approval by the ……... The OS development process was a rigorous exercise that involved wide consultations with various stakeholders like expert workers with the aim of enriching it and promoting its acceptance. The end product is a rich and well thought tool that will be used to develop *Kienyeji* Chicken Production Operation Level 3 curriculum that shall deliver Competence Based Training and produce competent graduates that can employed, entrepreneurs or self-employed in the poultry industry.

# ACKNOWLEDGEMENTS

These occupational standards were developed through the combined efforts of different stakeholders in the poultry subsector namely private practitioners, Dairy Training Institute (DTI), Animal Health Training institutes (AHITI), regulators and key state departments. We wish to acknowledge the invaluable contribution received from the private sector industry players who provided inputs towards the development of these occupational standards against which the curriculum was developed.

With the Occupational /Job Analysis charts in hand, the stakeholders provided technical inputs towards the development and completion of this OS. They sat through many hours putting together all the knowledge, skills and attitudes that a Poultry industry worker would require in effectively performing his/ her duties and tasks as per the occupational standards developed.

We are most sincerely thankful to the heads of these institutions who released their staff to join in this important course. Our gratitude goes to the various facilitators that moderated several workshops and ensured that all deliberations and outputs were captured and compiled. These persons did not only demonstrate patience, but also provided leadership by motivating and guiding the groups towards the finalization of this curriculum.

We are greatly indebted to the Food Security and Drought Resilience Programme (FSDRP) with support of the German Development Cooperation (GIZ), which enabled the implementation of the curriculum development process through the Food Security Project (FSP). In the same breath, we are indebted to the National Coordinator of the GIZ Comprehensive Africa Agricultural Development Programme (CAADP) ATVET project who was instrumental in enabling the smooth and close cooperation between the project and the key government ministries namely Ministry of Agriculture, Livestock, Fisheries and Irrigation (MoALF&I) and Ministry of Education (MoE).

Last but not least, we are grateful to any other person, institution, organization or company who played any role in making this process successful but has not been mentioned. We dearly acknowledge your contribution and support.

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# ABBREVIATIONS AND ACRONYMS

|  |  |
| --- | --- |
| AU - IBAR | African Union – InterAfrican Bureau for Animal Resources |
| CAADP | Comprehensive Africa Agricultural Development Programme |
| CAD | Computer Assisted Drawing |
| CBET | Competency Based Education and Training |
| DTI | Dairy Training Institute |
| EMS | Environmental Management Systems |
| FSDRP | Food Security and Drought Resilience Programme |
| FSP | Food Security Project |
| GDP | Gross Domestic Product |
| GMP | Good Manufacturing Practices |
| ICT | Information Communication Technology |
| KNQF | Kenya National Qualifications Framework |
| MoALF&I | Ministry of Agriculture, Livestock, Fisheries and Irrigation |
| MoE | Ministry of Education |
| OS | Occupational Standard |
| PPE | Personal Protective Equipment |
| PSSAC | Poultry Sector Skills Advisory Committee |

# KEY TO UNIT CODE

Sector / Industry

Sub Sector

Occupational Area

Version Control

Unit of Competence Number

ISCED level, Programme Orientation and Level of Completion

xx

x

xxx

x

x

x

# OVERVIEW

Poultry Kienyeji Chicken Production Level 3 qualification consists of units of learning that a person must achieve to construct Kienyeji chicken structures, manage Kienyeji chicken breeding flock, and manage Kienyeji chicken health and welfare.

The Units of competency comprising Poultry Kienyeji Chicken Production Level 3 qualification include the following core units:

**MODULAR UNITS OF COMPETENCY**

|  |  |
| --- | --- |
| **Unit Code** | **Unit Title** |
| 0732 241 01A | Construct *Kienyeji* Chicken Structures |
| 0732 241 01A | Manage *Kienyeji* Chicken Breeding Flock |
| 0841 241 03A | Manage *Kienyeji* Chicken Health and Welfare |

# CONSTRUCT KIENYEJI CHICKEN STRUCTURES

**UNIT CODE:** 0732 241 01A

**UNIT DESCRIPTION:**

This unit specifies the competencies required to construct kienyeji chicken structures. It involves preparations to construct Kienyeji chicken structures, construction of Kienyeji chicken structures and equipping the Kienyeji chicken structures.

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Prepare to construct *Kienyeji* chicken structures | 1. Personal Protection Equipment and Apparel (PPEs) are gathered and donned based on work requirements 2. Construction materials are assembled at construction site according to work place policy 3. Occupational safety and health procedures is identified as per work place procedures. 4. Site of the *Kienyeji* house is cleared based on guidelines in the *Kienyeji* Production Manual *(****PPM****)* 5. Construction records was identified as per work place procedure. |
| 1. Construct Kienyeji chicken house structure | 1. ***Kienyeji chicken house*** layout is pegged according to design 2. Poultry house foundation is excavated based on house design, topography and soil type 3. Poultry house foundation is laid based on type of construction materials and design 4. ***Kienyeji chicken house parts*** are constructed as per house design and type of construction materials procured. |
| 1. Equip *Kienyeji* chicken house | 1. ***Kienyeji chicken house equipment*** installed or stored as per specifications in the poultry production manuals 2. Fixed ***Kienyeji chicken house structures*** are constructed as per provided design and type of construction materials available 3. Movable poultry house structures are installed in the poultry house based on the design and pattern recommended in the PPM |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Range** | | |
| 1. PPMincludes but not limited to | * National Poultry Development Programme Manual * Production manuals by breeding and multiplication organizations like Issa Brown, Cobb, Kenchic and KALRO | | |
| 1. Personal Protection Equipment and Apparel (PPEs) may include but not limited to: | * Overalls * Gumboots * Nose and mouth mask | * Goggles * Gloves * Head gear | |
| 1. Kienyeji chicken house may include but not limited to: | * Standard open sided house * Environmentally controlled house * Slated floor house | | * Battery cage house * Deep litter house |
| 1. Kienyeji chicken house parts may include but not limited to: | * Walls * Floor * Roof |  | |
| 1. Kienyeji chicken house structures includes but not limited to | * Perches * Laying boxes /nests * Cages * Pallets | * Electrical / water lines * Slatted floors * Brooder | |
| 1. Kienyeji chicken house equipment may include but not limited to: | * Waterers * Feeders * Thermometer | * Heat source * Hygrometer | |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required skills**

The individual needs to demonstrate the following skills:

* Communication
* Carpentry
* Fabrication
* Negotiation
* Numeracy
* Observation
* Problem solving

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Area measurements and conversions
* Types and dimensions of *Kienyeji* chicken house designs
* Carpentry
* *Kienyeji* chicken allowances for feeding and watering spacing
* Geometry (symmetry)
* Handling and assessment construction materials
* House orientation
* Occupational health and safety procedures
* Types of poultry house equipment

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   * 1. Gathered and donned appropriate Personal Protection Equipment and Apparel (PPE)based on work requirements   2. Constructed poultry house parts as per provided house design and type of construction materials assembled.   3. Constructed poultry house structures as per provided design and type of construction materials available   4. Installed poultry house structures timely as per the pattern recommended in the PPM   5. Poultry house equipped with required poultry house equipment |
| 1. Resource Implications | The following resources **MUST** be provided:   * 1. Assessment location / Upcoming layer production farm   2. Personal Protective Equipment and Apparel   3. Assessment materials |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Written tests   3. Oral questioning   4. Third party report |
| 1. Context of Assessment | Competency may be assessed on the job, off the job or during industrial attachment. Off the job assessment must be undertaken in a closely simulated workplace environment. |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

# MANAGE KIENYEJI CHICKEN BREEDING FLOCK

**UNIT CODE:** 0811 241 02A

**UNIT DESCRIPTION:**

This unit specifies the competencies required to manage *Kienyeji chicken* chicken breeding flock. It involves performing chicken breeding, feeding breeding flock, maintaining general cleanliness, monitoring Kienyeji chicken performance and handling Kienyeji chicken eggs.

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Perform chicken breeding | 1. Desirable traits of economic importance are identified as per poultry production guidelines in the poultry production manual (PPM) and the *Kienyeji* chicken rearing and breeding guides 2. Mating males and females are selected as per poultry production guidelines in the PPM 3. Mating ratio is determined as per the poultry production manual 4. Selected breeding flock is allowed to mate based on determined mating ratio 5. Poultry breeding record is identified as per livestock production manual. |
| 1. Feed breeding flock | 1. PPE’s are identified as per work place procedure. 2. Suitable feed type is identified and selected based on flock age 3. Feeding and watering equipment are prepared based on their condition, position and flock size 4. Adequate amount of feed and water is determined, weighed and dispensed according to *Kienyeji chicken* feeding guides in the PPM |
| 1. Maintain general cleanliness | 1. Suitable detergents are identified as per work place practices and PPM guidelines 2. Cleaning of feeding and watering equipment is performed as per work place procedures and practice and PPM guidelines 3. Sanitization of poultry house, equipment and personnel are carried out as per work place practice and PPM guidelines |
| 1. Monitor *Kienyeji* chicken performance | 1. ***Chicken vices*** are monitored as per PPM guidelines and work place practices 2. ***Performance assessment*** equipment and tools are selected based on work place practices 3. Performance assessment is carried out as per work place procedures 4. Non-performing *Kienyeji chicken* are culled as per work place procedures. |
| 1. Handle *Kienyeji* chicken eggs | 1. Poultry eggs are collected as per the work place practices 2. Poultry eggs are sorted and graded as per poultry production requirement 3. Poultry eggs are stored as per PPM guidelines and farm practice. |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Chicken vices may include but not limited to: | * Pecking * Cannibalism * Pica |
| 1. Performance assessment may include but not limited to: | * Growth rate * Laying percentage |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required skills**

The individual needs to demonstrate the following skills:

* Communication
* Negotiation
* Numeracy
* Observation
* Problem solving

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Traits of economic importance in *Kienyeji chicken*
* Selection methods and aids
* *Kienyeji chicken*  mating ratios
* Mating behavior in chicken
* Breeding systems
* Feeding requirements of *Kienyeji* chicken breeding flock
* *Kienyeji chicken* house hygiene and biosafety
* Poultry vices
* *Kienyeji* chicken growth rates and laying percentages
* Cullingcriteria
* Chicken eggs handling, grading and storage
* Occupational health and safety procedures

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   1. Selected mating males and females as per poultry production guidelines in the PPM    1. Determined mating ratio as per the poultry production manual    2. Allowed selected breeding flock to mate based on determined mating ratio    3. Determined, weighed and dispensed adequate amount of feed and water based on *Kienyeji chicken* feeding guides in the PPM    4. Carried out sanitization of poultry house, equipment and personnel as per work place practice    5. Culled non-performing *Kienyeji chicken* as per work place procedures.    6. Collected poultry eggs as per the work place practices    7. Sorted and graded poultry eggs as per poultry production requirement |
| 1. Resource Implications | The following resources **MUST** be provided:   1. Assessment location / *Kienyeji chicken* production farm 2. Personal Protective Equipment and Apparel |
| 1. Methods of Assessment | Competency may be assessed through:   1. Observation 2. Written tests 3. Oral questioning 4. Third party report |
| 1. Context of Assessment | Competency may be assessed on the job, off the job or during industrial attachment. Off the job assessment must be undertaken in a closely simulated workplace environment. |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |

# MANAGE KIENYEJI CHICKEN HEALTH AND WELFARE

**UNIT CODE:** 0841 241 03A

**UNIT DESCRIPTION:**

This unit specifies the competencies required to manage poultry health. It involves farm biosecurity, acquisition of health control equipment and supplies, parasite control, vaccination, disease control and record keeping

**ELEMENTS AND PERFORMANCE CRITERIA**

|  |  |
| --- | --- |
| **ELEMENT**  These describe the key outcomes which make up workplace function. | **PERFORMANCE CRITERIA**  These are assessable statements which specify the required level of performance for each of the elements.  ***Bold and italicized terms are elaborated in the range.*** |
| 1. Maintain chicken farm biosecurity | 1. ***Biosecurity structures and equipment*** are constructed and installed respectively in accordance with the designs and ***poultry production manuals (PPM)*** 2. ***Biosecurity measures*** are determined as per PPM and farm practice 3. Personal Protection Equipment and Apparel are identified, gathered and donned based on job requirements |
| 1. Manage Kienyeji chicken vaccination | 1. Poultry vaccines are administered in accordance with developed schedule 2. Vaccinated poultry are observed to ascertain vaccine intake and check for abnormal reactions in accordance with PPM and vaccine manufacturer’s guidelines 3. ***Vaccination details*** are recorded as per PPM guidelines and farm policies |
| 1. Control chicken parasites, pests and predators | 1. Poultry flock performance, behavior and droppings are observed daily to detect presence of internal and external parasites as per PPM guidelines 2. Poultry flock is de-wormed to control internal parasites following drug manufacturer’s guidelines 3. External parasites are controlled using guidelines in the PPM |
| 1. Manage chicken Kienyeji diseases and vices | 1. Poultry showing signs of disease are isolated for further observation per PPM guidelines 2. Poultry farm supervisor or qualified veterinary professional is contacted for diagnosis and treatment of sick birds. 3. Poultry are monitored for vices as per farm practice 4. Poultry vices are controlled as per poultry production manuals |

**RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

|  |  |
| --- | --- |
| **Variable** | **Range** |
| 1. Biosecurity structures and equipment includes but not limited to | * Boundary fence (electric or stone wall) * Gate * Entry showers, both at the gate and at the house sites * Foot bathes and vehicle sprayers * Hand washing gadgets * Post mortem rooms * Mortality disposal pits * Rodent and pest control traps |
| 1. Biosecurity Measures includes but not limited to | * Color coded clothing for different parts of the farm e.g. feed stores, egg sorting and flock houses * Human traffic restriction * Showering * Rodent and pest control traps * Personal protective equipment |
| 1. Poultry production manuals (PPM)   includes but not limited to | * National Poultry Development Program Manual * Breeder’s manuals by breeders like Cobb and Issa Brown |
| 1. Preparations includes but not limited to | Activities that are carried out before, during and after vaccination;   * Provision of anti-stress nutritional premixes * Feed and water withdrawal * Confirmation of bird numbers to determine dosage * Provision of disinfectant free water * Positioning vaccine receptacles in the poultry house for oral vaccines * Confine and restrain poultry for injectable and ocular-nasal vaccination |
| 1. Vaccination details includes but not limited to | * Type of vaccine * Type of disease vaccinated against * Age of poultry * Date and time of vaccination * Date of manufacture and expiry of vaccine * Vaccine source and batch number * Number of birds vaccinated * Identification of birds (flock, type, breed) |

**REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

**Required skills**

The individual needs to demonstrate the following skills:

* Cleaning
* Communication
* De-beaking
* Diagnostic
* Farm equipment operation skills
* Negotiation
* Observation
* Poultry handling and care

**Required knowledge**

The individual needs to demonstrate knowledge of:

* Animal health care
* Animal welfare
* Cleaning and disinfection procedures
* De-beaking procedure
* Mode of disease and parasite spread
* Poultry behavior
* Poultry biosecurity measures
* External parts of chicken body
* Poultry nutritional disorders
* Signs of ill health in poultry
* Types of cleaning agents, sanitizers and disinfectant
* Types of external and internal poultry parasites
* Types of vaccines
* Vaccination sites

**EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range

|  |  |
| --- | --- |
| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:   * 1. Implemented biosecurity measures   2. Put in place control measures for internal and external parasites   3. Implemented vaccination program |
| 1. Resource Implications | The following resources must be provided:   * 1. Assessment location / poultry production farm   2. Personal Protective Equipment and Apparel |
| 1. Methods of Assessment | Competency may be assessed through:   * 1. Observation   2. Written tests   3. Oral questioning   4. Third party report |
| 1. Context of Assessment | Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment. |
| 1. Guidance information for assessment | Holistic assessment with other units relevant to the industry sector, workplace and job roles is recommended. |