



# Model Curriculum

**QP Name: Rice Transplanter Machine Operator cum Mechanic**

**QP Code: AGR/Q1113**

**Version: 2.0**

**NSQF Level: 4**

**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

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## Training Parameters

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Farm Machinery, Equipment Operation and Maintenance
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/3142.9900
<b>Minimum Educational Qualification and Experience</b>	<p>Minimum Educational Qualification:</p> <p>12th grade pass</p> <p>OR</p> <p>Completed 2nd year of 3-year diploma (after 10th) and pursuing regular diploma</p> <p>OR</p> <p>10th grade pass plus 2-year NTC</p> <p>OR</p> <p>10th grade pass plus 1-year NTC plus 1 year NAC</p> <p>OR</p> <p>8th pass plus 2-year NTC plus 1-Year NAC plus CITS</p> <p>OR</p> <p>10th grade pass and pursuing continuous schooling</p> <p>OR</p> <p>10th Grade Pass with 2-year relevant experience</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level 3.0 with minimum education as 8th Grade pass with 3- year relevant experience</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level 3.5 with 1.5- year relevant experience</p>
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	25/11/2021
<b>Next Review Date</b>	25/11/2024
<b>NSQC Approval Date</b>	25/11/2021
<b>QP Version</b>	2.0

Model Curriculum Creation Date	25/11/2021
Model Curriculum Valid Up to Date	25/11/2024
Model Curriculum Version	2.0
Minimum Duration of the Course	390 Hours
Maximum Duration of the Course	390 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:

- Describe the process of preparing the rice transplanter machine for operation.
- Demonstrate the process of operating the rice transplanter machine.
- Demonstrate the process of carrying out repair and maintenance of a rice transplanter machine.
- Explain the importance of practising inclusion for Persons with Disabilities (PwD) and all genders at work.
- Demonstrate various practices to ensure health and safety at work.

### 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
<b>AGR/N1143 Prepare the rice transplanter machine for operation</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	25:00	35:00	0:00	0:00	60:00
Module1: Introduction to the role of a Rice Transplanter Machine Operator cum Mechanic	05:00	00:00	0:00	0:00	05:00
Module 2: Preparation for operating a rice transplanter machine	20:00	35:00	0:00	0:00	55:00

<b>AGR/N1144 Operate the rice transplanter machine</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>20:00</b>	<b>40:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 3: Process of operating a rice transplanter machine	20:00	40:00	0:00	0:00	60:00
<b>AGR/N1145 Carry out repair and maintenance of rice transplanter machine</b> <b>NOS Version 1.0</b> <b>NSQF Level 4</b>	<b>15:00</b>	<b>45:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 4: Repair and maintenance of a rice transplanter machine	15:00	45:00	0:00	0:00	60:00
<b>AGR/N1146: Raise rice seedlings in the nursery</b>	<b>15:00</b>	<b>15:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 5: Raise rice seedlings in the nursery	15:00	45:00	0:00	0:00	60:00
<b>AGR/N9903 Maintain health and safety at the workplace</b> <b>NOS Version- 3.0</b> <b>NSQF Level- 4</b>	<b>15:00</b>	<b>15:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 6: Hygiene and cleanliness	03:00	03:00	0:00	0:00	06:00
Module 7: Safety and emergency procedures	12:00	12:00	0:00	0:00	24:00
<b>DGT/VSQ/N0102 Employability Skills</b> <b>NOS Version-1.0</b> <b>NSQF Level-4</b>	<b>60:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 8: Employability Skills	60:00	00:00	0:00	0:00	60:00
Module 9: OJT	00:00	00:00	90:00	00:00	90:00
<b>Total Duration</b>	<b>150:00</b>	<b>150:00</b>	<b>90:00</b>	<b>0:00</b>	<b>390:00</b>

## Module Details

### Module 1: Introduction to the role of a Rice Transplanter Machine Operator cum Mechanic

*Bridge Module, Mapped to AGR/N1143 v1.0*

#### Terminal Outcomes:

- Discuss the job role of a Rice Transplanter Machine Operator cum Mechanic.

<b>Duration: 05:00</b>	<b>Duration: 0:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>Describe the size and scope of the agriculture industry and its sub-sectors.</li> <li>Discuss the role and responsibilities of a Rice Transplanter Machine Operator cum Mechanic.</li> <li>Identify various employment opportunities for a Rice Transplanter Machine Operator cum Mechanic.</li> </ul>	
<b>Classroom Aids</b>	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 2: Preparation for operating a rice transplanter machine

*Mapped to AGR/N1143 v1.0*

### Terminal Outcomes:

- Demonstrate the process of performing daily checks on a rice transplanter machine.
- Demonstrate the process of making various adjustments to a rice transplanter machine.

Duration: 20:00	Duration: 35:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• State the recommended gap between beaks and apron/ beaks and R-Forks/ centre and side floats in the rice transplanter machine.</li> <li>• Explain the importance of ensuring free movement and engagement/ disengagement of the gear lever/ clutch lever/ hydraulic machinery.</li> <li>• State the prescribed levels for the engine oil, transmission oil and fuel to be maintained in the rice transplanter machine.</li> <li>• Explain the importance of applying grease on the machine surface and greasing points.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of carrying out daily checks on the rice transplanter machine.</li> <li>• Show how to check the gear lever/ clutch lever/ planting lever and hydraulic machinery for correct engagement/ disengagement.</li> <li>• Demonstrate the process of testing the headlight for correct functioning.</li> <li>• Show how to examine the tyre and wheels for any wear and tear or damage.</li> <li>• Show how to clean the air filters as per the SOP.</li> <li>• Show how to adjust the centre and side floats according to the field conditions.</li> <li>• Demonstrate set the marker in the correct position as per the operator's manual.</li> <li>• Show how to modify various operational settings such as lateral feed amount, planting speed, spacing and depth, etc.</li> <li>• Prepare a sample record of pre-start checks.</li> </ul>
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Rice Transplanter Machine, Screwdriver, Nuts/Bolts, Lever, Forks, etc.	

## Module 3: Process of operating a rice transplanter machine

Mapped to ARG/N1144 v1.0

### Terminal Outcomes:

- Describe the process of checking the condition of paddy farm and seedlings.
- Demonstrate the process of operating the rice transplanter machine.
- Explain various safety measures to be taken while operating a rice transplanter machine.

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• List various parameters to be assessed before operating a rice transplanter machine.</li> <li>• Explain the use of gear lever/ clutch lever/ planting lever/ hydraulic system to achieve machine efficiency.</li> <li>• Explain various measures to be taken while operating the rice transplanter machine.</li> <li>• Describe the process of shutting down the rice transplanter machine before making any adjustments or carrying out repair/ maintenance during operation.</li> <li>• State the appropriate speed for operating the rice transplanter machine.</li> <li>• Explain the importance of using the rice transplanter machine according to its recommended capacity.</li> <li>• State common problems encountered during the operation of a rice transplanter and their troubleshooting.</li> </ul>	<ul style="list-style-type: none"> <li>• Show how to assess the wetness of the soil, quality of puddling and rice seedlings before operating the rice transplanter machine.</li> <li>• Demonstrate the process of operating the rice transplanter machine at a speed suitable to the seedlings and field conditions.</li> <li>• Demonstrate how to transplant the rice seedling in a pattern to achieve machine efficiency.</li> <li>• Show how to use the gear lever/ clutch lever/ planting lever/ hydraulic system as per the operator's manual.</li> <li>• Demonstrate the process of performing troubleshooting for basic problems encountered during transplanting.</li> <li>• Demonstrate how to use the Personal Protective Equipment (PPE) appropriately during the machine operation.</li> <li>• Prepare a sample record of rice transplanter operations.</li> </ul>
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Rice Transplanter Machine and Implements, Insecticides, Nose Masks, First-Aid Kit	



## Module 4: Repair and maintenance of a rice transplanter machine

*Mapped to AGR/N1145 v1.0*

### Terminal Outcomes:

- Describe the process of examining the various rice transplanter machine parts.
- Demonstrate the process of carrying out repair and maintenance of various rice planter machine parts.
- Demonstrate various practices for effective resource optimisation.
- Describe the waste management process and demonstrate relevant practices for effective waste management.

Duration: 15:00	Duration: 45:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Describe the procedure of detaching and cleaning various rice transplanter machine parts.</li> <li>• List various approved cleaning methods and chemicals to be used on a rice transplanter machine.</li> <li>• State the recommended engine oil, transmission oil, chain-case oil, drive case oil, planter arm oil levels to be maintained in the rice transplanter.</li> <li>• Explain the repair and maintenance needs of various rice transplanter machine parts.</li> <li>• Describe the process of applying grease/ lubricant to use on rice transplanter machine surface, nuts and bolts.</li> <li>• Describe the process of replacing the air cleaner/ clutch lever wire/ gear control wire/ v-belt/ chains/ beaks/ R-forks/ shooters and side floats.</li> <li>• Explain the benefits of resource optimisation.</li> <li>• Explain the criteria for segregating waste into appropriate categories.</li> </ul>	<ul style="list-style-type: none"> <li>• Show how to detach the removable machine parts as per the manufacturer's instructions.</li> <li>• Show how to check the beaks/ R-forks/ shooters/ planter case/ centre and side floats/ feeder belt/ wheels/ hydraulic cylinder/ sliding tray for wear and tear or damage.</li> <li>• Demonstrate how to examine the chain-case and sub-assembly/ clutch lever wire/ hydraulic control wire/ accelerator wire/ gear control wire for bends.</li> <li>• Show how to examine the engine, hydraulic hoses and pump for leakage.</li> <li>• Show how to remove dust, waste straw, crop stems, and mud from the machine and its parts using the manufacturer-approved cleaning methods and chemicals.</li> <li>• Demonstrate the process of setting the gear lever/ clutch lever/ planting lever/ hydraulic machinery/ beaks/ R-forks/ shooters in the correct position.</li> <li>• Demonstrate how to adjust the tension of v-belt, 128-link chain and other chains to the prescribed level.</li> <li>• Show how to refill the engine oil, transmission oil, chain-case oil, drive case oil, planter arm oil as per the</li> </ul>

	<p>requirement.</p> <ul style="list-style-type: none"> <li>• Demonstrate the process of replacing the air cleaner/ clutch lever wire/ accelerator wires/ v-belt/ chains/ beaks/ R-forks/ shooters/ centre and side floats.</li> <li>• Prepare a sample record of repair and maintenance activities.</li> <li>• Demonstrate various practices to optimise the usage of various resources such as water and electricity.</li> <li>• Demonstrate the process of recycling and disposing different types of waste appropriately.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations)	
<b>Tools, Equipment and Other Requirements</b>	
Rice Transplanter Machine and Implements, Insecticides, Nose Masks, First-Aid Kit	

## Module 6: 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
<ul style="list-style-type: none"> <li>• Explain the requirements of personal health, hygiene and fitness at work.</li> <li>• Describe common health-related guidelines laid down by the organizations/ Government at the workplace</li> <li>• Explain the importance of good housekeeping at the workplace.</li> <li>• Explain the importance of informing the designated authority on personal health issues related to injuries and infectious diseases.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate personal hygiene practices to be followed at the workplace.</li> <li>• Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs.</li> <li>• Demonstrate the steps to follow to put on and take off a mask safely.</li> <li>• Show how to sanitize and disinfect one's work area regularly.</li> <li>• Demonstrate adherence to the workplace sanitization norms.</li> <li>• Show how to ensure the cleanliness of the work area.</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

## Module 7: 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: 12:00	Duration: 12:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• List the Personal Protective Equipment (PPE) required at the workplace.</li> <li>• Describe the commonly reported hazards at the workplace.</li> <li>• Describe the hazards caused due to chemicals/pesticides/fumigants.</li> <li>• Describe the basic safety checks to be done before the operation of any equipment/machinery.</li> <li>• Describe the common first aid procedures to be followed in case of emergencies.</li> <li>• State measures that can be taken to prevent accidents and damage s at the workplace.</li> <li>• Explain the importance of reporting details of first aid administered, to the reporting officer/doctor, in accordance with workplace procedures</li> <li>• State common health and safety guidelines to be followed at the workplace.</li> </ul>	<ul style="list-style-type: none"> <li>• Check various areas of the workplace for leakages, water-logging, pests, fire, etc.</li> <li>• Demonstrate how to safely use the PPE and implements as applicable to the workplace.</li> <li>• Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc.</li> <li>• Sanitize the tools, equipment and machinery properly.</li> <li>• Demonstrate the safe disposal of waste.</li> <li>• Demonstrate procedures for dealing with accidents, fires and emergencies.</li> <li>• Demonstrate emergency procedures to the given workplace requirements.</li> <li>• Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements.</li> <li>• Demonstrate the administration of first aid.</li> <li>• Prepare a list of relevant hotline/emergency numbers</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, Power Point Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, First Aid Kit, Equipment used in Medical Emergencies.	

## Module 8: Employability Skills (60 hours)

*Mapped to NOS DGT/VSQ/N0102 v1.0*

**Duration: 60:00**

### Key Learning Outcomes

#### Introduction to Employability Skills Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

#### Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

#### Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

#### Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

#### Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

#### Communication Skills Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

#### Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

#### Financial and Legal Literacy Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

#### **Essential Digital Skills Duration: 10 Hours**

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

#### **Entrepreneurship Duration: 7 Hours**

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

#### **Customer Service Duration: 5 Hours**

30. Describe the significance of analysing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

#### **Getting Ready for apprenticeship & Jobs Duration: 8 Hours**

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

## Module 8: On-the-Job Training (OJT)

### Mapped to AGR/Q1113 (v2.0)

<b>OJT mandatory: 90:00</b>
<b>Terminal Outcome</b>
<ul style="list-style-type: none"> <li>• Explain the procedure for conducting daily checks on the rice transplanter machine</li> <li>• Explain the various measures to be taken while operating the rice transplanter machine.</li> <li>• Operate the paddy transplanter machine at a speed suitable to the transplanting and field conditions.</li> <li>• Repair and maintain various rice transplanter machine parts. Prepare different types of nursery beds for growing paddy seedlings.</li> <li>• Sow the recommended quantity of germinated paddy seeds in the nursery beds.</li> <li>• Harvest the rice seedlings using appropriate tools and equipment.</li> <li>• Set up the computer and relevant accessories and peripherals for use according to the manufacturer's instructions.</li> <li>• Carry out commercial activities such as buying and selling of goods using appropriate e-commerce platforms.</li> <li>• Prepare a sample training program for the apprentice.</li> <li>• Regularly clean and disinfect your work area.</li> <li>• Use emergency equipment in accordance with manufacturers specifications and workplace requirements.</li> </ul>

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
12th Class	Science	5	Agriculture farm Machinery	0		Ex-Service-Man including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honourable Discharge/Pension. SC would consider a relaxation/waiver of sector-specific experience on a case-to-case basis. For nominations with Class 12 (Science) , additional Certificate in course on Farm Mechanization from recognized institute required.
Diploma	Mechanical / Agriculture engineering / Tractor Operator	3	Agriculture Farm Machinery	0		
ITI	Mechanical	3	Agriculture Farm Machinery	0		
Graduate	Agriculture	1	Agriculture Farm Machinery	0		For the school Program minimum qualification of the Trainer should be Graduate (Agriculture / Physics) with 2 years teaching experience (will be considered industry experience)
Certificate	CITS / NCIC Pass-Tractor Mechanic	1	Agriculture farm Machinery	0		
B. Tech	Mechanical / Agriculture engineering.	0		0		

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Rice Transplanter Machine Operator cum Mechanic</b> ”, mapped to QP: “AGR/Q1113, v2.0”, 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. Tech (Agriculture / Agriculture Engineering / Mechanical Engineering / Farm Machinery)	5	In Agriculture machine operations & field preparation	0		Practical skills and knowledge required in Agriculture Machine operations
Graduation	B.Sc (Agriculture / Agriculture Engineering and related streams)	5	In Agriculture machine operations & field preparation	0		Practical skills and knowledge required in Agriculture Machine operations
Post-graduation	M. Tech (Agriculture / Agriculture Engineering / Mechanical Engineering / Farm Machinery)	2	In Agriculture machine operations & field preparation	0		Practical skills and knowledge required in Agriculture Machine operations
Post-graduation	M.Sc (Agriculture / Agriculture Engineering and related streams)	2	In Agriculture machine operations & field preparation	0		Practical skills and knowledge required in Agriculture Machine operations
PhD	PhD (Agriculture / Agriculture Engineering/Farm engineering and related streams)	1	In Agriculture machine operations & field preparation	0		Practical skills and knowledge required in Agriculture Machine operations

Assessor Certification	
Domain Certification	Platform Certification
“Rice Transplanter Machine Operator cum Mechanic”, “AGR/Q1113, v2.0”, 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 empanelled 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 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 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 standardisation of the marking scheme.

### Type of Evidence and Evidence Gathering Protocol:

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

- Geo Tagging 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 tool 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 is 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 candidate shall be stored and available for review (retained for 5 years/ till the conclusion of the project or scheme)

# References

## Glossary

Term	Description
<b>Declarative Knowledge</b>	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.
<b>Key Learning Outcome</b>	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).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
<b>Procedural Knowledge</b>	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.
<b>Training Outcome</b>	Training outcome is a statement of what a learner will know, understand and be able to do <b>upon the completion of the training</b> .
<b>Terminal Outcome</b>	Terminal outcome is a statement of what a learner will know, understand and be able to do <b>upon the completion of a module</b> . A set of terminal outcomes help to achieve the training outcome.

## Acronyms and Abbreviations

Term	Description
AGR	Agriculture
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
QP	Qualifications Pack
PwD	People with Disability
PPE	Personal Protective Equipment