Model Curriculum

QP Name: Timber Grower

QP Code: AGR/Q6104

Version: 2.0

NSQF Level: 4

Model Curriculum Version: 1.0

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-2015/6210
Minimum Educational Qualification and Experience	12th grade pass OR 10th grade pass with 2 years of relevant experience OR 10th grade pass and pursuing continuous schooling OR Previous relevant qualification of NSQF Level 3.0 with minimum education as 8th grade pass with 3 years of relevant experience OR Previous relevant qualification of NSQF Level 3.5 with 1.5 years of relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	29/03/2023
Next Review Date	29/03/2026
NSQC Approval Date	29/03/2023
QP Version	2.0
Model Curriculum Creation Date	29/03/2023
Model Curriculum Valid Up to Date	29/03/2026
Model Curriculum Version	1.0
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:

- Explain the process of preparing for timber cultivation and raising saplings.
- Elucidate ways to coordinate with the relevant authorities and SMEs for timber cultivation.
- Demonstrate the process of carrying out planting/sowing of timber plants and seeds.
- Elucidate ways to maintain the timber trees and plantation.
- Demonstrate the process of harvesting, storing and marketing the timber.
- 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
Bridge Module	**05:00**	**00:00**	**0:00**	**00:00**	**05:00**
Module 1: Introduction to the role of a Timber Grower	05:00	00:00	0:00	00:00	05:00
AGR/N6121: Prepare for timber cultivation and raise saplings **NOS Version- 2.0** **NSQF Level- 4**	**20:00**	**35:00**	**0:00**	**00:00**	**55:00**
Module 2: Process of preparing for timber cultivation and raise saplings	20:00	35:00	0:00	00:00	55:00
AGR/N6119: Coordinate with the relevant authorities and SMEs for timber cultivation **NOS Version- 2.0** **NSQF Level- 4**	**05:00**	**25:00**	**0:00**	**00:00**	**30:00**
Module 3: coordinating with the relevant authorities and SMEs for timber cultivation	05:00	25:00	0:00	00:00	30:00
AGR/N6117: Carry out planting/sowing of timber plants and seeds **NOS Version- 2.0** **NSQF Level- 4**	**25:00**	**35:00**	**0:00**	**00:00**	**60:00**

Module 4: Process of carrying out planting/ sowing of timber plants and seeds	25:00	35:00	0:00	00:00	60:00
AGR/N6118: Maintain the timber trees and plantation **NOS Version- 2.0** **NSQF Level- 4**	**55:00**	**35:00**	**0:00**	**00:00**	**90:00**
Module 5: Process of maintaining the timber trees and plantation	55:00	35:00	0:00	00:00	90:00
AGR/N6120: Harvest, store and market the timber **NOS Version- 2.0** **NSQF Level- 4**	**05:00**	**25:00**	**0:00**	**00:00**	**30:00**
Module 6: Process of harvesting, Storing and marketing the timber	05:00	25:00	0:00	00:00	30:00
AGR/N9903 Maintain health and safety at the workplace **NOS Version- 3.0** **NSQF Level- 4**	**05:00**	**25:00**	**0:00**	**00:00**	**30:00**
Module 7: Hygiene and cleanliness	02:00	10:00	0:00	00:00	12:00
Module 8: Safety and emergency procedures	03:00	15:00	0:00	00:00	18:00
DGT/VSQ/N0102: Employability Skills (60 Hours) **NOS Version- 1.0** **NSQF Level- 4**	**60:00**	**00:00**	**0:00**	**00:00**	**60:00**
Module 9: Employability Skills	60:00	00:00	0:00	00:00	60:00
Total Duration	**180:00**	**180:00**	**0:00**	**00:00**	**360:00**
OJT: 30 Hours					

Module Details

Module 1: Introduction to the role of a Timber Grower
Bridge Module

Terminal Outcomes:

- Discuss the job role of a Timber Grower.

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 Timber Grower. - Identify various employment opportunities for a Timber Grower.	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

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Module 2: Process of preparing for timber cultivation and raise saplings
Mapped to AGR/N6121 v2.0

Terminal Outcomes:

- Explain the process of preparing for timber cultivation.
- Describe the process of raising saplings in the nursery.
- Explain the process of preparing the land for timber cultivation.

Duration: 20:00	Duration: 35:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Explain the criteria for selecting a site for timber cultivation. - Discuss different soil types and their composition. - Describe the process of preparing a field for timber cultivation, including clearing the field, ploughing, fencing, etc. - Discuss different types of timber producing tree species, their economic viability and suitability to different agro-climatic conditions. - Explain the importance of procuring the planting material from the government-approved sellers and institutions. - List different types of fertilizers used while preparing the field for timber cultivation. - Elucidate different types of nursery beds and the process of preparing an appropriate type of nursery bed according to the timber tree species. - Explain the importance of planning and providing enough spacing between trees to promote their healthy growth. - Explain how to handle the planting material safely. - State the recommended pit specifications for planting different timber tree species. - Explain the use of appropriate tools, implements and equipment for preparing the field or nursery bed for timber cultivation.	- Demonstrate the process of treating the planting material, using the recommended fungicide or insecticide in the recommended dose. - Show how to clear the selected land of any weeds, debris, root stumps, waste, etc. - Demonstrate the process of applying the necessary treatment(s) to the soil to make it suitable for timber cultivation, e.g. application of manure to increase the organic matter content or lime to adjust the soil's pH. - Demonstrate the process of carrying out appropriate type of ploughing according to the type of selected timber tree species, e.g. disc ploughing for Casuarina. - Show how to create pits of the recommended width and depth at appropriate spacing for planting the selected timber tree saplings. - Demonstrate the process of applying the recommended quantity of organic fertilizers in the pits. - Show how to create water channels in the field for the efficient delivery and drainage of water. - Demonstrate the process of preparing the appropriate type of nursery bed, .i.e. flat, raised or sunken nursery bed for raising timber tree saplings. - Demonstrate the process of applying mulch, compost and other recommended material to provide

	optimum nutrient levels to saplings.
	• Demonstrate the process of sowing seeds of the selected species at the recommended depth and mulch and irrigate them immediately after sowing.
	• Demonstrate the process of applying the appropriate fertilizers in the nursery bed at recommended intervals.
	• Demonstrate how to harvest saplings using the appropriate tools and equipment, ensuing no damage to saplings.

Classroom Aids

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

Tools, Equipment and Other Requirements

Boxes, Digging forks, Crowbar, Cutting Pliers, Enamel Paints, Germination trays, Cotton & Steel Tapes, Net, Khurpa, Hedge Cutter

Module 3: Coordinate with the relevant authorities and SMEs for timber cultivation

Mapped to ARG/N6119 v2.0

Terminal Outcomes:

- Elucidate the need for securing the relevant license/approval.
- Explain ways to coordinate with the relevant institutions.
- Describe the process of registering for the relevant programs and schemes.

Duration: 05:00	Duration: 25:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss the regulations applicable to timber cultivation and the implications of not complying with them. - List the necessary licenses and approvals required for timber cultivation, and the relevant authorities to coordinate with for them. - Discuss the relevant government programs and schemes with the provision of support for timber cultivation. - Explain the requirement of registering a timber cultivation enterprise. - Describe the applicable documentation requirements and procedures. - Elucidate the importance and benefits of consulting the relevant SMEs.	- Demonstrate the process of carrying out the necessary documentation, such as filling in the required forms and submission of relevant documents, following the applicable procedure. - Demonstrate how to organise regular visits of SMEs from the concerned institutes to identify any interventions required, e.g. nutrient and disease management to ensure the healthy growth and development of timber.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Prismatic Compass, Prunning Scissors, Disc Plough, Forks, Ranging Rod, Iron Pan, Sprayers, Strainer or Cable Puller or Iron Rod Hook	

Module 4: Process of carrying out planting/sowing of timber plants and seeds

Mapped to AGR/N6117 v2.0

Terminal Outcomes:

- Describe the process of carrying out planting/sowing operations.
- Explain the importance of providing the necessary care after planting/sowing.

Duration: 25:00	**Duration: 35:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Explain the importance of selecting healthy planting material. - Explain how to treat seeds. - Describe the appropriate method to be followed to identify unviable seeds. - Explain the importance of following the appropriate time and duration specifications for plantation/ sowing. - State the appropriate precautions to be taken undertaking timber tree planting/sowing operations. - Elucidate different types of planting systems and the appropriate planting systems to be followed to produce timber trees. - Explain the use of appropriate equipment and materials required during the operation of plantation/sowing. - Elucidate varied types of fertilizer, pesticides, insecticides and herbicides and the process of applying them. - Discuss the possible threats to trees at timber plantations and the relevant safety measures to be taken. - Explain hazards and risks associated with planting/ sowing operation and how to minimize them. - Explain how to determine quality of planting/sowing work.	- Demonstrate how to prepare the appropriate tools and equipment for the planting operations. - Demonstrate the process of treating the seeds with the recommended fungicide. - Demonstrate the process of carrying out planting/sowing operations at an appropriate time of the day, i.e. early morning or in the evening to protect saplings from exposure to high temperatures. - Demonstrate the process of sowing seeds of selected timber tree species at an appropriate depth. - Show how to place saplings firmly and correctly in the prepared pits and backfill the pits with topsoil and compost. - Demonstrate the process of installing stakes to support the vertical growth of saplings, as required. - Demonstrate the process of installing windbreaks or grow appropriate trees as windbreaks to protect saplings from strong winds.

Classroom Aids
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop

Tools, Equipment and Other Requirements

Mesh Wire, Shovels, Ropes, Measuring Tape, Trolleys, Shears, Spades, Water Pump, Tractor, Wooden Pegs, wire cutters

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Module 5: Process of maintaining the timber trees and plantation
Mapped to AGR/N6118 v2.0

Terminal Outcomes:

- Describe the process of performing nutrient and weed management.
- Describe the process of performing plant protection.
- Elucidate ways to manage the irrigation process.
- Describe the process of carrying out pruning, trimming, thinning and intercropping.
- Describe the process of performing infrastructural maintenance.

Duration: 55:00	Duration: 35:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Discuss the Good Agricultural Practices (GAPs) relevant to timber cultivation. - Explain the importance of ensuring that there is no excessive or inadequate irrigation. - Describe different methods of Irrigation, e.g. surface, sprinkler, drip/trickle and sub- surface irrigation. - Explain the importance of applying the suitable fertilizers in an appropriate quantity to the crop as per the crop's age. - Elucidate the appropriate precautions to be taken while applying fertilizers and pesticides. - Describe different methods of applying fertilizers, such as broadcasting, fertigation, placement, etc. - Explain different types of risks to timber trees and how to minimize them. - State the irrigation water requirement of different species of timber trees in different seasons. - Describe the infrastructure repair and maintenance process for timber plantations. - Explain the use of relevant plant protection equipment for the application of pesticides. - Explain the benefits of using a combination of organic and inorganic	- Demonstrate the process of applying the recommended organic/ inorganic fertilizers according to the need. - Demonstrate the process of applying the recommended pesticides and other appropriate treatment to remove timber tree pests and diseases. - Demonstrate the use of the appropriate plant protection equipment as per the manufacturer's instructions to apply pesticides and other treatment. - Demonstrate the use of the appropriate Personal Protective Equipment (PPE) to ensure personal protection while applying pesticides. - Prepare a sample record of pesticide use to ensure compliance with the applicable regulations concerning their use. - Demonstrate the process of installing the irrigation system following the manufacturer's instructions. - Demonstrate the process of carrying out irrigation with the recommended quantity of water and at appropriate intervals according to the timber tree species grown and the season. - Show how to remove weeds from the timber plantation, following the appropriate weed control method, e.g. mechanical, cultural, biological and chemical weed control or a combination of methods, as

fertilizers.

- Describe the applicable organic methods for pest and disease control in timber plantations.

- Explain the appropriate preventive measures to be followed to protect timber trees from pests and diseases.

- Explain the importance of taking help of a government-approved laboratory for pest and disease identification.

- List the signs of pest and disease infestation in timber trees and appropriate remedial measures to be taken.

- Discuss the applicable weed control practices and methods, such as mechanical, biological, chemical, etc.

- Explain the importance of conducting regular inspections of timber plantations.

- Explain the importance of fulfilling the varying nutrient needs of the crop according to the stages of its growth.

- Describe the process and befits of intercropping.

appropriate.

- Demonstrate the process of carrying out pruning, trimming and thinning using the appropriate manual and mechanical tools and equipment, following the applicable safety measures.

- Demonstrate the process of carrying out infrastructure maintenance using the appropriate tools, implements and equipment.

- Prepare sample record of repair and maintenance activities.

Classroom Aids

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

Tools, Equipment and Other Requirements

Helmet, Respiratory Masks, Rubber gloves, Wooden or RCC Poles, Safety Shoes, Installed Video camera with high resolution and recording facility

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Module 6: Process of harvesting, storing and marketing the timber
Mapped to AGR/N6120 v2.0

Terminal Outcomes:

- Describe the process of harvesting the timber.
- Elucidate ways to store and market the harvested timber.

Duration: 05:00	Duration: 25:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- State the maturity index of different timber tree species. - List the necessary approvals required from the appropriate authorities before undertaking timber harvesting. - Describe the process of harvesting timber and the safe use of relevant tools and equipment. - Describe different methods of harvesting timber. - Explain the appropriate health and safety precautions to be taken while harvesting timber. - Describe the methods of storing of timber and the applicable costs. - State the storage conditions required for storing timber. - Explain how to set the price of agricultural commodities, taking into consideration the applicable costs. - Discuss different types of buyers of timber. - Explain how to perform cost-benefit analysis. - Describe the process of marketing timber according to the season. - Explain the use of different e-payment methods. - Elucidate the importance and process of maintaining electronic records.	- Prepare sample documents concerning the necessary approvals for harvesting timber trees. - Demonstrate how to prepare the appropriate tools and equipment for harvesting timber trees. - Demonstrate the process of harvesting the timber trees following the appropriate harvesting method, e.g. tree-length logging, full-tree logging, cut-to-length logging, with the help of trained personnel. - Demonstrate the use of the appropriate equipment, e.g. forklift to lift, carry and load the harvested timber to the transport vehicle. - Show how to process the payment using the buyer-preferred e-payment method. - Prepare sample manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	

Fire Extinguisher, Wooden Planks, Watering cans, Fertilizer (Organic/ Chemical - As per the need), Bamboos splinters, Axes, Budding and Grafting Knives, Budding and Grafting Tape, Barbed Wire

Module 7: 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: 02:00	Duration: 10:00
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 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 v3.0

Terminal Outcomes:

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

Duration: 03:00	Duration: 15:00
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. - 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 implement 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 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

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 analyzing 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 Timber Grower

Mandatory Duration: 30:00	Recommended Duration: 00:00
Location: On-Site	

Terminal Outcomes

- Discuss different soil types and their composition.
- Elucidate different types of nursery beds and the process of preparing an appropriate type of nursery bed according to the timber tree species.
- Prepare the appropriate type of nursery bed, i.e. flat, raised or sunken nursery bed for raising timber tree saplings.
- Sow seeds of the selected species at the recommended depth and mulch and irrigate them immediately after sowing.
- Harvest saplings using the appropriate tools and equipment, ensuring no damage to saplings.
- Sow seeds of selected timber tree species at an appropriate depth.
- Apply the recommended pesticides and other appropriate treatments to remove timber tree pests and diseases.
- Install the irrigation system following the manufacturer's instructions.
- Harvest the timber trees following the appropriate harvesting method, e.g. tree-length logging, full-tree logging, and cut-to-length logging, with the help of trained personnel.
- Prepare manual and/ or electronic records of sales and payments using the physical registers and/ or the relevant computer application.

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
12th Class	Class 12th	4	Timber Growing	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	Timber Growing	0		
Graduate	Graduate	3	Timber Growing	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	Timber Growing	0		

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Timber Grower**", mapped to QP: "AGR/Q6104, 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.Sc. (Agriculture/ Botany/ Forestry/ Horticulture and related streams)	5	Forestry/ Horticulture and related Experience	0		Practical skills and knowledge required in Timber production
Post-Graduation	M.Sc. (Botany/ Forestry/ Horticulture/Agroforestry and related streams)	2	Forestry/ Horticulture and related Experience	0		Practical skills and knowledge required in Timber production
PhD	PhD (Botany/ Forestry/ Horticulture/Agroforestry and related streams)	1	Forestry/ Horticulture and related Experience	0		Practical skills and knowledge required in Timber production

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Timber Grower**", mapped to QP: "AGR/Q6104, 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. The 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.

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 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

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
  - Candidate feedback sheet
  - 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 tool 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 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
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	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	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
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