Model Curriculum

QP Name: Paddy Farmer

QP Code: AGR/Q0101

Version: 3.0

NSQF Level: 3

Model Curriculum Version: 2.0

Agriculture Skill Council of India || Agriculture Skill Council of India (ASCI), 6th Floor, GNG Tower, Plot No. 10, Sector - 44

Table of Contents

Training Parameters

Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Field Crops Cultivation (Food Crops)
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/6111.0101
Minimum Educational Qualification and Experience	Minimum Educational Qualification: Grade 10 OR Grade 8 with two years of (NTC/ NAC) after 8th OR Grade 8 pass and pursuing continuous schooling in regular school with vocational subject OR 8th grade pass with 2-year relevant experience OR 5th grade pass with 5-year relevant experience OR Previous relevant Qualification of NSQF Level 2 with 1-year relevant experience OR Previous relevant Qualification of NSQF Level 2.5 with 6 months' relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	17 Years
Last Reviewed On	28/04/2022
Next Review Date	28/04/2025
NSQC Approval Date	28/04/2022
QP Version	3.0
Model Curriculum Creation Date	28/04/2022
Model Curriculum Valid Up to Date	28/04/2025
Model Curriculum Version	2.0

Minimum Duration of the Course	300 Hours
Maximum Duration of the Course	300 Hours

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Discuss the job role of Paddy Farmer and various opportunities in paddy cultivations
- Select appropriate varieties for Paddy cultivation
- Demonstrate procurement of Seed
- Demonstrate the seed treatment in Paddy cultivation
- Demonstrate Nursery preparation and their Management in Paddy cultivation
- Demonstrate the preparation of seedling for transplantation
- Demonstrate the process of Land Preparation
- Demonstrate Land preparation and transplantation in SRI method
- Demonstrate the Ploughing and pudding of soil
- Demonstrate transplantation of seedlings in the main field
- Demonstrate the procedure of soil sampling
- Describe components of soil analysis report
- Interpret Soil analysis report for fertilizer application
- Demonstrate application of organic and inorganic fertilizers
- Demonstrate spraying weedicides and herbicides to control weeds
- Identify various weeds in paddy field and explain various measures for weed control
- Identify various pests in paddy field and their control measures
- Identify various diseases based on the symptoms in paddy and their control measures
- Explain the importance of pest and disease resistance varieties
- Explain critical stages of irrigation requirements in Paddy
- Explain the importance of drainage
- Demonstrate irrigation of paddy field as per the irrigation schedule
- Demonstrate harvesting of paddy field
- Demonstrate Threshing and winnowing of paddy grains
- Demonstrate measures for post-harvest management
- Discuss how to adhere to personal hygiene practices and demonstrate ways to ensure cleanliness around the workplace
- Describe how to adhere to safety guidelines and show how to administer appropriate emergency procedures

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Bridge Module	**05:00**	**00:00**	**0:00**	**0:00**	**05:00**
Module 1: Introduction to the role of Paddy Farmer	05:00	0:00	0:00	0:00	05:00
AGR/N0101: Seed Preparation in Paddy **NOS Version- 2.0** **NSQF Level- 4**	**10:00**	**15:00**	**0:00**	**0:00**	**25:00**
Module 2: seed treatment and Nursery preparation in Paddy	10:00	15:00	0:00	0:00	25:00
AGR/N0102: Land preparation and transplantation in Paddy **NOS Version- 2.0** **NSQF Level- 4**	**15:00**	**15:00**	**0:00**	**0:00**	**30:00**
Module 3: Preparation of Land and Transplantation of paddy seedlings	15:00	15:00	0:00	0:00	30:00
AGR/N0103: Integrated Nutrient Management in Paddy **NOS Version- 2.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 4: Nutrient Management in Paddy	10:00	20:00	0:00	0:00	30:00
AGR/N0104: Weed Management in Paddy **NOS Version- 2.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 5: Weed control in paddy	10:00	20:00	0:00	0:00	30:00
AGR/N0105: Integrated Pest and Disease Management in Paddy	**10:00**	**50:00**	**0:00**	**0:00**	**60:00**

NOS Version- 2.0 **NSQF Level-4**					
Module 6: Pest and Disease Management in Paddy	10:00	50:00	0:00	0:00	60:00
AGR/N0106: Irrigation Management in Paddy **NOS Version- 2.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 7: Water Management in Paddy	10:00	20:00	0:00	0:00	30:00
AGR/N0107: Harvesting and Post-Harvest Management in Paddy **NOS Version- 2.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 8: Harvesting and Post-Harvest Management in Paddy	10:00	20:00	0:00	0:00	30:00
AGR/N9903: Maintain health and safety at the workplace **NOS Version- 3.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 9: Hygiene and cleanliness	03:00	03:00	0:00	0:00	06:00
Module 10: Safety and emergency procedures	07:00	17:00	0:00	0:00	24:00
DGT/VSQ/N0101 Employability Skills **NOS Version-1.0** **NSQF Level-2**	**30:00**	**00:00**	**0:00**	**0:00**	**30:00**
Module 11: Employability Skills	30:00	00:00	0:00	0:00	30:00
Total Duration	**120:00**	**180:00**	**0:00**	**0:00**	**300:00**

Module Details

Module 1: Introduction to the role of Paddy Farmer

Bridge Module

Terminal Outcomes:

- Discuss the job role of Paddy Farmer.

Duration: 05:00	**Duration**: 0:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the size and scope of paddy cultivation in agriculture industry and its sub-sectors • Get acquainted with the agro-climatic conditions required for paddy cultivation • Comprehend different high yielding verities of rice, hybrid rice, aromatic rice, aerobic rice and boro rice etc. • Discuss the role and responsibilities of a Paddy Farmer • Understand state farmers right under PPV & FRA act 2001 • Identify various scope and opportunities for a Paddy Farmer	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

Module 2: seed treatment and Nursery preparation in Paddy

Mapped to AGR/N0101 V2.0

Terminal Outcomes: .

- Select appropriate varieties for Paddy cultivation
- Demonstrate procurement of Seed
- Demonstrate the seed treatment in Paddy cultivation
- Demonstrate Nursery preparation in Paddy.
- Demonstrate the Nursery management in Paddy.
- Demonstrate the preparation of seedling for transplantation

Duration: 10:00	**Duration: 15:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance of seed variety in the cultivation of Paddy • Explain the factors to be considered in the selection of seed variety of Paddy • Explain the relevant legislation, standards, policies, and procedures in work • Explain the relevant health and safety requirements applicable in the work environment • Explain who to approach for support in order to obtain work related information, clarifications and support • Explain the importance of following health, hygiene, safety and quality standards and the impact of not following the standards on consumers and the business • Explain the documentation and related procedures applicable in the context of work • Describe various climatic parameters such as maximum and minimum temperatures, intensity and distribution of precipitation (rainfall), relative humidity etc., • Explain about various pest and diseases specific to a given agro climatic region, the life cycles of these pests and diseases and the sources of infection • List out different varieties and duration • Explain about yield of different	• Identify and select appropriate seed variety of paddy based on agro climatic conditions, climate, soil type and required yield • estimate the seed requirement with reference to field size and variety • identify various vendors / suppliers (including government nurseries / department) of the seed that are certified • Examine the quality of seed material from each source in terms of free from pests and diseases, germination percentage etc. • Identify the prevailing market rates for the seed material and select appropriately to procure • Show how to identify and procure the seed material • identify an appropriate storage space (free of infestation and having congenial climatic conditions for the seed) • Demonstrate the safe storage practices of procured seed material (if there is time lag between procurement and sowing / nursery preparation) as per recommended place and procedure • Demonstrate various seed treatment methods • Demonstrate the procedure for seed treatment as per the dosage recommended by the state agriculture university /department or as prescribed by the pesticide

varieties • Explain about pest resistance and susceptibility and list out various pest and disease resistant varieties • Explain about biotic and abiotic stress (in terms of temperature fluctuations, dry spells, heavy downpour during critical stages etc.,) • Describe about critical stages in Paddy farming and its importance • Explain types of nursery methods suitable to a given agro-climatic zone and resource availability • Explain about preparatory activities done before sowing of seeds on nursery beds • State practices of nursery preparation and management • Describe pest and disease management in nurseries • Explain uses and harmful effects of various pesticides • Describe safe methods of handling the pesticides • Explain ways to control pests and diseases in paddy nursery	manufacturer • Identify various chemicals used for seed treatment in Paddy • Show how to interpret safety precautions in the reading material provided with the pesticide • Demonstrate the basic first aid and safety measures • Demonstrate the safe measures while handling chemicals for seed treatment and storage after use • Demonstrate the procedure for ploughing soil • Demonstrate the preparation of nursery beds with optimum utilization of resources • Demonstrate the preparation of irrigation and drainage channels • Show how to check the quality of the seeds before sowing • Demonstrate the procedure for preparation of seeds for sowing on Nursery beds such as soaking • Demonstrate broadcasting the sprouted seed as per the recommended seed rate • Demonstrate the procedure of manure application • Demonstrate measures for weed control • Demonstrate measures for pest and disease control • Demonstrate uprooting the seedlings for transplantation at the recommended stage for a given variety and soil • Demonstrate the procedure for setting seedlings in paddy transplanter tray
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Paddy seeds, Seed Treatment chemicals, water, seedling tray-Paddy Transplanter	

Module 3: Preparation of Land and Transplantation of paddy seedlings

Mapped to ARG/N0102 v2.0

Terminal Outcomes:

- Demonstrate the process of Land Preparation.
- Demonstrate Land preparation and transplantation in SRI method
- Demonstrate the Ploughing and pudding of soil
- Demonstrate transplantation of seedlings in the main field

Duration: 15:00	**Duration: 15:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain about various machines used in preparation of soil for paddy cultivation • Explain the significance of various activities like cleaning, ploughing and puddling in Land preparation • Explain the importance of land levelling as per different methods of irrigation • Describe various methods of land preparation and their influence on the soil tilth • Explain advantages and disadvantages of transplanting and direct sowing methods • Explain advantages and challenges of line transplanting and space between rows • Explain density of transplanting and the influence on the crop yield say through practice of "SRI" Cultivation • Explain various practices such as intercropping, relay cropping, sequential cropping etc. • Describe Integrated Farming system	• Demonstrate cleaning and ploughing the field • Demonstrate the preparation of main field for Puddling by submerging with water • Demonstrate puddling and levelling the field • Create irrigation and drainage channels • Demonstrate preparation and compacting the bunds • Demonstrate land preparation activities in System of Rice Intensification (SRI) method of Paddy Cultivation • Demonstrate seed dipping of paddy seedlings in plant protection chemicals as per dosage • Demonstrate setting inter-row distance as per the requirement of inter-cultivation operations in paddy transplanter • Demonstrate the use of Paddy Transplanter • Demonstrate different transplanting methods in paddy • Demonstrate advanced practices such as SRI method, hybrid rice, direct seeded method, aromatic rice, aerobic rice and boro rice cultivation • Show how to transplant the seedlings with recommended spacing, number of plants per hill as per the yield • Demonstrate safe handling of seedlings during transplantation • Demonstrate application of manures and fertilizers as per recommended dosages • Demonstrate various cropping practices such as relay cropping, intercropping, sequential cropping etc.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Ploughing equipment, sub soiler, tiller, puddler, leveller, Paddy seedlings, paddy transplanter, plant protection chemicals	

Module 4: Nutrient Management in Paddy

Mapped to AGR/N0103 v2.0

Terminal Outcomes:

- Demonstrate the procedure of soil sampling
- Describe components of soil analysis report
- Interpret Soil analysis report for fertilizer application
- Demonstrate application of organic and inorganic fertilizers

Duration: 10:00	**Duration: 20:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe various procedures of soil sampling • Explain general nutrient requirement for paddy cultivation • Explain about soil testing laboratories and various nutrients (macro and micro) that are analysed • Describe components of soil analysis report • Explain recommendations based on the availability of various micro and macro nutrients in a given soil or crop sample • Explain various soil types, their advantages and disadvantages with reference to the nutrient status • Explain various methods of land preparation to maintain soil tilth and nutrient based on the soil type • Explain appropriate methods of application of various fertilizers and micro nutrients • Explain the importance of time of application in a particular day and crop life cycle • Discuss about various soil micro-organisms beneficial for the nutrient enrichment in soil • Explain the process of record keeping for fertilizer application and intervals of application	• Demonstrate the soil sampling procedure from the field as per recommendations • Demonstrate drying and preparation of soil samples • Demonstrate Packing, labelling of the soil sample for submitting to nearby soil testing laboratory • Show how to interpret the soil analysis report after collecting from the lab • Show how to interpret the required dosage for the nutrient enrichment in soil as per the soil health card • collect the recommended organic and inorganic fertilizer dosage from agriculture department based on the soil analysis report • select appropriately decomposed farm yard manure for soil application • Demonstrate the application of FYM to the soil as per recommended dosage and procedure before planting during crop cultivation • Demonstrate various cultural practices that enhances the soil nutrient status for the benefit of crop stand • Demonstrate application of beneficial micro-organisms for the nutrient enrichment • Demonstrate the application of organic, bio fertilizers and inorganic fertilisers for macro and micro nutrients as per the recommended dosage, timing and method of application • Show how to maintain the record of application of fertilizers and intervals • Estimate the quantity of fertilizers required at various stages
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Soil Sampler, soil packing bags, soil analysis report, organic and inorganic fertilizers,	

Module 5: Weed control in paddy

Mapped to AGR/N0104 v2.0

- Explain measures for weed control.
- Demonstrate spraying weedicides and herbicides to control weeds
- Identify various weeds in paddy field

Duration: 10:00	**Duration: 20:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe about various weeds and their influence on crop yield • Explain about mimicry weeds and its importance • Explain various types of weeds and their efficient control methods • Discuss critical stages of weed control	• Demonstrate the process of incorporation of weeds and stubbles during summer ploughing and puddling • Demonstrate the manual weeding / chemical weedicide application at appropriate stages of crop growth • Demonstrate the use of various tools and equipment for weed control • Identify various weeds in paddy field • Demonstrate the use of bio herbicides and chemical herbicides for weed control wherever feasible • Show how to maintain field bunds clean to avoid proliferation of weed seeds • Show how to identify Echinochloa crus-galli in paddy fields
Classroom Aids	
Training Kit (Trainer Guide, Presentations), various weeds, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
PPE kit, Weeds, weedicides, herbicides, weeding equipment like sickle, hoe etc.	

Module 6: Pest and Disease Management in Paddy

Mapped to NOS AGR/N0105 v2.0

Terminal Outcomes:

- Identify various pests in paddy field
- Identify diseases based on the symptoms on the leaf
- Demonstrate chemical control of pests and diseases.
- Explain the importance of pest and disease resistance varieties

Duration: 10:00	**Duration: 50:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance of Integrated Pest and Disease Management • Explain signs and symptoms of various pest and disease infestation in Paddy • Explain the characteristics & life cycle and symptoms of infestation for different insect pests • Discuss about ETL and list few ETL levels of pests for spraying chemicals • Explain the relevant legislation, standards, policies, and procedures in work • Explain the relevant health and safety requirements applicable in the work environment • Explain who to approach for support in order to obtain work related information, clarifications and support • Explain the importance of following health, hygiene, safety and quality standards and the impact of not following the standards on consumers and the business • Explain the documentation and related procedures applicable in the context of work • Explain the importance of safe production and safe produce • Discuss paddy growing conditions (conventional or sri) • Explain about major pests and	• Identify different types of pests (stem borers, gall midge, hoppers, hispa and gundhi bug etc) in paddy crop • identify stage of crop and pest incidence and prepare pest calendar • identify the pest with signs and symptoms of damage such as dead hearts, burns, feeding marks • identify behavior of the pest (like diurnal or nocturnal, egg laying behavior, attraction to colours etc.) • identify natural enemies of the pests(naids /dragon flies, trichogramma, mirid bug, lady bird beetles, spiders, preying mantids etc.) • identify types of diseases associated (blast, bacterial leaf blight, sheath rot, sheath blight, tungro) in the crop • identify crop stage and disease incidence disease calendar • identify signs and symptoms of different diseases (leaf spots, discoloured areas, leaf margins drying, stunted growth) • identify mode of transmission (implements, vectors, water, rain, wind) • Demonstrate stubble clearing to drive away the diapausing larvae • Demonstrate Seed and seedling treatment • Demonstrate the pest and disease control measures in SRI method • Demonstrate installing traps such as light, pheromone, sticky traps etc.

diseases and their behaviour • Explain the significance of resistant varieties • Describe operations that have an impact on pest incidence and need to be taken up while land preparation and sowing (stubble clearing, resistant varieties, seed and seedling treatment etc. • Explain the advantages and methods of soil application of neem cake, bioagents like trichodermaviride, pseudomonas florescens etc. • Explain the advantages of erecting bird perches 10 per acre. • Describe about various traps (one light trap and 4 pheromone traps, Yellow sticky traps) • Explain the advantages of various resource plants (neem, pongamia, vitex, etc.) • Discuss methods & procedures of preparing various biopestcides (neem seed kernel extract, cow dung urine solution, panchagavya) • Explain about record keeping system. • Describe safety measures and first aid • Explain about handling tools and equipment for spraying • Discuss about national and international standards on pesticide residues	• Demonstrate erecting bird perches • Demonstrate spraying chemical as recommended by state agricultural university • Demonstrate the use of biopesticides for pest and disease control • Demonstrate spraying of organic extracts for pest and disease control • Demonstrate preparation of organic extracts from neem seed kernel extract, cow dung and urine spray, panchagavya spray, 5 leaf extract, 10 leaves extract, sour butter milk extract etc. based on pest type • Select appropriate chemical for specific pest recommended by Agricultural university • Demonstrate safety precautions while mixing and spraying of chemicals • Demonstrate safe storage practices for chemicals after use • Demonstrate Integrated pest and Disease management practices such as mechanical, biological & Chemical methods
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook, pest and disease images	
Tools, Equipment and Other Requirements	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask, plant protection chemicals, sprayer, organic extracts, bio pesticides	

Module 7: Water Management in Paddy

Mapped to NOS AGR/N0106 v2.0

Terminal Outcomes:

- Explain critical stages of irrigation requirements in Paddy
- Explain the importance of drainage
- Demonstrate irrigation of paddy field as per the irrigation schedule

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain critical stages of irrigation in Paddy crop • Explain the water requirement for cultivation of paddy • Explain about soil texture, porosity etc. that influences seepage/leaching & poor drainage in the field • Describe the moisture levels required for tillering, panicle initiation and grain filling • Explain various irrigation methods • Explain Do's and Don't's while irrigating field • Describe interaction affects of the soil type, level of the land and water availability on the crop growth and its yield • Explain the timing and method of irrigation appropriate for a given soil type • Explain the terms seepage and leaching and its affects • Explain the significance of drainage in paddy crop • Explain the importance of alternative wetting and drying • Describe about water use efficiency concept • Explain water level requirements at different stages	• Demonstrate measures to avoid moisture stress with regular water supply • Create water drainage as per requirement • Demonstrate irrigation of the field as per the irrigation schedule of crop calender • Demonstrate draining of water in certain stages as per the crop requirement • Show how to maintain water level and depth at different crop stages • Demonstrate alternative wetting and drying of paddy field as per requirement • Demonstrate suitable irrigation method depending on the soil type, variety of paddy & water availability
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Water, spade	

Module 8: Harvesting and Post-Harvest Management in Paddy

Mapped to NOS AGR/N0107 v2.0

Terminal Outcomes:

- Demonstrate harvesting of paddy field
- Demonstrate Threshing and winnowing of paddy grains
- Demonstrate measures for post-harvest management

Duration: 10:00	**Duration: 20:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain Do's and Don'ts during crop harvesting • Explain the harvesting indices of Paddy • Explain the factors to be considered for harvesting such as appropriate crop stage, time, maturity, moisture content, climatic condition etc. • Explain threshing and winnowing, drying of paddy grains • Explain methods to avoid grain loss during harvest • Discuss various methods of storage and their influence on the grain quality • Explain the importance of post-harvest management • Discuss various methods of storage and their influence on rice quality & cost dynamics • Explain chemicals and other cultural methods that may be used to prevent losses from storage pests • Explain various types of subsidy/load/credit available and the process to avail the same • Explain the process to calculate B:C ratio • Explain about available sources of agro advisory services facilities through SMS, mobile, Radio, TV etc. • Explain about e-procrurement platforms for paddy crop • Explain about e-NAM portal	• Identify the harvesting stage based on the harvesting indices • Demonstrate harvesting of paddy crop and handling of the harvested crop • Demonstrate drying the harvested produce to remove moisture • Demonstrate threshing and winnowing of paddy grains • Demonstrate storage of paddy grains in ideal storage conditions • Demonstrate measures to control storage pests • Demonstrate how to manage labour for mechanical harvesting • Identify storage pests of paddy • Set the rodent traps to control grain damage • Demonstrate use of storage bags for paddy grains • Demonstrate spraying of walls with approved chemicals at recommended dosage • Identify market & buyers for the produce • Demonstrate the storage and transportation of the paddy grains • Estimate the cost of production of paddy crop • Estimate the required investment • Plan farm management such as soil testing, selection of crop variety, crop calender, crop rotation, intercrops, schedule for fertilizer, pesticide/chemical application, irrigation schedule, harvesting schedule etc.

• Explain how to analyze the available market information for the benefit of paddy farming • Explain about various factors to be considered for marketing the produce such as right time, place etc. • Discuss about by-products of paddy such as rice straw etc.	• Identify the near market area and keep update on the market prices • Show how to record the investment and expenditures • Calculate B:C ratio • Demonstrate the use of e-procurement platforms • Show how to collect market information from the reliable sources • Demonstrate the use of by-products of paddy for other farm or off-farm usage • Identify various tools and equipment used for harvesting and processing of paddy crop
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook, storage pest images	
Tools, Equipment and Other Requirements	
Paddy grains, Packing bags, harvesting tools and equipment, chemicals for storage pest control, sprayer, PPE kit, mask, soap	

Module 9: Hygiene and cleanliness

Mapped to NOS AGR/N9903 v3.0

Terminal Outcomes:

- Discuss how to adhere to personal hygiene practices.
- Demonstrate ways to ensure cleanliness around the workplace.

Duration: 03:00	**Duration: 03:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the requirements of personal health, hygiene and fitness at work. • Describe common health-related guidelines laid down by the organizations/ Government at the workplace. • Explain the importance of good housekeeping at the workplace. • Explain the importance of informing the designated authority on personal health issues related to injuries and infectious diseases.	• Demonstrate personal hygiene practices to be followed at the workplace. • Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs. • Demonstrate the steps to follow to put on and take off a mask safely. • Show how to sanitize and disinfect one's work area regularly. • Demonstrate adherence to the workplace sanitization norms. • Show how to ensure the cleanliness of the work area.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

Module 10: Safety and emergency procedures

Mapped to NOS AGR/N9903 v3.0

Terminal Outcomes:

- Describe how to adhere to safety guidelines.
- Show how to administer appropriate emergency procedures.

Duration: 07:00	**Duration: 17:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the Personal Protective Equipment (PPE) required at the workplace. • Describe the commonly reported hazards at the workplace. • Describe the hazards caused due to chemicals/ pesticides/ fumigants. • Describe the basic safety checks to be done before the operation of any equipment/ machinery. • Describe the common first aid procedures to be followed in case of emergencies. • Explain the emergency measured in workplace during any farm operation • State measures that can be taken to prevent accidents and damage s at the workplace. • Explain the importance of reporting details of first aid administered, to the reporting officer/ doctor, in accordance with workplace procedures. • State common health and safety guidelines to be followed at the workplace.	• Check various areas of the workplace for leakages, water-logging, pests, fire, etc. • Demonstrate how to safely use the PPE and implements it as applicable to the workplace. • Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc. • Sanitize the tools, equipment and machinery properly. • Demonstrate the safe disposal of waste. • Demonstrate basic safety checks before use of tools and equipment • Demonstrate procedures for dealing with accidents, fires and emergencies. • Demonstrate emergency procedures to the given workplace requirements. • Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements. • Demonstrate the administration of first aid. • Prepare a list of relevant hotline/ emergency numbers.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Personal Protective Equipment, First Aid Kit, Equipment used in Medical Emergencies.	

Module 11: Employability Skills (30 hours)

Mapped to NOS DGT/VSQ/N0101 v1.0

Duration: 30:00

Key Learning Outcomes

Introduction to Employability Skills Duration: 1 Hour

After completing this programme, participants will be able to:

1. Discuss the importance of Employability Skills in meeting the job requirements

Constitutional values - Citizenship Duration: 1 Hour

2. Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.
3. Show how to practice different environmentally sustainable practices

Becoming a Professional in the 21st Century Duration: 1 Hours

4. Discuss 21st century skills.
5. Display positive attitude, self -motivation, problem solving, time management skills and continuous learning mindset in different situations.

Basic English Skills Duration: 2 Hours

6. Use appropriate basic English sentences/phrases while speaking

Communication Skills Duration: 4 Hour

7. Demonstrate how to communicate in a well -mannered way with others.
8. Demonstrate working with others in a team

Diversity & Inclusion Duration: 1 Hour

9. Show how to conduct oneself appropriately with all genders and PwD
10. Discuss the significance of reporting sexual harassment issues in time

Financial and Legal Literacy Duration: 4 Hours

11. Discuss the significance of using financial products and services safely and securely.
12. Explain the importance of managing expenses, income, and savings.
13. Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws

Essential Digital Skills Duration: 3 Hours

14. Show how to operate digital devices and use the associated applications and features, safely and securely
15. Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely

Entrepreneurship Duration: 7 Hours

16. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges

Customer Service Duration: 4 Hours

17. Differentiate between types of customers
18. Explain the significance of identifying customer needs and addressing them

19. Discuss the significance of maintaining hygiene and dressing appropriately

Getting ready for apprenticeship & Jobs Duration: 2 Hours

20. Create a biodata
21. Use various sources to search and apply for jobs
22. Discuss the significance of dressing up neatly and maintaining hygiene for an interview
23. Discuss how to search and register for apprenticeship opportunities

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
10th class		7	Agri Crop Production	0		Paddy Farmer with 7 Years' experience with 10th Pass. Experience certificate issued by BDO/Agriculture Officer/Head of Gram panchayat/Loan disbursing bank or financial institution on official letter Head
12th Class		4	Agri Crop Production	0		Ex-Service-Man including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honourable Discharge/Pension. SSC would consider a relaxation/waiver of sector specific experience on case to case basis.
Diploma	Agriculture	3	Agri Crop Production	0		
Graduate	Graduate in any stream except Agriculture / Horticulture	2	Agri Crop Production	0		For school Program minimum qualification of Trainer should be Graduate. Their Teaching experience will be considered industry experience
Graduate	Agriculture / Horticulture	0.5	Agri Crop Production	0		

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Paddy Farmer**", mapped to QP: "AGR/Q0101, v3.0", Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: "Trainer (Vet and Skills)", mapped to the Qualification Pack: "MEP/Q2601, v2.0". The minimum accepted score as per MEPSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Graduation	B.Sc (Agriculture/ Botany/ Agronomy and related streams)	5	Agriculture crops production / Agronomy and related experience	0		Practical skills and knowledge required in Paddy Cultivation
Post-Graduation	M.Sc (Agriculture/ Botany/ Agronomy and related streams)	2	Agriculture crops production / Agronomy and related experience	0		Practical skills and knowledge required in Paddy Cultivation
PhD	Agriculture/ Botany/ Forestry/ Agronomy and related streams	1	Agriculture crops production / Agronomy and related experience	0		Practical skills and knowledge required in Paddy Cultivation

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Paddy Farmer**", mapped to QP: "AGR/Q0101, v3.0", Minimum accepted score is 80%	Certified for the Job Role: "Assessor (Vet and Skills)", mapped to the Qualification Pack: "MEP/Q2701, v2.0", with a minimum score of 80%.

Assessment Strategy

Assessment System Overview

In Agriculture Sector it is of ultimate importance that individuals dealing with crop production or livestock have the requisite knowledge and competencies to undertake the task. Based on the Assessment Criteria, SSC in association with empaneled AAs, define the test structure for the given job roles to cover the required skills and competencies. Assessment strategy consists of the following:

1. Multiple Choice Questions: To assess basic knowledge (Objective/Subjective)
2. Viva: To assess awareness on processes (Oral and/or written questioning)
3. Practical: To evaluate skills and identify competencies. (Observation)

Assessments for knowledge and awareness on processes may be conducted through 'real-time' internet-based evaluation or by conducting the same 'offline' through TABs. Skills and competencies are to be assessed by conducting 'practical' on the ground through qualified and ToA certified assessors.

An individual must have adequate knowledge and skills to perform a specific task, weightage for different aspects of the assessment is given as follows:

- Multiple Choice Questions: 20%-30%, depending on the specific QP
- Viva: 20%
- Practical: 50% - 60% (Involves demonstrations of applications and presentations of procedures/tasks and other components)
- Assessment will be carried out by certified assessors through empaneled assessment partners. Based on the results of the assessment; ASCI will certify the learners/candidates

Testing Environment

Assessments are conducted on laptops, Mobiles and android tablets via both offline and online mode depending on the internet connectivity at the assessment location.

In remote locations/villages, assessments get delivered through tablets without the requirement of the Internet.

- Multilingual assessments (ASCI is conducting the assessments in 13 + languages pan India)
- Rubric driven assessments in Practical/Viva sections and responses recorded accordingly
- All responses, data, records and feedback are stored digitally on the cloud
- Advanced auto-proctoring features – photographs, time-stamp, geographic-tagging, toggle- screen/copy-paste disabled, etc.
- Android-based monitoring system
- End to end process from allocation of a batch to final result upload, there is no manual intervention

- Assessment will normally be fixed for a day after the end date of the training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- The room where assessment is conducted will be set with proper seating arrangements with enough space to curb copying or other unethical activities
- Question bank of theory and practice will be prepared by ASCI /assessment agency and approved ASCI. Only from approved Question Bank assessment agency will prepare the question paper. Theory testing will include multiple-choice questions, pictorial questions, etc. which will test the trainee on his theoretical knowledge of the subject.
- The theory, practical and viva assessments will be carried out on the same day. In case of a greater number of candidates, the number of assessors and venue facilitation be increased and facilitated

Assessment			
Assessment Type	**Formative or Summative**	**Strategies**	**Examples**
Theory	Summative	MCQ/Written exam	Knowledge of facts related to the job role and functions. Understanding of principles and concepts related to the job role and functions
Practical	Summative	Structured tasks/Demonstration	Practical application /Demonstration /Application tasks
Viva	Summative	Questioning and Probing	Mock interviews on the usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling the job situation

The question paper is pre-loaded in the computer /Tablet and it will be in the language as requested by the training partner.

Assessment Quality Assurance framework

Assessment Framework and Design:

Based on the Assessment Criteria, SSC in association with AAs will define the test structure for the given roles to cover the required skills and competencies. ASCI offer a bouquet of tools for multi-dimensional evaluation of candidates covering language, cognitive skills, behavioural traits and domain knowledge.

Theoretical Knowledge - Item constructs and types are determined by a theoretical understanding of the testing objectives and published research about the item types and constructs that have shown statistical validity towards measuring the construct. Test item types that have been reported to be coachable are not included. Based on these, items are developed by domain experts. They are provided with comprehensive guidelines of the testing objectives of each question and other quality measures.

Type – Questions based on Knowledge Required, Case-based practical scenario questions and automated simulation-based questions.

Practical Skills - The practical assessments are developed taking into consideration two aspects: what practical tasks is the candidate expected to perform on the job and what aspects of the job cannot be judged through theoretical assessments. The candidates shall be asked to perform either an entire task or a set of subtasks depending on the nature of the job role

Type – Standardized rubrics for evaluation against a set of tasks in a demo/practical task

Viva Voce - Those practical tasks which cannot be performed due to time or resource constraints are evaluated through the viva mode. Practical tasks are backed up with Viva for thorough assessment and complete evaluation

Type – Procedural questions, dos and don'ts, subjective questions to check the understanding of practical tasks.

The assessor has to go through an orientation program organized by the Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. The assessor shall be given a NOS and PC level overview of each QP as applicable. The overall structure of assessment and objectivity of the marking scheme will be explained to them. The giving of marks will be driven by an objective framework that will maintain the standardization of the marking scheme.

Type of Evidence and Evidence Gathering Protocol:

During the assessment the evidence collected by AAs and ASCI are:

- GeoTagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidence (photos and videos) to the assessor one day before the assessment. The list is mentioned below:
    - Signed Attendance sheet
    - Assessor feedback sheet
    - Candidate feedback sheet

- Assessment checklist for assessor
- Candidate Aadhar/ID card verification
- Pictures of the classroom, labs to check the availability of adequate equipment's and tools to conduct the training and assessment
- Pictures and videos of Assessment, training feedback and infrastructure.

- Apart from the Assessor, a Technical assistant is popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
- To validate their work on the day of the assessment, regular calls and video calls are done.
- On-boarding and training of the assessor and proctor are done on a timely basis to ensure that the quality of the assessment should be maintained.
- Training covers the understanding of QP, NSQF level, NOS and assessment structure

Methods of Validation

- Morning Check (Pre-Assessment): Backend team of AA calls and confirms assessor/technical SPOC event status. Assessor/Technical SPOC are instructed to reach the centre on time by 9:30 AM / as decided with TC and delay should be highlighted to the Training Partner in advance.
- Video Calls: Random video calls are made to the technical SPOC/assessor so as to keep a check on assessment quality and ensure assessment is carried out in a fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure the event is over by what time and the documentation is done properly or not.
- TP Calling: To keep a check on malpractices, an independent audit team calls the TP on a recorded line to take confirmation if there was any malpractice activity observed in the assessment on part of the AA/SSC team. If calls are not connected, an email is sent to TP SPOC for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on a real-time basis and highlights any issue such as students sitting idle/ trainer helping the candidates during the assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and conduct a surprise audit for the assessment carried out by the ground team.
- Geo Tagging: On the day of the assessment, each technical SPOC is required to login into our internal app which is Geotagged. Any deviation with the centre address needs to be highlighted to the assessment team on a real-time basis.

Method for assessment documentation, archiving, and Access:

- ASCI have a fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks form the basis of the results and encrypted files generated to avoid data manipulation. All responses were captured and stored in the System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can

be generated.

- Maker Checker concept: One person prepares the results and another audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All softcopies of documents are received from the on-ground tech team over email. The same is downloaded by our internal backend team and saved in Repository. The repository consists of scheme-wise folders. These scheme-wise folders have two job role-specific folders. These specific folders have Year wise and Month wise folders where all documents are saved in Batch specific folders. All Hard copies are filed and stored in the storeroom.

Result Review & Recheck Mechanism –

- Time-stamped assessment logs
- Answer/Endorsement sheets for each candidate
- Attendance Sheet
- Feedback Forms: Assessor feedback form, Candidate feedback form, TP feedback form
- The results for each of the candidates shall be stored and available for review (retained for 5 years/ till the conclusion of the project or scheme)

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	The key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on-site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on-site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	The terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
AGR	Agriculture
DFT	Deep Flow Technique
DWC	Deep-Water Culture
EC	Electrical conductivity
NFT	Nutrient Film Technique
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
QP	Qualifications Pack
PVC	Polyvinyl Chloride
PwD	People with Disability
PPE	Personal Protective Equipment