Model Curriculum

QP Name: Forest Nursery Raiser

QP Code: AGR/Q6103

Version: 3.0

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

Sector	Agriculture
Sub-Sector	Forestry, Environment and Renewable Energy Management
Occupation	Agro-Forestry Management
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/6113.0200
Minimum Educational Qualification and Experience	Min. Educational Qualification: 10th Class Pass with 2 years of relevant experience OR 10th Class Pass + ITI (1 year after Class 10th) with 1 year of relevant experience OR 10th Class Pass + ITI (2 years after Class 10th) OR 10th Class Pass and pursuing continuous regular schooling OR 8th Class Pass + ITI (2years) with 2 Years of relevant experience OR Previous relevant Qualification of NSQF Level 3 with 2 years of relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	16 Years
Last Reviewed On	17/11/2022
Next Review Date	31/03/2025
NSQC Approval Date	31/03/2022
QP Version	3.0
Model Curriculum Creation Date	31/03/2022
Model Curriculum Valid Up to Date	31/03/2025
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 for setting up the forest nursery.

- Demonstrate the process of preparing the nursery bed and infrastructure.

- Demonstrate the process of propagating plants in the forest nursery.

- Demonstrate the process of maintaining plants in the forest nursery and transplanting them.

- Demonstrate the process of performing marketing and inventory management.

- Describe the process of undertaking employability and entrepreneurial practices.

- Demonstrate various practices to maintain personal hygiene, cleanliness, and safety at the 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
AGR/N6112 Prepare to set up the forest nursery **NOS Version- 2.0** **NSQF Level- 4**	**20:00**	**40:00**	**0:00**	**0:00**	**60:00**
Module 1: Introduction to the role of a Forest Nursery Raiser	5:00	0:00	0:00	0:00	05:00
Module 2: Preparation for setting up the forest nursery	15:00	40:00	0:00	0:00	55:00
AGR/N6113 Prepare the nursery bed and infrastructure **NOS Version- 2.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 3: Process of preparing the nursery bed and infrastructure	10:00	20:00	0:00	0:00	30:00
AGR/N6114 Propagate plants in the forest nursery **NOS Version- 2.0**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**

NSQF Level- 4					
Module 4: Propagation of plants in the forest nursery	10:00	20:00	0:00	0:00	30:00
AGR/N6115: Maintain plants in the forest nursery and transplant them **NOS Version-2.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 5: Process of maintaining the plants in the forest nursery and transplanting them	10:00	20:00	0:00	0:00	30:00
AGR/N6116 Perform marketing and inventory management **NOS Version-3.0** **NSQF Level- 4**	**20:00**	**10:00**	**0:00**	**0:00**	**30:00**
Module 6: Marketing and inventory management	20:00	10:00	0:00	0:00	30:00
AGR/N9903 Maintain health and safety at the workplace **NOS Version-4.0** **NSQF Level-4**	**20:00**	**10:00**	**0:00**	**0:00**	**30:00**
Module 7: Hygiene and cleanliness	03:00	03:00	0:00	0:00	06:00
Module 8: Safety and emergency procedures	17:00	07:00	0:00	0:00	24:00
DGT/VSQ/N0102 Employability Skills **NOS Version-1.0** **NSQF Level-4**	**60:00**	**00:00**	**0:00**	**0:00**	**60:00**
Module 9: Employability Skills	60:00	00:00	0:00	0:00	60:00
Module 10: On-The-Job Training	**00:00**	**00:00**	**120:00**	**00:00**	**120:00**
Total Duration	**150:00**	**120:00**	**120:00**	**0:00**	**390:00**

Module Details

Module 1: Introduction to the role of a Forest Nursery Raiser

Bridge Module, Mapped to AGR/N6112 v2.0

Terminal Outcomes:

- Discuss the job role of a Forest Nursery Raiser.

Duration: 05:00	Duration: 0:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Describe the size and scope of the agriculture industry and its sub-sectors. - Discuss the role and responsibilities of a Forest Nursery Raiser. - Identify various employment opportunities for a Forest Nursery Raiser.	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

Module 2: Preparation for setting up the forest nursery
Mapped to AGR/N6112 v2.0

Terminal Outcomes:

- Describe the process of selecting an appropriate site for setting up the forest nursery.

- Demonstrate the process of preparing the layout.

- Describe the process of selecting plant varieties and nursery beds.

- Describe the process of arranging the necessary resources.

Duration: 15:00	Duration: 40:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- State the favourable conditions, minimum area and inputs required for setting up a forest nursery. - Explain the approved sustainable agronomics for agroforestry species. - List different types of forest nurseries. - State various necessary details to obtain while purchasing the seeds and propagules. - State the laws applicable to establishing a forest nursery. - Explain various techniques to detect the presence of pathogens in the soil. - State the appropriate varieties of plants raised for different purposes in forest nurseries. - List different types of nursery beds. - Explain the benefits of polyculture and multitier planting systems. - Explain basic accounting and inventory management.	- Demonstrate the use of various approved techniques to detect the presence of pathogens in the soil. - Prepare a sample layout for the nursery considering setting up of mother block, water tank, seedling raising area, store-room, etc. - Show how to calculate the spacing between plants and rows for their optimum growth.
Classroom Aids	
Training Kit (Trainer guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	

Plastic Sheet, Spades, Barbed Wire, Mesh Wire, Wooden or R.C.C. Poles, "U" Nails, Hammer, Wire Pooler, Strainer or Cable Puller or Iron Rod Hook, Coaster, Enamel Paints, Plain Nails, Prismatic Compass, Plain Table with Accessories Abneys' level, Measuring Tape, Ranging rod, Arrows

Module 3: Process of preparing the nursery bed and infrastructure
Mapped to ARG/N6113 v2.0

Terminal Outcomes:

- Demonstrate the process of preparing the nursery bed.

- Demonstrate the process of constructing the nursery infrastructure.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- State the appropriate level of soil moisture for ploughing and hoeing. - List different activities required to perform as part of nursery bed preparation. - Describe the process of sterilisation of soil through solarisation. - Explain the importance of conducting the soil test and applying necessary treatments to improve its fertility. - Explain the importance of installing a micro-irrigation/ fertigation system. - Explain the importance and ways of draining out water from a forest nursery.	- Demonstrate how to remove all stumps, roots, debris, weeds and waste material from the land. - Demonstrate the process of carrying out ploughing and hoeing at the land. - Show how to puddle the land for the recommended duration of time. - Demonstrate how to level the land and break the soil lumps using a rake. - Demonstrate the process of sterilising the soil by applying the approved chemicals to prevent contamination by pests and diseases. - Demonstrate the process of applying the laboratory-recommended treatment on the soil such as fertilizers/ peat/ lime/manure to improve its fertility. - Show how to prepare sunken/ level/ raised nursery bed with rows and holes of the recommended specifications. - Demonstrate the process of construct the shade net house/ greenhouse/ playhouse, irrigation channels, compost area, store-room and other nursery

	infrastructure as per the layout.
	● Demonstrate the process of installing the appropriate micro-irrigation/ fertigation system.
	● Show how to construct a water harvesting structure for storage and conservation.
	● Demonstrate how to erect fences to protect the nursery from external threats such as animals.

Classroom Aids

Training Kit (Trainer guide, Presentations). Whiteboard, Marker, Projector, Laptop

Tools, Equipment and Other Requirements

Spades, (Small & Large), Pickaxes, Wooden Hammer, Ropes, Cotton Or Steel Tape, Wooden Pegs, Shovels, Khurpa, Sickle, Axes, Wooden Planks, Bricks, Stones, Bamboo's Splinters, Crowbar, Wheelbarrows, Boxes, Plastic Buckets, Watering Cans, Wire Cutters, Digging Forks, Hammer, Nails, Hoes, Hand Pruning Knives, Budding Knives, Respiratory Masks, Sprayers, Saws, Scissors, Secateurs, Budding And Grafting Knives, Budding And Grafting Tape, Germination Trays, Iron Pan, Spade, Forks, Trolleys, Tractor, Disc Plough, Pot Filling Machine, Grafting Machine

Module 4: Propagation of plants in the forest nursery
Mapped to AGR/N6114 v2.0

Terminal Outcomes:

- Demonstrate the process of propagating plants through seeds.

- Demonstrate the process of propagating plants through other propagation methods.

- Demonstrate various practices for effective resource optimisation.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- List different ways of identifying damaged/ diseased seeds. - Explain different methods of treating seeds. - State the recommended ratio of various soil nutrients to be maintained in the soil. - Describe the process of raising seedlings in a nursery setting. - State the recommended depth for sowing of seeds in the nursery bed/ poly bags/ containers. - Explain various cultural practices and propagation methods such as cutting, layering, division and budding. - State the appropriate planting time for various types of plants. - Explain the benefits of resource optimisation.	- Demonstrate how to sort out the damaged/ diseased seeds. - Demonstrate the process of treating the seeds using the recommended methods such as water/ chemical/ dry heat treatment. - Show how to prepare potting soil maintaining the recommended ratio of various soil nutrients. - Show how to prepare the poly bags/ containers for sowing the seeds by filling them with potting soil. - Demonstrate the process of sowing seeds in the nursery bed/ poly bags/ containers at the recommended depth. - Demonstrate the process of applying the recommended quantity of water and manure/ fertilizer on the sown seeds. - Demonstrate the process of propagating the plants using other methods. - Demonstrate various practices to optimise the usage of various resources such as water and electricity.
Classroom Aids	
Training Kit (Trainer guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	

G.I. Net For Sieving Sand And Soil, Wooden Seed Box Or Metal Or Plastic Seed Tray, Thick Poly Bags, Canes, Container Or Glass Jar, Small Metal Sieves, Knife, Wire, Pruning Scissor, Secateurs, Seed Trays, Plant Labels, Wheelbarrow, Cutting Pliers, Sharp Knife, Bill Hook

Module 5: Process of maintaining the plants in the forest nursery and transplanting them

Mapped to NOS AGR/N6115 v2.0

Terminal Outcomes:

- Demonstrate the process of performing nutrient and disease management.

- Demonstrate the process of controlling weed growth.

- Demonstrate the process of transplanting the plants.

- Demonstrate various waste management practices.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Explain the importance of checking nursery plants regularly for healthy growth. - State the water requirements of different types of nursery plants. - Explain the importance of using green waste/ dried leaves for composting/ organic manure. - State the recommended amount of fertilizers/ manure/ compost to apply to nursery plants. - Explain the importance of ensuring adequate sunlight and shading for nursery plants. - List various signs of insect/ pest/ fungus/ disease infestation in a forest nursery. - Explain the importance and ways of maintaining a clean environment along with good air circulation in the nursery to prevent the growth of pathogens. - List different types of weed found in a forest nursery and their remedies such as the application of mulch. - List the maturity indicators for	- Demonstrate the process of applying organic manure/ compost/ bio-fertilizers and other growth promoters in the recommended quantity. - Demonstrate the process of applying the selected insecticide/ pesticide/ fungicide as per the manufacturer's instructions. - Show how to remove the dead/ diseased plants as per the Standard Operating Procedure (SOP). - Demonstrate the use of relevant Personal Protective Equipment (PPE) while applying the treatment to plants. - Prepare a sample record of insecticides/ pesticides/ fungicides used in the forest nursery. - Show how to remove weed while protecting the nursery plants. - Demonstrate the process of applying mulch on the nursery bed to prevent the growth of weeds. - Demonstrate the process of disposing the eliminated weed. - Demonstrate the use of the

different varieties of nursery plants. ● Explain the criteria for segregating waste into appropriate categories.	recommended tools such as scissors, pruning shears, knife to prune the plants. ● Demonstrate the use of the root trainer for supporting and training the roots. ● Show how to extract the mature plants using the appropriate tools and equipment. ● Demonstrate the process of transplanting the plants at the plantation site under the recommended conditions. ● Prepare a sample record of plants raised and transplanted. ● Demonstrate the process of recycling and disposing different types of waste appropriately.

Classroom Aids:

Training Kit (Trainer guide, Presentations). Whiteboard, Marker, Projector, Laptop

Tools, Equipment and Other Requirements

Pruner, Sprayer, Spade, Wheel Barrow, Seed Trays, Plant Labels, Water Pumps And Equipment, Water Cans, Polythene Pipe, Sprinkler, Tube Well, Atomizer For Irrigating Minute/Small Seeded Nursery, Hedge Cutters, Shears, Chemicals

Module 6: Marketing and inventory management

Mapped to NOS AGR/N6116 v3.0

Terminal Outcomes:

- Describe the process of complying with the applicable regulations.

- Describe the process of setting the price and connecting with the buyer.

- Describe the process of accepting and processing the order.

- Describe the process of managing the inventory.

- Discuss ways to promote diversity and inclusion at the workplace.

Duration: 20:00	Duration: 10:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- State the applicable government schemes/ assistance offered in the marketing of forest nursery produce. - State the relevant regulations governing the collection and trading of agroforestry produce. - Describe the process of identifying market demand for plant species and subsequently deciding the quantity and time of supplying. - List various labelling requirements for forest nursery produce. - Explain how to set a price for the forest nursery to produce in compliance with the guidelines of the market control body. - State various costs to account for while setting the price of forest nursery to produce. - Explain how to identify the demand and market rate for nursery plants. - State different ways of connecting with potential buyers. - Explain how to assess a buyer's need. - Describe the process of accepting	- Demonstrate how to prepare the plants for dispatch as per the order. - Demonstrate the process of applying a label with the relevant information such as the plant's name and variety, date and time of harvesting, geographical information, etc. - Demonstrate the use of electronic payment methods for accepting payments such as Bharat Interface for Money (BHIM) Unified Payments Interface (UPI), payment apps, e-wallet etc. - Prepare a sample record of sale and payment. - Show how to calculate the benefit-cost (B:C) ratio. - Prepare a sample record of inputs used in propagating plants. - Demonstrate how to maintain the inventory data in the physical registers or the relevant computer system. - Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability.

and fulfilling orders. ● State relevant laws applicable to the sale and purchase of nursery plants. ● Explain the procedure to report inappropriate behaviour e.g., harassment.	

Classroom Aids:

Training Kit (Trainer guide, Presentations). Whiteboard, Marker, Projector, Laptop

Tools, Equipment and Other Requirements

Pen, Paper, Plant Labels, Tray

Module 7: Hygiene and cleanliness

Mapped to NOS AGR/N9903 v4.0

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 8: Safety and emergency procedures

Mapped to NOS AGR/N9903 v4.0

Terminal Outcomes:

- Describe how to adhere to safety guidelines.

- Show how to administer appropriate emergency procedures.

Duration: 17:00	Duration: 07:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- List the 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. - 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 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 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 9: 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 10: On-the-Job Training
Mapped to AGR/Q6103, v3.0

Mandatory Duration: 120:00
Location: On-Site

Terminal Outcomes

1. Explain various cultural practices and propagation methods such as cutting, layering, division and budding.

2. Use various approved techniques to detect the presence of pathogens in the soil.

3. Carry out ploughing and hoeing at the land.

4. Level the land and break the soil lumps using a rake.

5. Install the appropriate micro-irrigation/ fertigation system.

6. Propagate the plants using various methods.

7. Apply the selected insecticide/ pesticide/ fungicide as per the manufacturer's instructions.

8. Treat the seeds using the recommended methods such as water/ chemical/ dry heat treatment.

9. Apply mulch on the nursery bed to prevent the growth of weeds.

10. Use the recommended tools such as scissors, pruning shears, knife to prune the plants.

11. Extract the mature plants using the appropriate tools and equipment.

12. Recycle and dispose different types of waste appropriately.

13. Use electronic payment methods for accepting payments such as Bharat Interface for Money (BHIM) Unified Payments Interface (UPI), payment apps, e-wallet etc.

14. Maintain the inventory data in the physical registers or the relevant computer system.

15. Carry out commercial activities such as buying and selling commodities using the appropriate e-commerce platforms.

16. Use emergency equipment in accordance with manufacturers' specifications and workplace requirements.

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	*Specialization*	*Years*	*Specialization*	
10th Class	Class 10th	5	Nursery Management	0		Forest Nursery Raiser with 5 Years of experience after 10th pass. Experience certificate issued by BDO/ Agriculture Officer/ Government Organizations/ NGO/ Gram Panchayat/ Corporates on official letterhead
12th Class	Class 12th	4	Nursery Management	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	Diploma in Agriculture	3	Nursery Management	0		
Graduate	Graduate	2	Nursery Management	0		For the School Program minimum qualification of the Trainer should be Graduate. Their Teaching experience will be considered industry experience
Graduate	Graduate (Agriculture/ Horticulture/ Botany/ Forestry)	0.5	Nursery Management			

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Forest Nursery Raiser**", mapped to QP: "AGR/Q6103, 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/ Forestry/ Horticulture and related streams)	5	Forestry/ Horticulture and related Experience	0		Practical skills and knowledge required in Forest Nursery Raising
Post-Graduation	M.Sc. (Botany/ Forestry/ Horticulture/Agroforestry and related streams)	2	Forestry/ Horticulture and related Experience	0		Practical skills and knowledge required in Forest Nursery Raising
PhD	PhD (Botany/ Forestry/ Horticulture/Agroforestry and related streams)	1	Forestry/ Horticulture and related Experience	0		Practical skills and knowledge required in Forest Nursery Raising

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Forest Nursery Raiser**", mapped to QP: "AGR/Q6103, 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. <u>Multiple Choice Questions</u>: To assess basic knowledge (Objective/Subjective)
2. <u>Viva:</u> To assess awareness on processes (Oral and/or written questioning)
3. <u>Practical:</u> 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 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 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

- o Candidate feedback sheet
- o Assessment checklist for assessor
- o Candidate Aadhar/ID card verification
- o Pictures of the classroom, labs to check the availability of adequate equipment's and tools to conduct the training and assessment
- o 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
BHIM	Bharat Interface for Money
B:C Ratio	Benefit-Cost Ratio
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
PwD	People with Disability
PPE	Personal Protective Equipment
QP	Qualifications Pack
SOP	Standard Operating Procedure
UPI	Unified Payments Interface