



QUALIFICATION FILE

Bamboo Cultivator

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☒ Apprenticeship

☒ Upskilling ☐ Dual/Flexi Qualification ☒ For ToT ☒ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 3

Submitted By:

Agriculture Skill Council of India

Unit No. 101, First Floor, Greenwoods Plaza, Block 'B', Greenwoods City, Sector 45, Gurugram -122009, Haryana.

Table of Contents

Section 1: Basic Details 3

Section 2: Module Summary 5

 NOS/s of Qualifications..... 5

 Mandatory NOS/s: 5

 Assessment - Minimum Qualifying Percentage..... 6

Section 3: Training Related..... 6

Section 4: Assessment Related..... 7

Section 5: Evidence of the need for the Qualification..... 8

Section 6: Annexure & Supporting Documents Check List..... 8

 Annexure 1: Evidence of Level..... 9

 Annexure 2: Tools and Equipment (Lab Set-Up) 11

 Annexure 3: Industry Validations Summary 12

 Annexure 4: Training & Employment Details 12

 Annexure 5: Detailed Assessment Criteria 14

 Annexure 6: Assessment Strategy 23

 Annexure: Acronym and Glossary 27

Section 1: Basic Details

1.	Qualification Name	Bamboo Cultivator																
2.	Sector/s	Agriculture																
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing qualification: 2022/AGR/ASCI/06526 & Version 1.0	Qualification Name of existing/previous version: Bamboo Grower															
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA																
5.	National Qualification Register (NQR) Code&Version (Will be issued after NSQC approval)	QG-03-AG-03533-2025-V2-ASCI & Version 2.0	6. NCrf/NSQF Level: 3															
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate																
8.	Brief Description of the Qualification	A Bamboo cultivator is responsible for propagating bamboo saplings in a nursery; transplanting them into the field, and maintaining and harvesting bamboo culms. The individual is also responsible for marketing the harvested bamboos culms.																
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10th or Equivalent</td> <td></td> </tr> <tr> <td>2</td> <td>8th Class Pass</td> <td>3 years of relevant experience in Agriculture & allied sector</td> </tr> <tr> <td>3</td> <td>Previous NSQF Level 2.5</td> <td>1.5 years of relevant experience in Agriculture & allied sector</td> </tr> <tr> <td>4</td> <td>Previous NSQF Level 2</td> <td>3 years of relevant experience in Agriculture & allied sector</td> </tr> </tbody> </table> b. Age: NA		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	10 th or Equivalent		2	8th Class Pass	3 years of relevant experience in Agriculture & allied sector	3	Previous NSQF Level 2.5	1.5 years of relevant experience in Agriculture & allied sector	4	Previous NSQF Level 2	3 years of relevant experience in Agriculture & allied sector
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																
1	10 th or Equivalent																	
2	8th Class Pass	3 years of relevant experience in Agriculture & allied sector																
3	Previous NSQF Level 2.5	1.5 years of relevant experience in Agriculture & allied sector																
4	Previous NSQF Level 2	3 years of relevant experience in Agriculture & allied sector																
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	9	11. Common Cost Norm Category (I/II/III) (wherever applicable): II															
12.	Any Licensing requirements for Undertaking Training on This	NA																

	Qualification (wherever applicable)																							
13.	Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)	☒ Offline ☐ Online ☐ Blended <table border="1"> <thead> <tr> <th>Training Delivery Modes</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>OJT Mandatory (Hours)</th><th>OJT Recommended (Hours)</th><th>Total (Hours)</th></tr> </thead> <tbody> <tr> <td>Classroom (offline)</td><td>120</td><td>150</td><td></td><td></td><td>270</td></tr> <tr> <td>Online</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table> (Refer Blended Learning Annexure for details)					Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	120	150			270	Online					
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																			
Classroom (offline)	120	150			270																			
Online																								
14.	Aligned to NCO/ISCO Code/s (if no code is available mention the same)	NCO-2015/6112.0701																						
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	Bamboo Cultivator (L3), Timber Grower(L4)/Forest Nursery Raiser(L4)																						
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi																						
17.	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☐ No URLs of similar Qualifications:																						
18.	Is the Job Role Amenable to Persons with Disability	☒ Yes ☐ No If "Yes", specify applicable type of Disability: SHI																						
19.	How Participation of Women will be Encouraged	Batches specific to women will be formed																						
20.	Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)	☒ Yes ☐ No DGT/VSQ/N0101 (v1.0)																						
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools ☒ Yes ☐ No Colleges ☒ Yes ☐ No																						
22.	Name and Contact Details of Submitting / Awarding Body SPOC (In case of CS or MS, provide details of both Lead AB & Supporting ABs)	Name: Ms Purnambica.K Email: standards@asci-india.com Website: www.asci-india.com Contact No.: 0124-4670029																						
23.	Final Approval Date by NSQC: 18-02-2025	24. Validity Duration: 3 years post NSQC Approval			25. Next Review Date: 18-02-2028																			

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

Th.-Theory Pr.-Practical OJT-On the Job Man.-Mandatory Training Rec.-Recommended Proj.-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1	Propagate bamboo saplings in the nursery	AGR/N6101 (v3.0)	Core	3	1	15	15			30	30	40		30	100	15
2	Select the bamboo variety and site, and prepare the field	AGR/N6103 (v2.0)	Core	3	1	10	20			30	30	40		30	100	15
3	Transplant and maintain the bamboo sapling	AGR/N6104 (v2.0)	Core	3	1	10	20			30	30	40		30	100	10
4	Carry out pruning and weeding in bamboo crop	AGR/N6105 (v2.0)	Core	3	1	10	20			30	30	40		30	100	10
5	Carry out irrigation, nutrient management and intercropping	AGR/N6106 (v2.0)	Core	3	1	10	20			30	30	40		30	100	10
6	Carry out integrated pest and disease management for bamboo crop	AGR/N6107 (v2.0)	Core	3	1	10	20			30	30	40		30	100	15
7	Carry out harvesting, post-harvest processing and marketing activities of bamboo culms	AGR/N6108 (v3.0)	Core	3	1	10	20			30	30	40		30	100	15
8	Maintain health and safety at the workplace	AGR/N9903 (v4.0)	Non-Core	4	1	15	15			30	40	25		35	100	5
9	Employability Skills (30 Hours)	DGT/VSQ/N 0101 (v1.0)	Non-Core	3	1	30				30	20	30			50	5

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
Duration (in Hours) / Total Marks					9	120	150			270	270	335		245	850	100

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level: 50 %(Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise: % (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	10th Class with 5 years of relevant industry experience in Bamboo Cultivation* *Experience certificate issued by BDO/Agriculture Officer/Head of Grampanchayat/Loan disbursing bank or financial institution on official letter Head OR 12th Class with 4 years of relevant industry experience in Bamboo Cultivation** **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. OR Diploma (Agriculture/Horticulture) with 3 years of relevant industry experience in Bamboo Cultivation OR Graduate (In any stream except Agriculture/ Horticulture/ Forestry) with 2 years of relevant industry or training experience in Bamboo Cultivation experience*** ***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) OR Certificate (CITS Pass- Bamboo Works certificate) with 2 years of relevant industry experience in Bamboo Cultivation OR
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		Graduate (Agriculture / Horticulture/ Forestry) with 0.5 years of relevant industry or experience in Bamboo Cultivation
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	5 years of training experience in Bamboo Cultivation after Graduation (In any stream except Agriculture/ Horticulture/ Forestry) with 2 years of relevant industry or training experience in Bamboo Cultivation experience OR 5 years of training experience in Bamboo Cultivation after Graduation (Agriculture / Horticulture/ Forestry) with 0.5 years of relevant industry or experience in Bamboo Cultivation
3.	Tools and Equipment Required for Training	☒ Yes ☐ No (If "Yes", details to be provided in Annexure)
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	NA

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Graduation (Agriculture/ Botany/ Forestry/ Horticulture/ Plantation and related streams) with 5 years of relevant industry experience in Forestry/ Horticulture and related experience OR Post-Graduation (Agriculture/ Botany/ Forestry/ Horticulture /Plantation and related streams) with 2 years of relevant industry experience in Forestry/ Horticulture and related experience OR PhD (Agriculture/ Botany/ Forestry/ Horticulture/Plantation and related streams) with 1 year of relevant industry experience in Forestry/ Horticulture and related experience
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma/Graduate (It is mandatory for a proctor to have technical knowledge/IT knowledge Once a proctor has been on-boarded by any AA, they are oriented about skill ecosystem along with do's and don'ts .)
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Post-Graduation (Agriculture/ Botany/ Forestry/ Horticulture /Plantation and related streams) with 10 years of relevant industry experience in Forestry/ Horticulture and related experience
4.	Assessment Mode (Specify the assessment mode)	Offline
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☒ Yes ☐ No (details to be provided in Annexure-if it is different for Assessment)

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): Yes
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): under PMKVY scheme
3.	Government /Industry initiatives/ requirement (Yes/No): Government Initiative, part of PMKVY 4.0
4.	Number of Industry validation provided: 08
5.	Estimated nos. of persons to be trained and employed: 8000
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: Awaited from Ministry of Agriculture and farmers welfare

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors <i>(Mandatory)</i>	<i>Annexure-1</i>
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	<i>Annexure-2</i>
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	<i>Annexure-5</i>
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	<i>Annexure-6</i>
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is “Blended Learning”)</i>	<i>NA</i>
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	<i>NA</i>
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	<i>Annexure-7</i>
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	<i>Bamboo Cultivator (L3), Timber Grower(L4)/Forest Nursery Raiser(L4)</i>
10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	<i>Annexure-8</i>
11.	Supporting Document: Assessment SOP <i>(Mandatory)</i>	<i>Annexure-9</i>
12.	Any other document you wish to submit:	

Annexure 1: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	• Prepare for nursery propagation • Plant and maintain bamboo saplings • Transplant the saplings • Maintain the saplings	A Bamboo Cultivator is responsible for propagating bamboo saplings in a nursery; transplanting them into the field, and maintaining and harvesting bamboo culms. The individual is also responsible for marketing the harvested bamboos culms	3
Professional and Technical Skills/ Expertise/ Professional Knowledge	• Carry out intercropping • Perform nutrient management • Perform waste management • Administer appropriate emergency procedures • Maintain clean and safe workplace	The job holder is expected to have knowledge to select appropriate bamboo varieties with nutrient requirement, carry out intercropping of the selected crops, follow the recommended practices to prevent canopy exposure, apply the recommended organic or inorganic fertilisers, coordinate with an approved lab for soil analysis, selection of the appropriate fertilisers containing the necessary macro and micronutrients, report details of first aid administered, follow procedures for dealing with accidents, fires and emergencies, use emergency equipment in accordance with manufacturer's specifications, carry out basic safety checks before operation of all tools, implements, and machinery, assess risks prior to performing manual handling jobs, use equipment	3
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• Optimise resource utilisation • Carry out pruning • Carry out weeding • Irrigate bamboo trees • Manage pests and disease • Market bamboo culms	The job holder is expected to select the appropriate tools and implements such as pruner and lopper to prune the bamboo trees, ensure no damage to the bamboo trees, prune the clumps at appropriate intervals, carry out pruning to remove unwanted or dead culms, branches or leaves on bamboo trees, carry out thinning of clumps using the appropriate implements, select the appropriate tools and implements for weeding out unwanted plants, carry out weeding manually	3

		or mechanically, apply mulch or recommended herbicides in the prescribed quantity, dispose the weeds eliminated from the field safely, ascertain the irrigation needs of bamboo trees based on soil moisture and climate, irrigate the bamboo trees with the recommended quantity of water, follow the irrigation schedule as per the stages of growth of bamboo trees, follow the recommended prophylactic measures, select the appropriate treatment according, maintain the record of treatment applied to bamboo trees, identify the symptoms, stage and location of various pests and diseases, remove the bamboo tree parts damaged by pests and disease, select the appropriate time for the sale of harvested bamboo culms, identify the relevant buyers or market.	
Broad Learning Outcomes/Core Skill	• Harvest and transport the bamboo saplings • Select the bamboo variety and site • Prepare the field for bamboo cultivation • Harvest bamboo culms • Carry out post-harvest processing and store culms	The job holder is expected to select a high-yielding, pest and disease-resistant variety of bamboo to grow with cost-effective cultivation practices, ensure the site doesn't experience storms and has access to a reliable source of water, ensure the soil at the site is well-drained, select a site with the appropriate temperature, precipitation and relative humidity, remove all waste materials from the site, apply the recommended treatment to adjust the soil's pH and salinity levels, carry out soil fumigation using the recommended chemicals, carry out deep ploughing to remove shrubs, weeds, rocks, tree roots and stumps from the site, install an appropriate irrigation or fertigation system, collect and transport the harvested bamboo culms appropriately, select an appropriate storage area for storing culms and prepare it, stack culms vertically in the storage area.	3
Responsibility	• Propagating bamboo saplings • Maintenance and harvesting of bamboo culms • Marketing of bamboo culms	A Bamboo Grower is responsible for propagating bamboo saplings in a nursery; transplanting them into the field, and maintaining and harvesting bamboo culms. The individual is also responsible for marketing the harvested bamboos culms.	3

Annexure 2: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Video Recording Equipment	Nos	1
2	N-P-K Fertilizer	bag	1
3	Fawda/ Kudal	Nos	2
4	Shade net	Nos	2
5	Organic manure/ Compost	bag	1
6	Rakes	Nos	2
7	Knapsack sprayer	Nos	1
8	Knife	Nos	2
9	Gumboots	Nos	5
10	Wheel barrow	Nos	1
11	Rubber gloves	Nos	30
12	Khurpi	Nos	6
13	Shovel	Nos	2
14	Soil testing Kit	Nos	1
15	Weeder	Nos	1
16	Bamboo plants/ culms	Nos	10
17	Secateurs	Nos	2
18	Brush cutter	Nos	1
19	Harvesting Saw	Nos	1

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Whiteboard
2. Markers

Annexure 3: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	CAAFE	Sumit Srivastava	General Manager	New Delhi	9889990102	info@caafe.in	
2	Centre for Microfinance	Amit Kumar	Head	Jaipur		amit.kumar@cmfraj.org	
3	Post-Graduation Department of Agriculture	Dr. Randeep Kaur and Dr. Lavleen Kaur	Associate Professor and Assistant Professor	Amritsar	9915305271	lavleenkaur@khalsacollege.edu.in	
4	Cropicon Exim Private Limited	JonnaGunadeep	Founder	Kurnool	6381498558	info@cropicon.co.in	
5	Indian Institute of Plantation Management	Dr. KC Prakash	Assistant Professor	Bengaluru	7619367720	kcp.iipmb@gmail.com	
6	Jagtap Horticulture Pvt Ltd	Shrinkhala Mahobla	HR Manager	Pune	9011032314	hr@jagtaphorticulture.com	
7	PathikAgrihorti Solutions pvt. Ltd	Dr Nirmal Kant Sharma	Director	Karnal	7018436769	pagrihortisolutions@gmail.com	
8	Sam Higginbottom University of Agriculture Technology & Sciences	Dr. NeelamKhore	Professor & Head	Prayagraj	9839588504	neelam.khare@shuats.edu.in	

Annexure 4: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2025-26	2600	50	100	10		
2026-27	2600	50	100	10		
2027-28	2800	50	100	10		

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed

3.0	2024-25	1259	324	313	0	390	112	106	0	3	3	3	0
3.0	2023-24	715	660	655	638	453	400	395	382	0	0	0	0
3.0	2022-23	336	336	336	0	106	106	106	0	0	0	0	0

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1. PMKVY

Content availability for previous versions of qualifications:

☒Participant Handbook ☒Facilitator Guide☐Digital Content ☒Qualification Handbook ☐Any Other:

Languages in which Content is available: Hindi and English

Annexure 5: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
AGR/N6101: Propagate bamboo saplings in the nursery	<i>Prepare for the propagation of bamboo sapling in the nursery</i>	12	15		12
	PC1. select a site for nursery propagation of bamboo saplings, with proximity to the bamboo field with the recommended climatic conditions, adequate exposure to sunlight and access to quality water in the required quantity				
	PC2. select an appropriate method for bamboo sapling cultivation such as planting culm, cutting, tillering, layering, etc.				
	PC3. select an approved vendor of the required planting material and other resources such as planting material, fertilisers, insecticide/ pesticides/ fungicide, tools and implements based on the quality and price				
	PC4. arrange for safe and hygienic transportation and storage of the procured planting material and other resources				
	PC5. treat the planting material appropriately for the common pests and disease before use, to prevent pest and disease during propagation and cultivation				
	PC6. prepare the sunken, raised or level nursery bed as per the requirement, arranging for efficient drainage of water				
	PC 7. Analyse the crop calender				
	<i>Plant and maintain bamboo saplings</i>	10	15		10
	PC8. plant seeds, cuttings or culms at the recommended depth and planting density and provide them immediate care such as water and fertiliser				
	PC9. protect the saplings from pests and disease by applying the recommended pesticides, insecticides or fungicides in the prescribed quantity				
	PC10. check the saplings regularly for healthy growth and apply the recommended organic or inorganic fertilisers in an appropriate quantity				
	PC11. water saplings with the recommended quantity at regular intervals, ensuring no damage to them				
	PC12. protect the saplings from strong winds, overexposure to sunlight				

	and fluctuations in temperature				
	PC13. carry out weeding to remove unwanted plants growing in the nursery bed				
	PC14. clear any waterlogging from the nursery bed				
	<i>Harvest and transport the bamboo saplings</i>	8	10		8
	PC15. check the bamboo saplings to determine they have attained the growth required for being harvested				
	PC16. arrange the required tools, implements and accessories for harvesting the saplings				
	PC17. harvest the saplings, ensuring no damage to them				
	PC18. maintain the harvested saplings under the recommended temperature and humidity and in hygienic conditions				
	PC19. arrange an appropriate mode of transport and transport bamboo saplings to the field safely, maintaining the required level of moisture				
	Total Marks	30	40	-	30
AGR/N6103: Select the bamboo variety and site, and prepare the field	<i>Select the bamboo variety and site</i>	10	15		10
	PC1. select a high-yielding, pest and disease-resistant variety of bamboo to grow with cost-effective cultivation practices				
	PC2. select a site with the appropriate temperature, precipitation and relative humidity recommended for the optimum growth of the selected bamboo variety, ensuring the site does not experience waterlogging				
	PC3. ensure the site doesn't experience storms and has access to a reliable source of water for irrigation, affordable labour and relevant markets for marketing the produce				
	PC4. ensure the soil at the site is well-drained and rich in organic matters				
	<i>Prepare the field for bamboo cultivation</i>	20	25		20
	PC5. remove all waste materials from the site				
	PC6. carry out deep ploughing to remove shrubs, weeds, rocks, tree roots and stumps from the site				
	PC7. carry out soil fumigation using the recommended chemicals to disinfect the soil and water it thoroughly with the recommended quantity to wash away the disinfectants				
	PC8. sample the field soil and coordinate with an approved lab to determine its macro and micronutrients needs				
	PC9. apply the prescribed organic and inorganic fertilisers such as				

	compost, peat moss or Farm Yard Manure (FYM) to the soil in the dose recommended by the lab to improve its fertility and loosen it				
	PC10. apply the recommended treatment such as lime or gypsum as per the lab's recommendation to adjust the soil's pH and salinity levels				
	PC11. prepare holes of the recommended depth and dimensions at appropriate spacing for planting bamboo saplings of the selected variety				
	PC12. create drains in the field for the effective drainage of water				
	PC13. install an appropriate irrigation or fertigation system in the field				
	PC14. erect fences around the field to protect it from stray animals and other external threats				
	Total Marks	30	40		30
AGR/N6104: Transplant and maintain the bamboo saplings	<i>Transplant the saplings</i>	<i>14</i>	<i>18</i>		<i>16</i>
	PC1. acclimatise the bamboo saplings before being transplanted in the field				
	PC2. select an appropriate time of the day for transplanting saplings to ensure their survival				
	PC3. transplant the bamboo saplings in the field using the appropriate tools and implements, maintaining the recommended planting depth and density				
	PC4. water the saplings with the recommended quantity and apply the recommended fertiliser in an appropriate quantity to provide immediate care after transplantation				
	<i>Maintain the saplings</i>	<i>16</i>	<i>22</i>		<i>14</i>
	PC5. protect saplings from strong winds and direct sunlight during the early stages of their growth				
	PC6. irrigate the saplings according to the stages of their growth, avoiding over-irrigation to prevent root rot				
	PC7. monitor the saplings for signs of pest and disease and apply the recommended treatment in an appropriate quantity				
	PC8. replace the unhealthy or dead saplings with the healthy ones				
	Total Marks	30	40	-	30
AGR/N6105: Carry out pruning and weeding in bamboo crop	<i>Carry out pruning</i>	<i>16</i>	<i>18</i>		<i>14</i>
	PC1. select the appropriate tools and implements such as pruner and lopper to prune the bamboo trees				
	PC2. carry out pruning to remove unwanted or dead culms, branches or leaves on bamboo trees following the recommended pruning method				

	according to the stages of growth of bamboo trees				
	PC3. ensure no damage to the bamboo trees during pruning				
	PC4. apply the recommended chemicals to the pruned areas on the bamboo trees				
	PC5. remove the pruned tree parts and use them to prepare compost				
	PC6. remove unwanted, old and rotting clumps				
	PC7. prune the clumps at appropriate intervals and as per the requirement to prevent clump congestion				
	PC8. carry out thinning of clumps using the appropriate implements to provide space for new shoots to emerge				
	<i>Carry out weeding</i>	14	22		16
	PC9. select the appropriate tools and implements for weeding out unwanted plants growing in the bamboo field				
	PC10. carry out weeding manually or mechanically, as appropriate, without leaving weed roots in the field				
	PC11. apply mulch or recommended herbicides in the prescribed quantity to prevent the growth of weeds				
	PC12. dispose the weeds eliminated from the field safely				
	Total Marks	30	40	-	30
AGR/N6106: Carry out irrigation, nutrient management and intercropping	<i>Irrigate bamboo trees</i>	10	12		8
	PC1. ascertain the irrigation needs of bamboo trees based on the soil moisture and climate				
	PC2. irrigate the bamboo trees with the recommended quantity of water following an appropriate irrigation method				
	PC3. follow the irrigation schedule as per the stages of growth of bamboo trees, avoiding over and under irrigation				
	<i>Carry out intercropping</i>	10	14		12
	PC4. select appropriate vegetable or cash crops with nutrient requirement different from the bamboo crop for intercropping to increase the rate of crop production				
	PC5. carry out intercropping of the selected crops with the bamboo crop				
	PC6. maintain the recommended planting density while intercropping to allow for optimum growth of intercropped vegetables/ crops				
	PC7. trim the culms on bamboo plants as per the requirement to ensure the intercropped vegetables/ crops receive the required exposure to sunlight				

	PC8. follow the recommended practices to prevent canopy exposure, loss of soil moisture through evaporation and competition from weeds and other vegetation				
	PC9. apply the recommended organic or inorganic fertilisers in the field in an appropriate quantity				
	<i>Perform nutrient management</i>	10	14		10
	PC10. coordinate with an approved lab for soil analysis and determine the need of adding macro and micronutrients to it				
	PC11. select the appropriate fertilisers containing the necessary macro and micronutrients as prescribed by the lab				
	PC12. apply the selected organic and inorganic fertilisers to the soil for the optimum growth of bamboo trees				
	Total Marks	30	40	-	30
AGR/N6107: Carry out integrated pest and disease management for bamboo crop	<i>Manage pests and disease</i>	14	20		14
	PC1. follow the recommended prophylactic measures to protect the bamboo trees from common pests and diseases such as the adoption of natural enemies of bamboo pests				
	PC2. identify the symptoms, stage and location of various pests and diseases in bamboo trees along with the extent of damage				
	PC3. select the appropriate treatment according to the identified pest and disease				
	PC4. apply the selected treatment using the recommended personal protective equipment (PPE) as per the prescription				
	PC5. maintain the record of treatment applied to bamboo trees				
	PC6. remove the bamboo tree parts damaged by pests and disease and dispose them safely in an environment-friendly manner				
	<i>Optimise resource utilisation</i>	8	10		8
	PC7. optimise the usage of water and other resources in various tasks and processes				
	PC8. plug water leakages to prevent its wastage				
	<i>Perform waste management</i>	8	10		8
	PC9. segregate waste into appropriate categories				
	PC10. recycle the recyclable waste appropriately and dispose the non-recyclable waste in an environment-friendly manner				
	Total Marks	30	40	-	30
AGR/N6108: Carry out harvesting, post-harvest	<i>Harvest bamboo culms</i>	10	12		8
	PC1. maintain the bamboo trees for the recommended duration and				

processing and marketing activities of bamboo culms	check the bamboo culms to ensure their readiness for being harvested				
	PC2. select an appropriate season for harvesting bamboo culms				
	PC3. arrange the necessary hand or machine tools and implements for harvesting bamboo culms and disinfect them using the approved disinfectants				
	PC4. remove branches extending from the lower nodes of the mature culms to allow convenient harvesting and extraction				
	PC5. harvest mature bamboo culms appropriately using the relevant tools and implements, ensuring no damage to young culms and rhizomes on bamboo trees				
	PC6. harvest edible bamboo shoots at the right stage for culinary purposes				
	PC7.remove old or dead culms to encourage new growth and maintain plant health				
	<i>Carry out post-harvest processing and store culms</i>	8	12		10
	PC8.treat harvested bamboo to prevent cracking or pest infestations				
	PC9. collect and transport the harvested bamboo culms appropriately to avoid scratches or injury to their epidermal layer				
	PC10. undertake air drying of the harvested bamboo culms				
	PC11.select an appropriate storage area for storing culms and prepare it by applying the necessary treatment to remove pests, termites and disease				
	PC12. stack culms vertically in the storage area				
	<i>Market bamboo culms</i>	12	16		12
	PC13. select the appropriate time for the sale of harvested bamboo culms considering their seasonal demand				
	PC14. identify the relevant buyers or market such as eMandi and local traders for the harvested bamboo culms				
	PC15. build relationships with industries, retailers, or end-users to establish sales channels				
	PC16. Promote bamboo's eco-friendly and renewable properties to attract environmentally conscious consumers				
	PC17. negotiate the price with the buyer(s)				
	PC18. arrange for transportation of bamboo culms to the buyer(s) in an appropriate and safe mode of transport				
	PC19. process the payment using the buyer-preferred e-payment method				

	PC20. maintain the manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application				
	Total Marks	30	40	-	30
AGR/N9903: Maintain health and safety at the workplace	<i>Maintain personal hygiene</i>	10	5	-	10
	PC1. wash hands, legs and face with soap/alcohol-based sanitizer at reasonable intervals				
	PC2. wash the worn clothes with soap and sun-dry before use next time				
	PC3. ensure the face is covered with mask or three layers of cloth-piece				
	PC4. follow the workplace sanitisation norms including distancing from sick people				
	<i>Maintain clean and safe workplace</i>	15	15		15
	PC5. carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards to the supervisor				
	PC6. wear appropriate Personal Protective Equipment (PPE) while performing work in accordance with the workplace policy				
	PC7. follow the instructions mentioned on the labels of chemicals/pesticides/fumigants etc. to avoid hazards				
	PC8. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practices				
	PC9. sanitize equipment, tools and machinery before and after use				
	PC10. use equipment and materials safely and correctly and return the same to designated storage after use				
	PC11. dispose waste safely and correctly in the designated area				
	PC12. recognize risks to bystanders and take required action to reduce the risks				
	PC13. work in a manner which minimizes environmental damage, ensuring all procedures and instructions for controlling risks are followed				
	PC14. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger				
	PC15. follow government / workplace advisories in case of outbreak of any disease/disaster				
	<i>Administer appropriate emergency procedures</i>	15	5		10
	PC16. follow procedures for dealing with accidents, fires and				

	emergencies, including communicating location and directions to the location of emergency, as per the workplace requirements				
	PC17. use emergency equipment in accordance with manufacturer's specifications and workplace requirements				
	PC18. report provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques				
	PC19. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate				
	PC20. report details of first aid administered in accordance with workplace procedures				
	Total Marks	40	25	-	35
DGT/VSQ/N0101: Employability Skills (30 Hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC1. understand the significance of employability skills in meeting the job requirements				
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices				
	<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
	PC3. explain 21st Century Skills such as Self- Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.				
	<i>Basic English Skills</i>	2	3	-	-
	PC4. speak with others using some basic English phrases or sentences				
	<i>Communication Skills</i>	1	1	-	-
	PC5. follow good manners while communicating with others				
	PC6. work with others in a team				
	<i>Diversity & Inclusion</i>	1	1	-	-
	PC7. communicate and behave appropriately with all genders and PwD				
	PC8. report any issues related to sexual harassment				
	<i>Financial and Legal Literacy</i>	3	4	-	-
	PC9. use various financial products and services safely and securely				
	PC10. calculate income, expenses, savings etc.				
	PC11. approach the concerned authorities for any exploitation as per legal rights and laws				
	<i>Essential Digital Skills</i>	4	6	-	-

	PC12. operate digital devices and use its features and applications securely and safely				
	PC13. use internet and social media platforms securely and safely				
	<i>Entrepreneurship</i>	3	5	-	-
	PC14. identify and assess opportunities for potential business				
	PC15. identify sources for arranging money and associated financial and legal challenges				
	<i>Customer Service</i>	2	2	-	-
	PC16. identify different types of customers				
	PC17. identify customer needs and address them appropriately				
	PC18. follow appropriate hygiene and grooming standards				
	<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
	PC19. create a basic biodata				
	PC20. search for suitable jobs and apply				
	PC21. identify and register apprenticeship opportunities as per requirement				
	Total Marks	20	30	-	
Grand Total		270	335		245

Annexure 6: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. 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 empanelled 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 ground through qualified and ToA certified assessors.

While it is important that an individual has adequate knowledge and skills to perform a specific task, weight age for different aspects for assessment are 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 assessment; ASCI will certify the learners/candidates

2. Testing Environment

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

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

- Multilingual assessments (ASCI is conducting 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 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 training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- 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 practical 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 question, etc. which will test the trainee on his theoretical knowledge of the subject.
- The theory, practical and viva assessments will be carried out on same day. In case of more number of candidates, 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 usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling job situation

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

3. 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, behavioral traits and domain knowledge.

Theoretical Knowledge - Item constructs and types are determined by 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 which 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 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 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, do's and don'ts, subjective questions to check understanding of practical tasks.

Assessor has to go through orientation program organized by Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. Assessor shall be given a NOS and PC level overview of each QP as applicable. 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 which will maintain standardization of marking scheme.

4. Type of Evidence and Evidence Gathering Protocol:

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

- Geo Tagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidences (photos and videos) to the assessor one day prior to the assessment. List is mentioned below:
 - Signed Attendance sheet
 - Assessor feedback sheet
 - Candidate feedback sheet
 - Assessment checklist for assessor
 - Candidate Aadhar/ID card verification
 - Pictures of 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, Technical assistant popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
- To validate their work on the day of assessment, regular calls and video calls are done.
- On-boarding and training of assessor and proctor is done on timely basis to ensure that quality of the assessment should be maintained.
- Training covers the understanding of QP, NSQF level, NOS and assessment structure

5. *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 check on assessment quality and ensure assessment is carried out in fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure event is over by what time and the documentation is done in proper manner or not.
- TP Calling: To keep check on malpractice activity, independent audit team calls to TP on recorded line to take confirmation if there was any malpractice activity observed in assessment on part of AA/SSC team. If calls are not connected, email is send to TP Spoc for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on real time basis and highlights any issue like, Students sitting idle/trainer allowed for helping out candidates during assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and do surprise audit for assessment process carried out by ground team.
- Geo Tagging: On day of assessment, each technical spoc is required to login in our internal app which is Geo tagged. Any deviation with centre address needs to be highlighted to assessment team on real-time basis.

Method for assessment documentation, archiving, and Access:

- ASCI has fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks forms the basis of the results and encrypted files generated to avoid data manipulation. All responses captured and stored in System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can be generated.
- Maker Checker concept: 1 person prepares results and other audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All soft copy of documents is received from the on-ground tech team over mail. The same are downloaded by our internal backend team and saved in Repository. The repository consists of scheme wise folders. These scheme wise folders have 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 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 conclusion of project or scheme)

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf