



# Model Curriculum

**QP Name: Bamboo Grower**

**QP Code: AGR/Q6101**

**Version: 3.0**

**NSQF Level: 3**

**Model Curriculum Version: 2.0**

Agriculture Skill Council of India | | Agriculture Skill Council of India (ASCI), 6th Floor, GNG Tower, Plot No.  
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## Training Parameters

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Forestry, Environment and Renewable Energy Management
<b>Occupation</b>	Agro-Forestry Management
<b>Country</b>	India
<b>NSQF Level</b>	3
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/6112.0701
<b>Minimum Educational Qualification and Experience</b>	5th Class with 3 years of relevant experience OR Ability to read and write with 5 years of experience in farm cultivation /operations OR Certificate-NSQF Level-3 (Non-Timber Forest Produce (NTFP) Collector/Harvester) with 6 Months of relevant experience
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	17 Years
<b>Last Reviewed On</b>	17/11/2022
<b>Next Review Date</b>	17/11/2025
<b>NSQC Approval Date</b>	27/01/2022
<b>QP Version</b>	3.0
<b>Model Curriculum Creation Date</b>	17/11/2022
<b>Model Curriculum Valid Up to Date</b>	17/11/2025
<b>Model Curriculum Version</b>	2.0
<b>Minimum Duration of the Course</b>	270 Hours
<b>Maximum Duration of the Course</b>	270 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:

- Demonstrate the process of propagating bamboo saplings in the nursery.
- Describe the process of selecting the bamboo variety and site and preparing the field.
- Demonstrate the process of transplanting and maintaining the bamboo sapling.
- Demonstrate the process of carrying out pruning and weeding in the bamboo crop.
- Demonstrate the process of carrying out irrigation, nutrient management and intercropping.
- Demonstrate the process of carrying out integrated pest and disease management for the bamboo crop.
- Demonstrate the process of carrying out harvesting, post-harvest processing and marketing activities.
- Explain the basic entrepreneurial activities for small enterprise.
- Describe the process of undertaking employability and entrepreneurial practices.
- Demonstrate various practices to maintain health, hygiene and safety at the workplace.

### 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>Bridge Module</b>	<b>05:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>05:00</b>
Module 1: Introduction to the role of a Bamboo Grower	05:00	00:00	0:00	0:00	05:00
<b>AGR/N6101 Propagate bamboo saplings in the nursery</b> <b>NOS Version-2.0</b> <b>NSQF Level- 3</b>	<b>10:00</b>	<b>15:00</b>	<b>0:00</b>	<b>0:00</b>	<b>25:00</b>
Module 2: Process of Propagating bamboo samplings in the nursery	10:00	15:00	0:00	0:00	25:00
<b>AGR/N6103 Select the bamboo variety and site, and prepare the field</b> <b>NOS Version-2.0</b> <b>NSQF Level- 3</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>

Module 3: Process of selecting the bamboo variety, site, and preparing the field	10:00	20:00	0:00	0:00	30:00
<b>AGR/N6104 Transplant and maintain the bamboo saplings NOS Version-2.0 NSQF Level-3</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 4: Process of transplanting and maintaining the bamboo saplings	10:00	20:00	0:00	0:00	30:00
<b>AGR/N6105: Carry out pruning and weeding in bamboo crop NOS Version-2.0 NSQF Level-3</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 5: Process of carrying out pruning and weeding in bamboo crop	10:00	20:00	0:00	0:00	30:00
<b>AGR/N6106 Carry out irrigation, nutrient management and intercropping NOS Version-2.0 NSQF Level-3</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 6: Process of carrying out irrigation, nutrient management and intercropping	10:00	20:00	0:00	0:00	30:00
<b>AGR/N6107 Carry out integrated pest and disease management for bamboo crop NOS Version-2.0 NSQF Level-3</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 7: Process of carrying out integrated pest and disease management for bamboo crop	10:00	20:00	0:00	0:00	30:00
<b>AGR/N6108 Carry out harvesting, post-harvest processing and marketing activities</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>

<b>NOS Version-2.0</b> <b>NSQF Level- 3</b>					
Module 8: Process of carrying out harvesting, post-harvest processing and marketing activities	10:00	20:00	0:00	0:00	30:00
<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 9: Hygiene and cleanliness	03:00	03:00	0:00	0:00	06:00
Module 10: Safety and emergency procedures	12:00	12:00	0:00	0:00	24:00
<b>DGT/VSQ/N0101 Employability Skills</b> <b>NOS Version-1.0</b> <b>NSQF Level-2</b>	<b>30:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 11: Employability Skills	30:00	00:00	0:00	0:00	30:00
<b>Total Duration</b>	<b>120:00</b>	<b>150:00</b>	<b>0:00</b>	<b>0:00</b>	<b>270:00</b>

# Module Details

## Module 1: Introduction to the role of a Bamboo Grower

### Bridge Module

#### Terminal Outcomes:

- Discuss the job role a Bamboo Grower.

<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 Bamboo Grower.</li> <li>• Identify various employment opportunities for a Bamboo Grower.</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: Process of Propagating bamboo samplings in the nursery

### Mapped to NOS AGR/N6101 v2.0

#### Terminal Outcomes:

- Describe the process of preparing for propagating bamboo saplings in the nursery.
- Demonstrate the process of planting and maintaining the bamboo saplings.
- Describe the process of harvesting and transporting the bamboo saplings.

<b>Duration: 10:00</b>	<b>Duration: 15:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the criteria for selecting a site for nursery propagation of bamboo saplings such as the appropriate climatic conditions, adequate exposure to sunlight.</li> <li>• Describe different methods for the cultivation of bamboo saplings such as planting culms, cutting, tillering, layering, etc.</li> <li>• Describe the process of selecting a vendor and procuring the resources required for the cultivation of bamboo saplings</li> <li>• Explain the importance of maintaining safe and hygienic storage and transportation of the planting material and other resources.</li> <li>• Explain the importance of ensuring effective drainage in the nursery bed.</li> <li>• Explain the importance of providing immediate care such as water and fertiliser to the saplings.</li> <li>• State the irrigation schedule and the recommended quantity of water for irrigating bamboo saplings.</li> <li>• Explain the importance and ways of protecting saplings from strong winds, overexposure to sunlight and fluctuations in temperature.</li> <li>• State the recommended temperature and humidity for storing bamboo saplings.</li> <li>• Explain the importance of transporting bamboo saplings to the field safely and maintaining the</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to treat the planting material before use to prevent pest and disease during propagation and cultivation.</li> <li>• Demonstrate the process of preparing the sunken, raised or level nursery bed as per the requirement.</li> <li>• Demonstrate the process of planting seeds, cuttings or culms at the recommended depth and planting density.</li> <li>• Demonstrate the process of applying the recommended pesticides, insecticides or fungicides to protect the saplings from pests and disease.</li> <li>• Demonstrate the process of applying the recommended organic or inorganic fertilisers for the healthy growth of the saplings.</li> <li>• Demonstrate the process of carrying out weeding to remove unwanted plants growing in the nursery bed.</li> <li>• Demonstrate how to clear any waterlogging from the nursery bed.</li> <li>• Demonstrate the process of harvesting the saplings using required tools, implements and accessories.</li> </ul>

required level of moisture during transit.	
<b>Classroom Aids</b>	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Chemicals, Pruning, Tools and Equipment	

## Module 3: Process of selecting the bamboo variety ,site and preparing the field

*Mapped to NOS AGR/N6103 v2.0*

### Terminal Outcomes:

- Describe the process of selecting the bamboo variety and site.
- Describe the process of preparing the field for bamboo cultivation.

<b>Duration: 10:00</b>	<b>Duration: 20:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the criteria for selecting a variety of bamboo to be cultivated and a site for cultivation.</li> <li>• Explain the characteristics of soil suitable for bamboo cultivation.</li> <li>• Explain the importance and process of clearing and deep ploughing the bamboo cultivation field.</li> <li>• Describe the process of sampling the field soil and getting it tested by an approved lab to determine its macro and micronutrients needs.</li> <li>• Explain the importance of applying the prescribed organic and inorganic fertilisers.</li> <li>• Explain the use of lime or gypsum to adjust the soil's pH and salinity levels.</li> <li>• Explain the importance of creating drains in the field for the effective drainage of water.</li> <li>• Explain the importance of erecting fences around the field to protect it from stray animals and other external threats.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to remove all waste materials from the site.</li> <li>• Demonstrate the process of carrying out deep ploughing to remove shrubs, weeds, rocks, tree roots and stumps from the site.</li> <li>• Demonstrate the process of carrying out soil fumigation using the recommended chemicals to disinfect the soil and watering it with the recommended quantity to wash away the disinfectants.</li> <li>• Show how to apply the prescribed organic and inorganic fertilisers such as compost, peat moss or Farm Yard Manure (FYM) to the soil to improve its fertility and loosen it.</li> <li>• Show how to apply the recommended treatment such as lime or gypsum to adjust the soil's pH and salinity levels.</li> <li>• Demonstrate the process of preparing holes of the recommended depth and dimensions at appropriate spacing for planting bamboo saplings.</li> <li>• Show how to create drains in the field for the effective drainage of water.</li> <li>• Demonstrate the process of installing the appropriate irrigation or fertigation system in the field.</li> <li>• Demonstrate how to erect fences around the field to protect it from stray animals and other external threats.</li> </ul>

<b>Classroom Aids</b>
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop
<b>Tools, Equipment and Other Requirements</b>
Record Keeping Book, Voucher, Receipts

## Module 4: Process of transplanting and maintaining the bamboo saplings

### Mapped to NOS AGR/N6104 v2.0

#### Terminal Outcomes:

- Demonstrate the process of transplanting and maintaining the saplings.

<b>Duration: 10:00</b>	<b>Duration: 20:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the importance of acclimatising and transplanting bamboo saplings at an appropriate temperature to ensure their survival.</li> <li>• Explain the use of the relevant tools and implements for transplanting bamboo saplings</li> <li>• State the recommended planting depth and density to be maintained while transplanting bamboo saplings.</li> <li>• Explain the importance of watering the bamboo sapling with the recommended quantity and applying the recommended fertilisers in an appropriate quantity soon after transplanting them.</li> <li>• Explain the importance and ways of protecting bamboo saplings from strong winds direct sunlight during the early stages of their growth.</li> <li>• Explain the importance of monitoring the transplanted saplings.</li> <li>• Explain the importance of irrigating bamboo sapling with an appropriate quantity of water to prevent root rot.</li> <li>• State the recommended insecticides and pesticides to be applied to bamboo saplings.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of acclimatising the bamboo saplings before being transplanted in the field.</li> <li>• Demonstrate the process of transplanting the bamboo saplings in the field using the appropriate tools and implements.</li> <li>• Demonstrate the process of applying the recommended fertiliser in an appropriate quantity to provide immediate care after transplantation.</li> <li>• Show how to replace the unhealthy or dead saplings with healthy ones.</li> </ul>
<b>Classroom Aids</b>	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Soil Testing Kit, Plastic Bags, Labels	

## Module 5: Process of carrying out pruning and weeding in bamboo crop

### Mapped to NOS AGR/N6105 v2.0

#### Terminal Outcomes:

- Demonstrate the process of carrying out pruning and weeding.

<b>Duration: 10:00</b>	<b>Duration: 20:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the use of the appropriate tools and implements such as pruner and lopper for pruning unwanted or dead culms, branches or leaves from bamboo trees.</li> <li>• Describe different methods of pruning bamboo trees.</li> <li>• State the recommended chemicals to be applied on the pruned areas on bamboo trees.</li> <li>• Explain how to utilise the pruned tree parts to prepare compost.</li> <li>• Explain the importance of pruning bamboo clumps at appropriate intervals to prevent clump congestion.</li> <li>• Explain the use of the appropriate weeding tools and implements for manual and mechanical weeding.</li> <li>• Explain the importance of disposing the eliminated weeds away from the field.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of carrying out pruning to remove unwanted or dead culms, branches or leaves on bamboo trees following the recommended pruning method.</li> <li>• Show how to apply the recommended chemicals to the pruned areas on the bamboo trees.</li> <li>• Demonstrate how to remove the pruned tree parts and use them to prepare compost.</li> <li>• Demonstrate how to remove unwanted, old and rotting clumps.</li> <li>• Demonstrate the process of pruning the clumps at appropriate intervals and as per the requirement to prevent clump congestion.</li> <li>• Demonstrate the process of carrying out thinning of clumps using the appropriate implements to provide space for new shoots to emerge.</li> <li>• Demonstrate the process of carrying out weeding manually or mechanically without leaving weed roots in the field.</li> <li>• Show how to apply mulch or recommended herbicides to prevent the growth of weeds.</li> <li>• Demonstrate the process of disposing the weeds eliminated from the field.</li> </ul>
<b>Classroom Aids</b>	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Mulching Materials, Chemicals, Pruning Tools/ Equipment	

## Module 6: Process of carrying out irrigation, nutrient management and intercropping

*Mapped to NOS AGR/N6106 v2.0*

### Terminal Outcomes:

- Demonstrate the process of irrigating bamboo trees.
- Demonstrate the process of carrying out intercropping.
- Demonstrate the process of performing nutrient management.

<b>Duration: 10:00</b>	<b>Duration: 20:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain how to ascertain the irrigation needs of bamboo trees based on the soil moisture and climate.</li> <li>• Describe the process of irrigating bamboo trees with the recommended quantity of water and the appropriate irrigation method to be followed.</li> <li>• Explain the importance of following the irrigation schedule as per the stages of growth of bamboo trees.</li> <li>• Explain the benefits of intercropping.</li> <li>• Explain how to select appropriate vegetable or cash crops for intercropping with the bamboo crop.</li> <li>• Describe the importance of maintaining the recommended planting density while intercropping to allow for optimum growth of intercropped vegetables/ crops.</li> <li>• Explain the importance of trimming the culms on bamboo plants.</li> <li>• State the recommended practices to be followed to prevent canopy exposure, loss of soil moisture through evaporation and competition from weeds and other vegetation.</li> <li>• State the recommended organic or inorganic fertilisers to be applied to the field during intercropping.</li> <li>• Describe the process of determining the macro and micronutrients needs</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of irrigating the bamboo trees with the recommended quantity of water following an appropriate irrigation method.</li> <li>• Demonstrate the process of carrying out intercropping of the selected crops with the bamboo crop.</li> <li>• Show how to trim the culms on bamboo plants to ensure the intercropped vegetables/ crops receive the required exposure to sunlight.</li> <li>• Demonstrate the process of applying the selected organic and inorganic fertilisers to the soil and field for the optimum growth of bamboo trees.</li> </ul>

<p>of the soil through a soil analysis by an approved lab, and applying the recommended fertilisers.</p>	
<p><b>Classroom Aids</b></p>	
<p>Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Mulching Materials, Chemicals, Soil Testing Kit, Plastic Bags</p>	

## Module 7: Process of carrying out integrated pest and disease management for bamboo crop

*Mapped to AGR/N6107 v2.0*

### Terminal Outcomes:

- Describe the process of managing pests and disease.
- Demonstrate various practices for effective resource optimisation.
- Demonstrate various waste management practices.

<b>Duration: 10:00</b>	<b>Duration: 20:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the recommended prophylactic measures to be followed to protect bamboo trees from common pests and disease.</li> <li>• Explain how to identify the symptoms, stage and location of various pests and diseases in bamboo trees along with the extent of the damage.</li> <li>• Describe the process of selecting and applying appropriate treatment to bamboo culms to eliminate the identified pest and disease.</li> <li>• Explain the use of the relevant PPE.</li> <li>• Explain the importance of maintaining the record of pesticides/ insecticides/ fungicides applied to bamboo trees.</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>• Demonstrate the process of applying the selected treatment using the recommended personal protective equipment (PPE) to protect the bamboo trees from common pests and disease.</li> <li>• Prepare a sample record of treatment applied to bamboo trees.</li> <li>• Demonstrate how to remove the bamboo tree parts damaged by pests and disease and dispose them safely in an environment-friendly manner.</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, Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Chemicals, Soil Testing Kit	

## Module 8: Process of carrying out harvesting, post-harvest processing and marketing activities

*Mapped to NOS AGR/N6108 v2.0*

### Terminal Outcomes:

- Demonstrate the process of harvesting bamboo culms.
- Demonstrate the process of carrying out post-harvest processing and storing culms.
- Demonstrate the process of marketing bamboo culms.

<b>Duration: 10:00</b>	<b>Duration: 20:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• List the signs of maturity of bamboo culms for being harvested.</li> <li>• State the appropriate season for harvesting bamboo culms.</li> <li>• Explain the use of the appropriate hand and mechanical tools and implements for harvesting bamboo culms.</li> <li>• Explain the importance of disinfecting the tools and implements before using them.</li> <li>• Explain the importance of removing branches extending from the lower nodes of the mature culms.</li> <li>• Explain the importance of ensuring no damage to young culms and rhizomes on bamboo trees during harvesting.</li> <li>• Explain the importance of collecting and transporting the harvested bamboo culms appropriately to avoid scratches or injury to their epidermal layer.</li> <li>• Explain the criteria for selecting the appropriate storage area for storing culms.</li> <li>• Explain the importance of stacking bamboo culms vertically in the storage area.</li> <li>• State the appropriate time for selling the harvested bamboo culms considering their seasonal demand.</li> <li>• Describe the process of identifying</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to remove branches extending from the lower nodes of the mature culms to allow convenient harvesting and extraction.</li> <li>• Demonstrate the process of harvesting mature bamboo culms appropriately using the relevant tools and implements.</li> <li>• Show how to air dry the harvested bamboo culms.</li> <li>• Demonstrate the process of applying the necessary treatment to remove pests, termites and disease from the storage area.</li> <li>• Show how to stack culms vertically in the storage area.</li> <li>• Demonstrate how to process the payment using the buyer-preferred e-payment method.</li> <li>• Prepare a sample record of sales and payment manually and/ or electronically.</li> </ul>

<p>relevant buyers or market such as eMandi and local traders for the harvested bamboo culms.</p> <ul style="list-style-type: none"> <li>• Explain how to negotiate the price with the buyer(s).</li> <li>• State the appropriate mode of transportation for transporting bamboo culms.</li> </ul>	
<p><b>Classroom Aids:</b></p>	
<p>Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>NA</p>	

## Module 9: Hygiene and cleanliness

### Mapped to NOS AGR/N9903 v3.0

#### Terminal Outcomes:

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

<b>Duration: 03:00</b>	<b>Duration: 03:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<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 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 10: Safety and emergency procedures

### Mapped to NOS AGR/N9903 v3.0

#### Terminal Outcomes:

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

<b>Duration: 12:00</b>	<b>Duration: 12:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• List the 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 damages 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, PowerPoint 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 11: Employability Skills (30 hours)

*Mapped to NOS DGT/VSQ/N0101 v1.0*

**Duration: 30:00**

### Key Learning Outcomes

#### Introduction to Employability Skills Duration: 1 Hour

After completing this programme, participants will be able to:

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

#### Constitutional values - Citizenship Duration: 1 Hour

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

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

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

#### Basic English Skills Duration: 2 Hours

6. Use appropriate basic English sentences/phrases while speaking

#### Communication Skills Duration: 4 Hour

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

#### Diversity & Inclusion Duration: 1 Hour

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

#### Financial and Legal Literacy Duration: 4 Hours

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

#### Essential Digital Skills Duration: 3 Hours

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

#### Entrepreneurship Duration: 7 Hours

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

#### Customer Service Duration: 4 Hours

17. Differentiate between types of customers
18. Explain the significance of identifying customer needs and addressing them
19. Discuss the significance of maintaining hygiene and dressing appropriately

**Getting ready for apprenticeship & Jobs Duration: 2 Hours**

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

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
10th Class		5	Bamboo Cultivation	0		Bamboo Grower with 5 Years experience of working with 10 <sup>th</sup> pass. Experience certificate issued by BDO/ Agriculture Officer/ Head of Grampanchayat/ Loan Disbursing Bank or Financial Institution on Official Letterhead
12 <sup>th</sup> Class		4	Bamboo Cultivation	0		Ex-Service-Men including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honorable Discharge/ Pension. SSC would consider a relaxation/waiver of sector specific experience on case to case basis.
Diploma	Agriculture/ Horticulture	3	Bamboo Cultivation	0		
Graduate	Graduate in any stream except Agriculture/ Horticulture/ Forestry	2	Bamboo Cultivation	0		For the school Program minimum qualification of the Trainer should be Graduate (Agriculture / Horticulture / Botany/ Forestry) with minimum 3 years Teaching experience (will be considered industry experience)
Certificate	CITS Pass-Bamboo works certificate	2	Bamboo Cultivation	0		
Graduate	Agriculture/ Horticulture/ Forestry	0.5	Bamboo Cultivation	0		
Trainer Certification						
Domain Certification				Platform Certification		
Certified for Job Role “ <b>Bamboo Grower</b> ”, mapped to QP: “AGR/Q6101, 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 MEPS guidelines is 80%.		

## Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
<b>Graduation</b>	Agriculture/ Botany/ Forestry/ Horticulture/ Plantation and related streams	5	Forestry/ Horticulture and related experience	0		Practical skills and knowledge required in Bamboo Cultivation
<b>Post-Graduation</b>	Agriculture/ Botany/ Forestry/ Horticulture /Plantation and related streams	2	Forestry/ Horticulture and related experience	0		Practical skills and knowledge required in Bamboo Cultivation
<b>PhD</b>	Agriculture/ Botany/ Forestry/ Horticulture/Plantation and related streams	1	Forestry/ Horticulture and related experience	0		Practical skills and knowledge required in Bamboo Cultivation

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Bamboo Grower</b> ”, mapped to QP: “AGR/Q6101, 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

<b>Assessment</b>			
<b>Assessment Type</b>	<b>Formative or Summative</b>	<b>Strategies</b>	<b>Examples</b>
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
  - 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 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 upon the completion of the training.
<b>Terminal Outcome</b>	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
FYM	Farm Yard Manure
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