

## **NSQF QUALIFICATION FILE GUIDANCE**

Version 6: Draft of 23 May 2017

**NSDA Reference**

*To be added by NSDA*

### **CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE**

**Name and address of submitting body:**

Directorate General of Training (DGT),  
Ministry of Skill Development & Entrepreneurship (MoSDE)  
Shram Shakti Bhawan, Rafi Marg,  
New Delhi

**Name and contact details of individual dealing with the submission**

**Name:** Smt Sandhya Salwan

**Position in the organisation:** Director (SDI)

**Address if different from above:** Same as Above

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### **List of documents submitted in support of the Qualifications File**

1. Qualification document -Packaging technology of fruits and vegetables
2. Curriculum for Packaging technology of fruits and vegetables under Food processing and preservation Sector for Modular Employable Scheme (MES)(Annexure 1)
3. List of number of trainees of trained under MES in 2015-16 & 2016-17. (Annexure 2)
4. List of candidates' placed for this course in 2016-17. (Annexure 3)
5. (Annexure 4)
6. List of assessing bodies in Food Processing and Preservation Sector (Annexure 5).

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### 7. SUMMARY

<b>Qualification Title</b>	Packaging technology of fruits and vegetables
<b>Qualification Code</b>	FPP-619
<b>Nature and purpose of the qualification</b>	NCVT Certificate in job role to occupation involving the preservation and packaging of fruits and vegetables industries. Purpose of the Qualification is fresh employments in fruits and vegetables processing industries and RPL for the candidates who are already working in the fruits and vegetables processing industries.
<b>Body/bodies which will award the qualification</b>	National Council for Vocational Training (NCVT)
<b>Body which will accredit providers to offer courses leading to the qualification</b>	GOI Ministries and State departments who have adopted MES qualifications accredit training providers for their programs and schemes (only in case of SDIS schemes Training providers accredited by States on behalf of NCVT).
<b>Body/bodies which will carry out assessment of learners</b>	Independent Agency as Assessing Bodies (ABs) empanelled by DGT
<b>Occupation(s) to which the qualification gives access</b>	<b>PACKAGING OPERATOR IN F&amp;V PLANT</b>
<b>Licensing requirements</b>	-NA-
<b>Level of the qualification in the NSQF</b>	Level 3
<b>NCO Code Reference</b>	7514.9900, 9321.0101 NCO occupation : Fruits, Vegetables and Related Preservers , Packer, Hand
<b>Anticipated volume of training/learning required to complete the qualification</b>	450 Hours
<b>Entry requirements and/or recommendations</b>	Passed 12 <sup>th</sup> class examination & 18 years of age <b>As per skill sets of the course and module 12 class qualification is required</b>
<b>Progression from the qualification</b>	<b>ASST. PRIMARY/SECONDARY PACKAGING TECHNICIAN</b>
<b>Planned arrangements for the Recognition of Prior learning (RPL)</b>	YES
<b>International comparability where known</b>	-NA-
<b>Date of planned review of the qualification.</b>	June 2019(2 years after approval of the Qualification)

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<b>Formal structure of the qualification</b>			
<b>Title of component and identification code.</b>	<b>Mandatory/Optional</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
1: Perform and practice the Basic Food regulation, food safety standards, safety precautions and hygienic standards.	M	90	3
2: Prepare fruits and vegetables for packaging.	M	160	3
3: To have the knowledge, cleaning, fault and maintenance of machinery used in fruits and vegetables processing industries.	M	100	3
<b>SOFT &amp; ENTREPRENEURSHIP SKILLS</b>			
1 Recognize & comply safe working practices, environment regulation and housekeeping.	M	25	2
2 Perform and practice soft skills, OSH&E, working with Computer and communicate with required clarity.	M	25	2
3. Demonstrate knowledge of concept and principles of basic arithmetic calculation and apply knowledge of specific area to perform practical operations	M	25	2
4 Explain time management, entrepreneurship and manage/organize related task in day to day work for personal & societal growth	M	25	2
Total		450	

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum Document or a Qualification Pack.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

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## **SECTION 1** **ASSESSMENT**

### **Body/Bodies which will carry out assessment:**

As per the guidelines approved for the SDI, DGT empanelled Assessing bodies such as Ayes Infotech Private Limited, Gauri food crafts ITC, MS certification services Pvt Ltd, Shri Guru Hargovind Society, Aims Education Society, Rajiv Gandhi education Foundation will carry out the assessment. The complete list of Assessing bodies in Food Processing and Preservation Sector has been enclosed as an annexure to the Q file.

### **How will RPL assessment be managed and who will carry it out?**

- Testing centres are registered by States on the same line as for VTPs. Candidates desiring to get the skills certified have to apply online or through Testing Centres. Assessing Bodies/assessors will be allotted automatically by the IT application. This facility is being provided on the web-portal of SDI scheme. Until then the following procedure will be adopted for direct assessment:
- Assessing Bodies are responsible for registration of candidates for testing. It may do so directly or through its designated centres or VTPs.
- Candidates are allowed to get registered themselves either directly on the portal or through Testing Centre concerned.
- Assessing Bodies apply online list of candidates to be assessed to respective RDAT who, in turn, acknowledge the same by allotting ABN. RDAT make schedule of trade test, including date, time, list of candidates and location of designated Testing Centre under intimation to AB.
- AB inform in advance about the courses, candidates list, and requirement of raw material to Testing Centre in advance.
- ABs are responsible for preparation of question papers both for theory and practical test based on the approved criteria etc.

**Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.**

### **Criteria for selection of Assessment body**

#### Minimum Eligibility Criteria

- The applicant shall be a legal entity, registered in India.
- The applicant should have in last two years carried out competency / skill assessment for minimum 1000 persons or should have trained minimum 1000 persons and got tested by some agencies such as NCVT, Sector Skill Council, State, board/ council and reputed industry Association. Organizations having experience in testing of competencies would be preferred.
- In case more number of applications is received, preference will be given to those organizations that have trained/assessed larger number of persons.
- The applicant is not a Training Provider (TP) in the same sector and in same State, but it can be TP in other States, other Sectors or other scheme.
- The applicant shall have access to technically qualified personnel of repute and integrity in different industrial trades and technology.
- The applicant shall develop dedicated human resource for handling the processes in assessment process.
- The applicant shall declare its linkages with other organization(s), if any to ensure independence and avoid any conflict of interest.
- Institutions/ Firms blacklisted by any Government Department shall not be considered in this RFP.
- The Applicant shall provide the information and supporting documents towards their claims.
- Initially provisional empanelment will be awarded to the organizations based on the evaluation of eligibility of the Assessing Body based on the criteria.
- Based on the module and sector that will be handled by the assessor, the assessing body shall send its assessor for competency evaluation in the institutions which will be notified by DGT time to time. The assessor will be assessed to ascertain the competency to carry out competency based assessment.
- Final empanelment would be granted subject to the Assessing Body fulfilling the following

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conditions of getting the competencies of 2 assessors of each module per State evaluated in the institutes notified by the DGT. Testing charges for evaluating the competencies of the assessors will be borne by the Assessing Bodies.

### (1) Assessment process: ( Mechanism of Assessment )

The assessment process aims to test and certify the competency of the persons through Assessing Bodies who seek certification of their skills acquired informally or the persons who have been trained at the registered TPs. The competency assessment of the candidate is being done the Assessor Competency Evaluation (ACE) qualified assessor of the independent Assessing Bodies (AB) which is not involved in training delivery, to ensure an impartial assessment. ACE is conducted to evaluate the competency of the assessor. In the assessment process, identification of competency, ways to measure the competency and deciding on the type of evidence that has to be collected are the responsibility of the Assessing bodies whereas administering the assessment and collecting the evidence and reporting the results are the responsibility of the assessors. The assessment process consists of following components:

#### Theory Test:

- It must assess the knowledge which is essential for a person to do the job. Without this knowledge, the person cannot be able to do the job.
- The questions shall be normally of objective type involving selection of correct response rather than writing sentences.
- The question paper should contain sketches/ diagrams/ photographs/ drawing to overcome the problems of reading comprehension.
- The test shall be of short duration.

#### Practical Test:

It shall be able to test:

- Manipulative skills to handle tools and equipment.
- Speed in doing work.
- Accuracy maintained
- Quality in workmanship.
- Sequence of performance.
- Economical use of material.
- Neatness & housekeeping.
- All the competencies prescribed in the course curriculum.

The Assessment Parameters adopted during assessment:

- Knowledge of equipment, limitation of use of tools and equipment, and methods & procedure.
- Understanding of functioning of equipment & tool, criteria to be used in selecting tools for given job, and the process of measurement.
- Skill in finishing to required measurement, handling measurement & calculations, handling tools and equipment with ease, finishing neatly.
- Abilities to take corrective steps, use correct work habits, take measurements, complete the job within stipulated time, and adopt safe practices.
- Attitude towards the work, accurate & precise work and co-workers and supervisor.

#### (1) Duration of Test:

The duration of test vary according to the task. Theory test shall of 1 hour duration and practical test for engineering trade shall be 6 to 8 hours minimum and non-engineering it shall be of 4 hours minimum. Assessing Bodies while preparing practical test shall ensure that candidate shall be tested on all the competencies prescribed in the course module.

The marking pattern and distribution of marks for the qualification are as under:

Terminal competency	Maximum marks
Application of knowledge	30

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Care for tools & equipment	15
Economic use of materials	15
Safety consciousness	10
Speed	10
Accuracy	15
Quality of workmanship	20
Amount of work	15
No. of attempts	10
Attitude	10
Total maximum marks for Practical	150
Maximum marks for theory	50

### (2) Minimum pass mark:

Minimum passing marks for Practical is 60%

Minimum pass marks for theory is 40%

### (3) Testing and certifications process for the course:

#### Pre- Assessment

- RDAT allot batches to the Assessing Bodies on rotational basis depending on the presence of assessing body in that region sector wise and the assessing body in coordination with VTP and assessor should confirm and schedule the assessment.
- The Assessing Body confirm the date of assessment in consultation with VTP and communicate to the RDAT/State.
- The Assessing Body forms a panel of ACE qualified assessors of high repute and integrity SDIS sector wise and location wise.
- The assessment of the candidates is done by the Assessing Bodies in designated Testing Centre (TC). The Testing Centre where the assessment is carried out and Testing Centre can be VTP also. The Assessing Body select the TC based on the location, accessibility and the infrastructure facilities available for conducting the test.
- The Assessing Body provide details of selected TC along with skill areas in which assessment can be done at the TC, to the RDAT and respective States/UTs.
- The Assessing Bodies depute ACE qualified assessors for assessments whose details are furnished by Assessing Bodies to DGT in advance.
- Assessing Body has to communicate to the Testing Centre following:
  - Details of the candidates to appear for assessment in various MES courses.
  - Details of Assessors selected with their contact details.
  - Requirement of infrastructure, raw material etc.
  - Testing charges to be reimbursed to Testing Centre

#### Preparation of assessment tools and prerequisites:

- The assessment tools contain components for testing the knowledge, application of knowledge and demonstration of skill. The knowledge test is objective paper based test or short structured questions based. The application of knowledge is verified based on questioning or seeking response for a case. Demonstration of skill is verified based on practical demonstration by the candidate by using competency checklist.
- The type of assessment tools to be used for assessment are to be prepared in advance by the assessing body in accordance to the guidelines as prescribed below:
  - Define the performance objective – This is based on the course objectives and competency in workplace as prescribed by MES curriculum. The written tests and practical tests assess all the competencies mentioned in course curriculum.
  - In case of practical test, the operations which are to be observed in case of process test (how a particular task is being carried out) are clearly mentioned and the specifications of the final product in case of product test (the task in itself).
  - List of tools, infrastructure, and equipment to carry out the assessment are prepared based on

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the test instruments that are planned to be used.

- Written directions are given to the candidates before the task is attempted.
- Scoring system, observational checklist and rating scale is prepared for each competency which is going to be assessed.
- The checklist and rating scale have sufficient space to record observations.

### **Pre-assessment activities for Assessor at the Testing Centre**

- Verification of student credentials: The assessor check the application form submitted by the candidates and verify the photo pasted on the forms with candidates who are taking assessment in accordance with checklist
- Verification of testing centre for adequate infrastructure, tools and equipment: The assessor verifies the availability of infrastructure, tools and equipment for carrying out both theory and practical assessments. The minimum requirement prescribed under the MES modules is used as benchmark.
- Verification of qualification of instructor: The assessor verifies the qualification and experience of the instructors in the training centre
- Attendance verification: The assessor checks the attendance register of candidates and instructors until the time biometric attendance system is put in place. Once the biometric attendance system is in place, the biometric attendance of assessors along with that of trainees/candidates has to be captured during the assessment at the start as well as end of theory and practical test.
- Attendance during assessment: The assessor takes the attendance of all the students who appear for assessment after the successful verification of the student credentials and before the start of the assessment. The assessor also provides his/her attendance during start and end of the practical and theory test.
- Pre-Assessment checklist: The assessor fill the pre-assessment checklist along with the start time and end time of assessment after verifying all the above tasks as per checklist.
- Verification of the documents related test carried out by VTP/ Testing Centre (TC) for candidates who were not able to produce document in support of having passed the qualification.

### **Assessment activities**

- Before the start of assessment, read out the instructions to the students.
- The written test & practical test is for fixed duration as prescribed.
- It is ensured that individual attention is given to all the candidates during the practical test.
- The assessor takes photographs during the assessment process of all the students in the testing centre, the students during theory and practical tests, practical lab/workshop showing the equipment to be used for assessment, the assessor along with the students appearing for the assessment.

### **Post-assessment activities**

- The assessor consolidates all the theory and practical test papers and ensures that all the mandatory information is filled. The total score for each student should be calculated and recorded in Result sheet.
- The assessor send the attendance sheet, Result sheet, answer papers by courier/post to the assessing body immediately after the completion of assessment
- Uploading outcome of the assessment and photos in portal by assessing body
- Assessing body upload the results within one week of the assessment date.
- Photos taken by the assessors during assessment are sent to respective RDATs through e-mail only. Non dispatch of photos of assessment to RDAT makes assessment void. Re-assessment of such batch is done by the Assessing Bodies on their own expenses.
- Details of assessors are emailed to RDAT at the time of uploading the outcome of the assessment. Outcome of the assessment is not accepted in case details of assessors are not emailed to respective RDAT. This procedure is applicable till automatic selection of assessors is provided on the web-portal of SDIS.
- Maintaining assessment records

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- Publishing of results and Certificate issue
- RDAT verifies the outcome of the assessment, details of assessors, photos and print and sign the certificates for successful candidates and send it to the respective candidates. In case of direct candidate's assessment, the Certificates are sent to the Assessing Body.
- Certificates which will be issued carry photograph of the trainee, name of VTP, start date & end date of training and duration of training once the systems for the same are put in place.

The certificate is issued under the aegis of NCVT. All the communications are done through portal.

Please attach any documents giving further information about assessment and/or RPL.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

### ASSESSMENT EVIDENCE

**Complete a grid for each component as listed in “Formal structure of the the qualification” in the Summary.**

*NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – ie Learning Outcomes to be assessed, assessment criteria and the means of assessment.*



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### Title of Component:

Outcomes to be assessed	Assessment criteria for the outcome	Means of Assessment
1. Perform and practice the Basic Food regulation, food safety standards, safety precautions and hygienic standards.	<ul style="list-style-type: none"> <li>✓ Follow safety precautions</li> <li>✓ Maintain the required food regulation and standards such as APEDA, AGMARK, Global GAP</li> <li>✓ Maintain food safety standards such as HACCP</li> <li>✓ Follow quality standards for grapes, mango, pomegranates, tomato etc</li> </ul>	<p>Practical Test Theory Test</p> <p>Practical Test</p> <p>Practical Test</p>
2. Prepare fruits and vegetables for packaging.	<ul style="list-style-type: none"> <li>✓ Select fresh fruits and vegetables</li> <li>✓ Sort and grade and clean fruits and vegetables</li> <li>✓ Check the physical, chemical qualities/parameters of fruits and vegetables</li> <li>✓ Carry out the pre-cooling of fruits and vegetables</li> <li>✓ Carry out various activities like wax coating, for the preservation of fruits and vegetables</li> <li>✓ Use of chemicals for ripening and enhancing shelf life of fruits and vegetables</li> <li>✓ Follow various storage systems and structures such as Ethylene, and oxygen scavengers, surface sterilization, MAP, frozen and cold storage</li> <li>✓ Follow about the packaging of fruits and vegetables</li> <li>✓ Perform the loading (with the help of hand trolley, tray lifters/crane), Logistics and transportation of fruits and vegetables</li> <li>✓ waste disposal</li> <li>✓ Check the Physiological disorders like chilling injury of fruits</li> </ul>	<p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p> <p>Theory Test</p> <p>Theory Test</p> <p>Theory Test</p> <p>Theory Test</p> <p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p>

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<p>3. To have the knowledge, cleaning, fault and maintenance of machinery used in fruits and vegetables processing industries.</p>	<ul style="list-style-type: none"> <li>✓ Identify all part and accessories of machinery.</li> <li>✓ Use of cleaning and sanitizing agents</li> <li>✓ Cleaning (CIP, Clean-out-of-place, Manual cleaning), sanitization and assembling of the machinery.</li> <li>• Plan and operate the machinery.</li> <li>• Identify basic faults of machinery and rectify.</li> <li>• Carry out maintenance of machinery.</li> <li>✓ Submit reports on visits of CAP unit, vapour heat treatment plant, commercial packaging house (grape, mango, pomegranate, banana), commercial storage structures (Onion, garlic, potato)</li> </ul>	<p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p> <p>Practical Test</p>
<p><b>SOFT &amp; ENTREPRENURESHIP SKILLS</b></p>		
<p>5. Recognize &amp; comply safe working practices, environment aspect and housekeeping</p>	<ul style="list-style-type: none"> <li>• Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements and according to site policy.</li> <li>• Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures.</li> <li>• Report supervisor/ Competent of authority in the event of accident or sickness of any staff and record accident details correctly according to site accident/injury procedures.</li> <li>• Identify Personal Protective Equipment (PPE) and</li> </ul>	<p>PRACTICAL TEST</p> <p>PRACTICAL TEST</p> <p>THEORY TEST</p> <p>PRACTICAL TEST</p>

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	<p>use the same as per related working environment.</p> <ul style="list-style-type: none"> <li>• Identify basic first aid and use them under different circumstances.</li> <li>• Take opportunities to use energy and materials in an environmentally friendly manner</li> <li>• Avoid waste and dispose waste as per procedure</li> <li>• Recognize different components of 5S and apply the same in the working environment.</li> </ul>	<p>PRACTICAL TEST</p> <p>PRACTICAL TEST</p> <p>PRACTICAL TEST</p> <p>THEORY TEST</p>
<p>6. Perform and practice soft skills, working with Computer and communicate with required clarity.</p>	<ul style="list-style-type: none"> <li>• Recognize &amp; practice soft skills in day to day work.</li> <li>• Conduct appropriate discussions with within the team and report to higher authority.</li> <li>• Present facts and circumstances and use appropriate terminology related to work.</li> <li>• Conduct written communication.</li> <li>• Use computers and access internet for day to day activity</li> </ul>	<p>THEORY TEST</p> <p>PRACTICAL TEST</p> <p>PRACTICAL TEST</p> <p>THEORY TEST</p> <p>PRACTICAL TEST</p>
<p>7. Demonstrate knowledge of concept and principles of basic arithmetic calculation, co-ordinate system and apply knowledge of specific area to perform practical operations.</p>	<ul style="list-style-type: none"> <li>• Apply basic arithmetic calculations for arriving dimensional parameters as per drawing.</li> <li>• Use co-ordinate system for part programming.</li> </ul>	<p>THEORY TEST</p> <p>THEORY TEST</p>
<p>8. Explain time management, entrepreneurship and manage/organize related</p>	<ul style="list-style-type: none"> <li>• As certain appropriate time for the assigned task.</li> <li>• Execute the assigned task within time frame.</li> <li>• Manage own work within specified time.</li> <li>• Explain importance &amp; factors affect the</li> </ul>	<p>PRACTICAL TEST</p> <p>PRACTICAL TEST</p> <p>PRACTICAL TEST</p> <p>THEORY TEST</p>

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	<p>development of entrepreneurship.</p> <ul style="list-style-type: none"><li>• Identify service providers for developing Entrepreneur/business establishment.</li></ul>	PRACTICAL TEST
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### **Means of assessment 1**

The assessment comprise of

- Theory Examination MCQ, VIVA Voce
- Practical assessment Role plays, Demonstration

### **Pass/Fail**

The trainee is judged as pass in the qualification if minimum passing marks is obtained in each test i.e Theory and Practical.

Minimum pass mark:

Minimum passing marks for Practical is 60%

Minimum pass marks for theory is 40%

## **SECTION 2**

### **EVIDENCE OF LEVEL**

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### OPTION A

Title/Name of qualification/component: Packaging technology of fruits and vegetables		Level: 3	
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Process	The trainee handles the preservation and packaging of fruits and vegetables, involving predictable situation along with the required housekeeping and safety measures.	The job requires the limited range of activities routine and predictable like assisting production and quality Officer/ Manager in maintaining the fruits and vegetables organisation in an established method. Using knowledge to maintain the house keeping and safety measure in the organisation. Hence, it qualifies as a Level 3 role .Since it does not involve several choices to be made even in a familiar Context, the role does not qualify for Level	3
Professional knowledge	The trainee knows about cleaning and sanitizing agents, quality standards, chemicals for ripening and enhancing shelf life, storage, packaging, and loading of fruits and vegetables. The trainee also acquires the knowledge of safety gadgets, and first aid as well as the knowledge of cleanliness.	The job holder understands the basic facts, process and principles involved in his job role during packaging For Examples: - Basics of cleaning and sanitizing agents, quality standards, chemicals for ripening and enhancing shelf life, physiological disorders, food regulation and standards, Logistics, various storage system and quality standards of fruits and vegetables. Hence, it qualifies as a Level 3 role .Since it does not involve several choices to be made even in a familiar Context, the role does not qualify for Level	3
Professional skill	The trainee applies the skill in carrying out various activities for the preservation and packaging of fruits and vegetables, in a narrow range of applications. The trainee demonstrates the skills in cleaning, sanitization and assembling of food processing machineries, selecting,	The job role only includes prepare the fruits and vegetables and its products for packaging. For Example: - selecting, sorting and grading fruits of vegetables, and carrying out preservation activities assembling of food	3

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Title/Name of qualification/component: Packaging technology of fruits and vegetables		Level: 3	
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
	sorting and grading of fruits and vegetables, and carrying out preservation activities. The trainee also identifies and maintains food processing machineries.	processing machineries, packaging, loading and transportation. Also identifies and maintains food processing machineries.	
Core skill	The trainee, in general, maintains hygiene, demonstrates the ability to receive and transmit written and oral messages with minimum required clarity, perform basic arithmetic and algebraic calculations, carry out personal banking, and understand social, and natural environment.	The job holder will be able to prepare and present financial data, can do basic operations of arithmetic. Can operate Internet to communicate with the suppliers and consumers for marketing. For example: - Conduct appropriate discussions with within the team and report to higher authority. Conduct written communication. Use computers and access internet for day to day activity. Apply basic arithmetic and algebraic calculations for arriving dimensional parameters as per drawing. Manage own work within specified time like personal banking and natural environment. Hence, it qualifies as a Level 3 role. Since it does not involve several choices to be made even in a familiar Context, the role does not qualify for Level 4.	3
Responsibility	The trainee handles the preservation and packaging of fruits and vegetables, under close supervision with some responsibility for own work within defined limit. The trainee has the responsibility for a limited range of activities.	The job holder works under the supervision of his superiors and is responsible for his own limited work assigned like to assist the production and quality control officer in fruits and vegetables industries as directed by his/her superiors. For example: Prepare the fruits and vegetables and its products for packaging by using the packaging machineries, packaging, storage, loading and transportation under the supervision.	3

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<b>Title/Name of qualification/component:</b> Packaging technology of fruits and vegetables		<b>Level: 3</b>	
<b>NSQF Domain</b>	<b>Outcomes of the Qualification/Component</b>	<b>How the job role relates to the NSQF level descriptors</b>	<b>NSQF Level</b>
		Hence, it qualifies as a Level 3 role .Since it does not involve several choices to be made even in a familiar Context, the role does not qualify for Level 4.	



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## SECTION 3

### EVIDENCE OF NEED

#### What evidence is there that the qualification is needed?

The food processing industry is one of the most important sectors in India considering its linkage to agriculture and food consumption in an economy of a billion plus population. The food processing industry is also significant in terms of its socio-economic bearing on the economy. It employs 13 million people directly and about 35 million people indirectly<sup>1</sup>. The worth of the Indian processed foods sector stood at US\$ 157 billion in 2012 and is expected to touch USD 255 billion by FY2016 with 13% growth rate per annum. (As per the report of Decide with confidence) There are several factors which are responsible for this fast growth of this industry. Some of them are rising incomes, changing lifestyles, and a growing middle class, gradual acceptance of processed food. The value addition in different stages in food processing industry requires different skill sets. It is clear around 55% of the human resource in food processing industry is involved in production work, or in processing stage. After having an overview of functional distribution of human resources across segments in food processing industry, we will observe the educational profile of the employees involved in food processing industry is that maximum percentage of workers in food processing industry has low level of education. During the industry interactions carried out while creating occupational maps and prioritization of job roles for Qualification Pack development, the mentioned qualification was indicated as a key requirement by the industry. The mentor Council of NCVT for Food Processing and preservation sector is finalized the curriculum. The lists of validating companies are Mega food park, I.T.C, Jupiter Multi-fruit processor, Rich graviss products pvt Ltd., International fresh farm product india Ltd Channo, Punjab, Moonak Distiller and bottler pvt ltd, moonak, punjab and Cremica ltd .The complete list of validating companies has been enclosed as an annexure to the Q file.

Food Processing Industry is driven by growth in consumption of food. The major growth segments are likely to be: Fruits & Vegetable, growing at 13 %.

#### What is the estimated uptake of this qualification and what is the basis of this estimate?

As per the report of (Asian Journal of Science and Applied Technology ISSN: 2249-0698 Vol. 4 No. 2, 2015, pp.31-40 © The Research Publication, www.trp.org.in) The Food Processing Industry is expected to grow **from Rs. 3,600 billion in 2008 to over Rs. 15,600 billion by 2022**, a CAGR of about 11%. Table below shows projected growth in food processing industry over a period of time from 2008 to 2012 up to a period of 2022.

#### PROJECTED SIZE OF FOOD PROCESSING INDUSTRY TILL 2022 – RS. BILLION

Sector	2008	2012	2018	2022	CAGR
Fruit and Vegetable Processing	159	259	543	887	13.1%

Source: ASI, NSSO, MOFPI Vision 2015, IAMR study on Food Processing Sector, and IMaCS analysis

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For the projected growth in the Food Processing Industry, it is expected that the requirement of human resource would increase from about 8.5 million in 2008 to about 17.8 million in 2022, an incremental human resource requirement of about 9.3 million persons till 2022.

### PROJECTED HUMAN RESOURCE REQUIREMENT FOR THE FOOD PROCESSING INDUSTRY (IN '000 PERSONS) TILL 2022.

Sector	2008	2012	2018	2022	Incremental (in '000 persons)
Fruit and Vegetable Processing	140	183	273	357	216

Source: ASI, NSSO, MOFPI Vision 2015, IAMR study on Food Processing Sector, and IMaCS analysis

It is expected that Organized Sector would contribute to about 20% to 25% of employment, while a large portion of the employment would be generated in the Unorganized Sector in the Food Processing industry. A large portion of the incremental requirement would be in the Fruit and Vegetable Processing sector.

According to a study on 'Assessment of Requirement of Food Technologists, Managers and Entrepreneurs for the Food Processing Industries' conducted by IAMR. Following available skills under 10th plan and during period of 2008 to 2014 is shown along with the required annual demand in each specialized category of human resource. The table below indicates the skill requirement in organized food processing industry.

### HUMAN RESOURCES SUPPLY GAP

Category	10th Plan Period (available human resource)	2008 to 2014 (available human resource)	Required Annual Demand
Short-term course trained personnel with education below 10th/12th standard	6,400	10880	95351

Source: Assessment of Requirement of Food Technologists, Managers and Entrepreneurs for the Food Processing Industries', IAMR & IMaCS analysis

Food processing sector is the most suitable sector for creating jobs for rural poor, and thereby reducing the burden on agricultural sector for creation of their livelihood. Familiarity with the agricultural sector makes it easier to train and place people in food processing enterprises.

### What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF?

The Qualification has been mapped with the National Qualification Register, maintained by NSDA to ensure the qualification does not duplicate. No other qualification is available in NQR with these

outcomes.

**What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?**

- 1) DGT interacts with training providers to gather feedback in implementation and updation of qualification. Time to time the performance of Training Partners and assessing bodies are reviewed by the concerned RDAT'S for various training methodology, training aids, certification procedure, skill sets and examination procedure.
- 2) Monitoring of results of assessments
- 3) Employer feedback will be sought post-placement
- 4) In a recent initiative, a Mentor Council (MC) for the relevant sector has been formed to review the curriculum of this qualification under the sector.
- 5) CSTARI, the research wing of DGE&T, reviews and updates the qualification, in consultation with industries and other stakeholders, on a regular basis.

The qualification is reviewed after every 2 years for updation according to latest Technologies and practices.

Please attach any documents giving further information about any of the topics above.

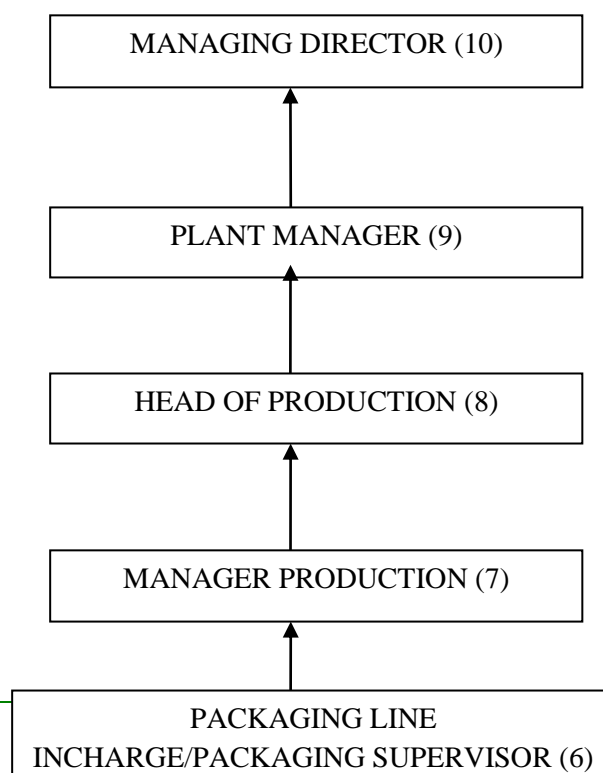
Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

## **SECTION 4**

### **EVIDENCE OF PROGRESSION**

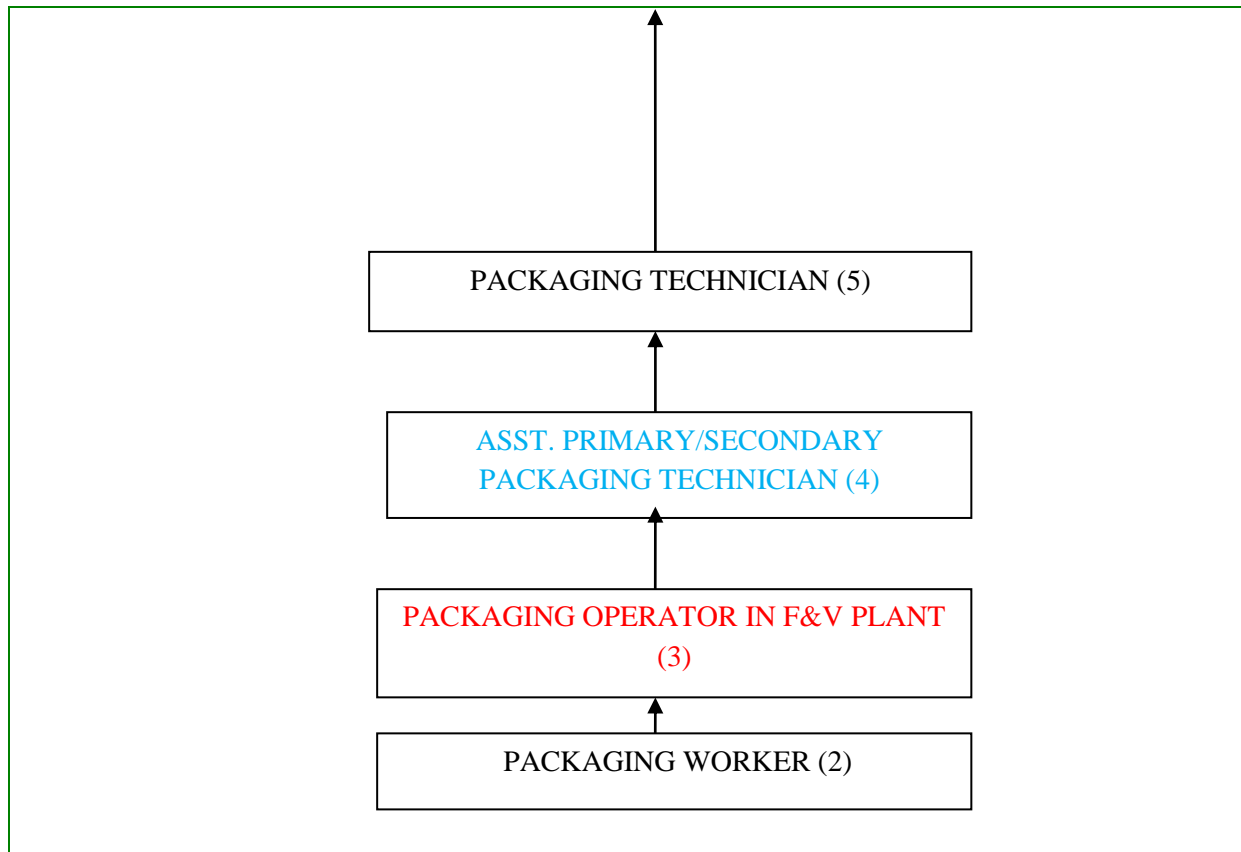
**What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?**

1. The qualification has been prepared the organisational charts of various small, medium, and large scale Fruits and vegetables processing industries.
2. The qualification has been prepared as per the occupational map of SSC.



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Please attach any documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.