Model Curriculum

QP Name: Krishi Sahayak

QP Code: AGR/Q7603

Version: 1.0

NSQF Level: 3

Model Curriculum Version: 1.0

Agriculture Skill Council of India || Agriculture Skill Council of India (ASCI), 6th Floor, GNG Tower, Plot No. 10, Sector - 44

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Training Parameters

Sector	Agriculture
Sub-Sector	Agriculture Industries
Occupation	Information Management
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 6116.0102
Minimum Educational Qualification and Experience	5th grade pass with 4 Years relevant experience OR 8th grade pass with 1 Year relevant experience OR Grade 8 with one year of (NTC/NAC) after 8th OR Grade 8 pass and pursuing continuous schooling in regular school with vocational subject OR Previous relevant Qualification of NSQF Level 2 with 1 Year relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	16 Years
Last Reviewed On	17/11/2022
Next Review Date	17/11/2022
NSQC Approval Date	17/11/2025
QP Version	1.0
Model Curriculum Creation Date	17/11/2022
Model Curriculum Valid Up to Date	17/11/2025
Model Curriculum Version	1.0
Minimum Duration of the Course	300 Hours
Maximum Duration of the Course	300 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:

- Discuss the job role of a Krishi Sahayak
- Explain the elements of livelihoods its different sources.
- Explain different factors of production.
- Recognize the Mahila Kisan and her identity as farmer.
- Evaluate the total cash flow on agricultural inputs
- Explain about the Agro-ecology and their interdependence
- Explain about ecosystem services / carrying capacity of eco-system and its relevance
- Explain the cropping systems
- Prepare the site for establishing an agri-nutrition-garden
- Demonstrate field preparation for establishing an agri-nutrition-garden
- Demonstrate different agronomic practices
- Demonstrate harvesting of agri-nutrition-garden crops
- Demonstrate planning, conducting and impact assessment of the training & capacity building
- Demonstrate appropriate methods of facilitation
- Demonstrate site preparation for field crops cultivation
- Select appropriate seeds and planting materials
- Demonstrate macro and micronutrient management of field crops
- Demonstrate weed, pest and disease management practices
- Demonstrate irrigation management for field crops
- Demonstrate harvesting, post-harvest management and marketing of the field crop
- Demonstrate usage of farm machinery for field crops cultivation
- Demonstrate maintenance activities of the farm machinery
- Explain the impact of abnormal climatic conditions on small holders' agricultural practices
- Demonstrate appropriate measures taken to deal with abnormal weather conditions
- Demonstrate planning for integrated farming systems
- Demonstrate crop planning
- Demonstrate maintenance of necessary records
- Examine the market information
- Discuss how to adhere to personal hygiene practices.
- Demonstrate ways to ensure cleanliness around the workplace.
- Discuss Communication Skills
- Demonstrate Basic English skills
- Explain 21st century skills
- Demonstrate essential digital skills

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
AGR/N7612: Comprehend the livelihood perspective of the farming communities **Version- 1.0** **NSQF Level- 3**	**15:00**	**15:00**	**0:00**	**0:00**	**30:00**
Module 1: Introduction to the sector and the role	05:00	0:00	0:00	0:00	05:00
Module 2: Basic livelihood perspective of the farming communities	10:00	15:00	0:00	0:00	25:00
AGR/N7613: Comprehend the Agro-ecology and various interventions that influence the functioning of the ecosystem **Version- 1.0** **NSQF Level- 3**	**20:00**	**10:00**	**0:00**	**0:00**	**30:00**
Module 3: Agro-ecology and various interventions that influence the functioning of the ecosystem	20:00	10:00	0:00	0:00	30:00
AGR/N7614: Establish an Agri-nutrition-garden (ANG) **NOS Version- 1.0** **NSQF Level- 3**	**15:00**	**15:00**	**0:00**	**0:00**	**30:00**
Module 4: Establishment and operation of a Agri-nutrition-garden (ANG)	15:00	15:00	0:00	0:00	30:00
AGR/N7619: Improve Farming Practices by conducting Farmer Field Schools (FFS) **NOS Version- 1.0** **NSQF Level- 3**	**10:00**	**20:00**	**0:00**	**0:00**	**20:00**
Module 5: Conducting Farmer Field Schools (FFS)	10:00	20:00	0:00	0:00	20:00
AGR/N7615: Cultivate the appropriate crops in the selected area **NOS Version- 1.0**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**

NSQF Level- 3					
Module 6: Cultivation of crops in the selected areas	10:00	20:00	0:00	0:00	30:00
AGR/N7616: Use relevant farm machinery for the field crop cultivations **NOS Version- 1.0** **NSQF Level- 3**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 7: Relevant farm machinery for the field crop cultivations	10:00	20:00	0:00	0:00	30:00
AGR/N7617: Analyse the effect of abnormal weather conditions on small holders' agricultural practices for effective management practices **NOS Version- 1.0** **NSQF Level-3**	**15:00**	**15:00**	**0:00**	**0:00**	**30:00**
Module 8: Effective management practices for dealing with abnormal weather conditions on small holders' farms	15:00	15:00	0:00	0:00	30:00
AGR/N7618: Carryout basic farm management **NOS Version- 1.0** **NSQF Level-3**	**15:00**	**15:00**	**0:00**	**0:00**	**30:00**
Module 9: Basic farm management practices	15:00	15:00	0:00	0:00	30:00
AGR/N9903: Maintain health and safety at the workplace **NOS Version- 1.0** **NSQF Level-4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 10: Hygiene and cleanliness	05:00	10:00	0:00	0:00	15:00
Module 11: Safety and emergency procedures	05:00	10:00	0:00	0:00	15:00
DGT/VSQ/N0101: Employability Skills (30 Hours) **NOS Version- 1.0** **NSQF Level-2**	**30:00**	**00:00**	**0:00**	**0:00**	**30:00**

Module 12: Employability Skills	30:00	00:00	0:00	0:00	30:00
Total Duration	**150:00**	**150:00**	**0:00**	**0:00**	**270:00**

Module Details

Module 1: Introduction to the sector and the role

Bridge Module

Terminal Outcomes:

- Discuss the job role of a Krishi Sahayak

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

Module 2: Basic livelihood perspective of the farming communities

Mapped to AGR/N6129 v1.0

Terminal Outcomes:

- Explain the elements of livelihoods and its different sources.
- Explain different factors of production.
- Recognize the Mahila Kisan and her identity as a farmer.
- Evaluate the total cash flow on agricultural inputs

Duration: 10:00	**Duration: 15:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Enlist Routes to Livelihoods (sources and sinks) and Sources of income and expenditure • Explain the measures to reduce the expenditure • Explain the Elements of Resource mapping, Social Mapping and Aspiration mapping • Enlist the Production Input, Ecological factors and Market factors that are under full control, partial control, beyond control of the individual • Enlist the sources of their family income (i.e cash inflow) and avenues of expenses (i.e cash outflow) • Illustrate how low-cost agriculture can reduce the family expenses and increase income of the farmer • Explain process to evaluate the total cash flow on agricultural inputs • Explain the division of agriculture work between male and female farmers • Explain the role of women in farming and various possible interventions to strengthen the identity of women as a farmer • Enlist the hindrances for which "women are not considered as a farmer" and map out the possibilities to establish it. • Describe the term livelihood; elements of livelihoods and factors of	• Evaluate the total cash outflow and cash outflow on agricultural inputs and calculate the percentage of cash used for agriculture input purpose • Select the appropriate ways and means to reduce the sinks (particularly cost of agricultural input) • Demonstrate women's role (decision maker/ labour) in farming with a photo chart • Demonstrate Mapping future aspiration using 7-river tool • Demonstrate the use of sustainable livelihoods frameworks in analysing rural livelihoods • Demonstrate mapping work division in farming

Production • Explain the difference between an agricultural labour and a farmer	
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop, Chart paper, pen	
Tools, Equipment and Other Requirements	
NA	

Module 3: Agro-ecology and various interventions that influence the functioning of the ecosystem

Mapped to ARG/N7613 v1.0

Terminal Outcomes:

- Explain about the Agro-ecology and their interdependence
- Explain the ecosystem services / carrying capacity of eco-system and its relevance
- Explain the cropping systems

Duration: 20:00	**Duration: 10:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Differentiate living and non-living factors of the ecology and the linkages / interdependence among these factors • List the elements on surface of the earth, soil and water body • Explain about Functioning / Equilibrium / Dynamism in the ecosystem • Describe the positioning of agriculture in the local ecosystem and its importance • Explain the effect of conventional agricultural practices on ecology • Define the term climate, weather and differentiate them • Explain the use of instruments for recording elements of weather • List the essential elements a crop plant needs to grow and their sources • List various sources of accessing weather data viz. Mobile app, Google search, Television weather report, Radio broadcast etc. • Describe the effect of weather and climatic parameters on crop production • Explain the concept of carrying capacity of ecosystem and ecosystem services and its importance • Explain the concept of cropping system, its methods and its	• Identify living and non-living factors of the ecology and tabulate their interdependence /linkages • Demonstrate categorizing the agricultural / livelihood activities that impact the ecosystem • Recognise ecosystem services / carrying capacity of eco-system • Demonstrate best livelihood practices particularly agricultural practices of the farmer • Demonstrate good agricultural practices concerning Seed, Plant nutrition, Moisture conservation, Irrigation, Plant protection etc. that are beneficial to the ecosystem • Demonstrate conventional and latest agro-ecological practices to differentiate the impact on ecosystem

importance • Describe about deteriorating carrying capacity affecting agriculture • Differentiate conventional and latest agro-ecological practices and its impact on ecosystem • Explain about extreme climatic conditions and response/ measures to be taken • Explain about weather elements, forecasting and agro-advisory services • Explain about the changes in eco-system/carrying capacity over the period of time (stabilised / enhanced / deteriorated)	
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 4: Establishment and operation of an Agri-nutrition-garden (ANG)

Mapped to AGR/N7614 v1.0

Terminal Outcomes:

- Prepare the site for establishing an agri-nutrition-garden
- Demonstrate field preparation for establishing an agri-nutrition-garden
- Demonstrate necessary agronomic practices
- Demonstrate harvesting of agri-nutrition-garden crops

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain commonly occurring issues in child and women health and root causes of these • Describe the influence of Nutrition Garden in healthy diet • Enlist elements/components/ vision of a model nutrition garden and its importance • Define the term malnutrition, their cause and relationship with feeding practices • Explain the importance of ANG and steps involved in starting/ establishing ANG • Describe various cropping patterns for the model kitchen garden • Explain the process involved in establishing / changing / modifying the existing agri-nutrition garden • Enlist nutritive and medicinal value of various fruits and vegetables • Describe various layouts with diversity of crops in an agri-nutrition garden • Explain the concept of hanging vegetable garden/ multi-layer cropping • Explain the use of low cost portable vegetable nursery • Explain the principle of harvesting, crop cutting, understanding on production pattern and ROI • Describe the terms- food sufficiency,	• Inspect the site for conducive agro-climatic conditions for establishing an Agri-nutrition-garden • Determine the suitability of the soil for establishing an Agri-nutrition garden while coordinating with an authorized lab • Examine the site for accessibility and availability of quality water, good drainage, labour and other inputs • Identify the risks associated with establishing an Agri-nutrition-garden at the site and take appropriate preventive measures • Demonstrate preparation of the field layout as per the available space and selected crop requirements • Select the crop maintaining the crop diversity in an Agri-nutrition garden • Select fresh vegetables and fruits that are available throughout the year • Demonstrate various cropping pattern for the model kitchen garden • Demonstrate preparing the field for establishing an Agri-nutrition-garden • Create drainage channels in the field for the effective drainage of water • Demonstrate application of compost/ manure as per recommended dose • Demonstrate ploughing the soil • Demonstrate harrowing the soil • Demonstrate planting the selected seedlings/seeds in flat beds, ridges

food security, social security and its relevance to current era • Explain the crop maturity stages and methods of harvesting • Explain the criteria and factors to be considered for site selection, layout and protection, crop selection and crop planning, seed selection, treatment and nursery raising of ANG • Explain the field lay out and crop selection for the next season	and raised beds according to crops grown • Demonstrate macro and micronutrient management of selected field crops in AGN • Demonstrate weed management and integrated pest and disease management in crop fields • Demonstrate irrigation management as per the critical stages of the selected crops • Examine the maturity indices of crops for harvesting • Select the appropriate harvesting time and harvesting method (manual or mechanical) for the crop • Demonstrate the use of various tools, equipment and machinery for harvesting the matured crop with minimum loss • Inspect the harvested crop for biological infestation and physical damage • Demonstrate segregating the infested and damaged crops produce
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Kassi / Spade, Khurpi, Weeder, Side shear, Broom, Rake, Watering Can, Hand hose, Bucket, Plant Pruner, Wheel Barrow, Hand Sprayer, Budding & Grafting Set, Earthen Pots, Hedge Cutter, Polythene Bags (Garbage), Seed Packets, Gunny bags, Tags-labels, shears, loppers, sprayers, plant labels, waterpumps and equipment, watering timers, harvester etc.	

Module 5: Conducting Farmer Field Schools (FFS)

Mapped to AGR/N7619 v1.0

Terminal Outcomes:

- Demonstrate planning, conducting and impact assessment of the training & capacity building
- Demonstrate appropriate methods of facilitation
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Duration: 10:00	**Duration: 20:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the concept of Farmer Field Schools (FFS), their objectives, essential elements, characteristics • Describe how to initiate FFS around resource persons • Explain the need for a platform for cross learning • Explain the importance of FFS in catering the needs of farming community • Describe the Farmer field school decision tree • Explain about FFS basic learning cycle and follow-up action • Explain the concept of Agro Eco Sytem Analysis (AESA) • Describe the steps involved in conducting FFS and their implementation Strategy • Explain about group size, selection of facilitator (CSP), training of facilitators on complete module of AEP • Explain the principles and practices on effective facilitation • Differentiate hearing -listening; thinking-feeling; Open ended - close ended questions, summarising-paraphrasing • Explain do's and don'ts list • Explain various program on Food Security • Enlist and explain about Sustainable Development Goals	• Demonstrate tabulating various old and new farming practices • Demonstrate conducting the learning sessions in FFS • Demonstrate planning, executing and tracking progress and impact assessment of training & capacity building events as per the need analysis and training calendar • Demonstrate conducting field visits and use of various agricultural machineries, tools, equipment and processes • Assist the farmers in establishing forward and backward linkages with the relevant stakeholder • Demonstrate documentation of various activities • Demonstrate various elements/ methods of communication in training/ learning events

Classroom Aids
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop , SDG Chart
Tools, Equipment and Other Requirements
Kassi / Spade, Khurpi, Weeder, Side shear, Broom, Rake, Watering Can, Hand hose, Bucket, Plant Pruner, Wheel Barrow, Hand Sprayer, Budding & Grafting Set, Earthen Pots, Hedge Cutter, Polythene Bags (Garbage), Seed Packets, Gunny bags, Tags-labels, Budding-tape, Sutli, Moss-grass, etc.

Module 6: Cultivation of crops in the selected areas

Mapped to AGR/N7615 v1.0

Terminal Outcomes:

- Demonstrate site preparation for field crops cultivation
- Select appropriate seeds and planting materials
- Demonstrate macro and micronutrient management of field crops
- Demonstrate weed, pest and disease management practices
- Demonstrate irrigation management for field crops
- Demonstrate harvesting, post-harvest management and marketing of the field crop

Duration: 10:00	**Duration: 20:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the principles of land preparation such as site selection, land measurement and preparation (raised bed-ridge and farrow), summer ploughing, land preparation/ pulverisation of soil / levelling, bund repair and strengthening, loosening of soil & embankment for habitation • Explain the principles of different method of sowing like line sowing, transplanting, SCI, direct seeded, • Describe types of nursery and its advantages and various method of nursery preparation • Explain various nursery management practices • Enlist and explain various cropping patterns like Paira, intercrop, mixed, alley • Describe crop rotation • Describe the crop maturity stages and methods of harvesting for different crops • Explain Crop production data analysis/yield assessment and its importance • Explain the use of manually driven transplanter, reaper and threshing & curing, sun drying • Explain the process of testing seed germination and seed treatment	• Demonstrate preparing the site for the cultivation of field crop • Examine the site for conducive climatic conditions for the cultivation of field crops • Determine soil suitability for the selected crop based on the soil report take measures as per recommendations of authorized lab • Analyse the physical properties of the soil • Create drainage channels in the field for the effective drainage of water • Select appropriate varieties/ hybrids, pest and disease resistant/tolerant based on the climate • Procure quality seeds from authorized vendor • Demonstrate seed treatment and store at recommended temperature • Demonstrate sowing the seeds by appropriate seed rate and use of seed sowing equipment • Identify the nutrient deficiencies and determine macro and micro nutrient requirements and apply based on soil report from authorized lab • Demonstrate preparation of compost, FYM, vermicompost, NADEP, Ghanjeevamrut, Dravyajeevamrut, Panchgavya etc.

(mechanical, chemical and biological) • Explain the use and importance of bio-fertilizer for seed treatments and soil health management (Rhizobium/ trichoderma, PSB, Azotobacter, Azospirillum) • Explain about various types of seeds viz. Nucleus, Breeder, Foundation, Certified, Truthful, ODV-Other Distinguishable Variety • Explain the components on the labels of packaged seed • Explain about cleaning, sorting, grading, quality control • Explain about Seed Production for own use & storage and Post- Harvest Storage Factors and methods to Preserve Seeds • Explain ways to minimise expenses on seeds and planting materials • Describe the process of composting, their need, different types and importance • Explain types of Bio-Fertilizers and methods of application of biofertilizers • Explain types of erosion, causing elements, methods of reducing soil erosion, cultural, mechanical, structural and agronomic practices-SGA • Explain the components of soil health card • Define Pest and explain types, factors for pest outbreak, beneficial and harmful insects, their effects and life cycle • Explain about Beneficial insect and their importance and use • Explain the Principles of Non-pesticide management and bad effect of chemical pesticide and its importance • Explain the symptoms and remedial measures of various pests and	• Demonstrate soil and water conservation techniques/ methods • Demonstrate documentation of all farm activities and inputs used • Inspect the field for weeds, pests and diseases • Demonstrate weed management practices (mechanical/chemical) and integrated pest and disease management practices (chemical, mechanical, biological) respectively • Demonstrate standard procedures to restrict the entry of pathogens into the field • Diagnose the pest or disease infestation based on damage symptoms and maintain record • Determine the stage of pest and disease incidence along with the extent of damage and economic threshold levels (ETL) of the pests • Set up an appropriate irrigation system such as surface, drip, sub-surface system based on crop and irrigate as per the schedule • Examine the maturity of the crop for harvesting based on indices • Select the appropriate harvesting method, time and demonstrate use of necessary tools, equipment and machinery for harvesting the crop • Inspect the crop for biological infestation and physical damage, and segregate the damaged produce • Ientify village level purchaser/ gatherer/ market who is based in village and procures agricultural produces (vegetable, grain, spices etc.) directly from the farmers • Demonstrate packing and packaging of field crops produce • Demonstrate the inventory management practices

diseases • Explain the preparation of concoctions /organic formulations (viz. Handkhata, Agneyastram, Brhamstram, Neemastram, Bael extraction, Mixture of wood ash and castor oil etc.) for NPM practices • Explain the Importance of - water in agriculture, soil moisture conservation • Explain the calculation of water requirement for the selected crop in 1 acre of land • Explain about critical stages of irrigation in crops • Explain the concept of rain water harvesting, various methods of drainages and ground water recharge • Explain the concept of value addition, price realisation of the agricultural produce	
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Ingredients for the organic formulation preparation, Kassi / Spade, Khurpi, Weeder, Side shear, Broom, Rake, Watering Can, Hand hose, Bucket etc., seeds, chemicals, irrigation equipment, fertilizers, FYM, compost, relevant farm machinery	

Module 7: Relevant farm machineries for the field crop cultivations

Mapped to AGR/N7616 v1.0

Terminal Outcomes:

- Demonstrate the usage of farm machinery for field crops cultivation
- Demonstrate maintenance activities of the farm machinery

Duration: 10:00	**Duration: 20:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the need and importance of small farm tools and machines and their benefits • Enlist women friendly farm machines and explain their use and importance • Explain the scope for small farm mechanisation like Mini tractor, Small power tiller, Seed drill (hopper), Seed drill (Drum), Small cultivator, Brass-cutter, Small cultivator for hilly terrain, Secateurs, Hand held weeder, 0.1 HP solar pump-set, 0.5 HP electric pump for homestead irrigation etc. • Explain the concept of Custom hiring centre (CHC) purposes, Objectives, uses, Operationalisation, governance and management structure etc. • Explain the process of maintenance of equipment and their physical and financial management • Enlist the Objectives of Good Maintenance Practices • Describe the use of mechanisation in primary tillage operations, inter cultural operations and harvesting and post-harvest activities • Explain the process of field trouble shooting of small-farm machinery • Explain the importance and use of insurance of equipment • Explain about documentation of various activities in CHC	• Demonstrate the use of women friendly farm machines • Demonstrate on-field trouble shooting of small-farm machinery • Demonstrate documentation and recording or various activities at CHC • Demonstrate maintenance of small farm machinery • Demonstrate safe handling of tools and equipment • Demonstrate usage of relevant farm machinery in primary tillage operations (viz. power tiller, Tractor with MB plough, disc harrow, Nine tine etc), inter cultural operations (viz. various weeders, hoe etc) and in harvest and post-harvest management practices like Reaper
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	

Mini tractor, Small power tiller, Seed drill (hopper), Seed drill (Drum), Small cultivator, Brass-cutter, Small cultivator for hilly terrain, Secateurs, Hand held weeder, 0.1 HP solar pump-set, 0.5 HP electric pump, power tiller, Tractor with MB plough, disc harrow, Nine tine, weeders, hoe, Reaper

Module 8: Effective management practices for dealing with abnormal weather conditions on small holders' farms

Mapped to AGR/N7617 v1.0

- Explain the impact of abnormal climatic conditions on small holders' agricultural practices
- Demonstrate appropriate measures to the abnormal weather conditions

Duration: 15:00	**Duration: 15:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Differentiate between weather and climate • Describe the effect of abnormal weather conditions on small holders' agricultural practices and appropriate strategic response against the same as preventive measures/ measures • Explore how climate change affects availability, access and absorption aspects of food security, economy, market, crops • Enlist the effects of parameters of Climate (viz. Temperature, Light, Wind, Humidity etc,) on crop production • Enlist the changes that happened in agricultural practices and water harvesting practices over the years due to climate change • Describe the impact of Climate Change on livelihoods activities viz. Agriculture, Livestock, fishery etc. • Deliberate three dimensions of sustainable production: environmental, economic and social • Enlist the changes, innovations and adaptations that are brought to farming practices with regard to water, soil improvement, crop selection etc. • Explore various SGDs options on water-soil-crop • Enlist the factors on which water availability in the region depends • Explain various mitigation measures for climate change	• Analyse the effect of climate change on market (supply/ access/ price)- primary market • Analyse the changes observed in the locality in rains and temperature over years and their impact • Analyse the movement of monsoon wind, how it gets moisture, how it gets created, how it gets reversed in winter etc • Demonstrate appropriately sowing/ planting plan/time as per climate change requirement • Calculate the yield and inspect the quality of the grain or seed • Demonstrate preparation of climate change action plan • Demonstrate framing strategic response for adverse climatic conditions to meet the requirement of different agro-climatic situations • Demonstrate appropriate measures to be taken for the abnormal weather conditions on small holders' agricultural practices for (i) seed and variety (ii) sowing/ planting time- crop duration (iii) irrigation/ in situ water conservation (iv) Soil and water management (v) Pest incidence
Classroom Aids	

Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop
Tools, Equipment and Other Requirements
NA

Module 9: Basic farm management practices

Mapped to NOS AGR/N7618 v1.0

Terminal Outcomes:

- Demonstrate planning for integrated farming systems
- Demonstrate crop planning
- Demonstrate maintenance of necessary records
- Examine the market information

Duration: 15:00	**Duration: 15:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the relevant legislation, standards, policies and procedures at work • Explain the relevant health and safety requirements applicable in the work environment • Explain the concept of cost benefit analysis of the farm practices/ crops • Explain various value addition activities of harvested and post harvested/ farm gate produce • Differentiate between conventional and AEP for major crops and their comparative benefits • Highlight the issues with green revolution • Explain the government schemes and the eligibility for availing them • Explain the concept of Sustainable agriculture and forms of sustainable farming and interventions in farm-based livelihoods to ensure sustainability • Explain the importance of good quality seeds • Explain the terms MPS, Market-locating, access, timing • Explain how to make Farming as a Business • Explain the concepts of farming systems, Integrated Farming Systems(IFS) and Sub systems of IFS	• Demonstrate preparation of relevant details in the cist benefit analysis template • Calculate cost benefit analysis for one crop out of cereal, pulses and oil seeds etc. per acre • Identify the nearest market, local traders, mandis in the villages and nearby and compare the rates of inputs and produce • Identify market rates of the produce season wise and arrange cost-effective transportation to the market • Demonstrate maintenance of investment, income and expenditure records and books of accounts • Demonstrate maintaining records of crop production activity, crop calendars, weed and insect & pest calendar • Select the crop based on agro-climatic condition of the region and intercrop with suitable and recommended crop • Identify physiological maturity symptoms of some field crops • Demonstrate preparation of crop planning with agriculture / extension expert's support • Demonstrate preparation of plan for Integrated Farming Systems their sub system as per available farm

and its objectives and constraints • Describe Integrated Poultry farming, Integrated Fish Farming, Agroforestry systems-its need and benefits • Explain the key attributes of agri-entrepreneurs • Explain different types of motivations, Achievement Imagery (A.I.), its elements • Explain Issues and concern related to Agriculture, Social, economic, cultural, culinary, curative	resources • Create flowchart of farming as a business • Demonstrate various measures to increase farm net profit
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
NA	

Module 10: Hygiene and cleanliness

Mapped to NOS AGR/N9903 v3.0

Terminal Outcomes:

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

Duration: 05:00	**Duration: 10:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the requirements of personal health, hygiene and fitness at work. • Describe common health-related guidelines laid down by the organizations/ Government at the workplace. • Explain the importance of good housekeeping at the workplace. • Explain the importance of informing the designated authority on personal health issues related to injuries and infectious diseases.	• Demonstrate personal hygiene practices to be followed at the workplace. • Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs. • Demonstrate the steps to follow to put on and take off a mask safely. • Show how to sanitize and disinfect one's work area regularly. • Demonstrate adherence to the workplace sanitization norms. • Show how to ensure the cleanliness of the work area.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

Module 11: Safety and emergency procedures

Mapped to NOS AGR/N9903 v3.0

Terminal Outcomes:

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

Duration: 05:00	Duration: 10:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the Personal Protective Equipment (PPE) required at the workplace. • Describe the commonly reported hazards at the workplace. • Describe the hazards caused due to chemicals/ pesticides/ fumigants. • Describe the basic safety checks to be done before the operation of any equipment/ machinery. • Describe the common first aid procedures to be followed in case of emergencies. • Explain the emergency measured in workplace during any farm operation • State measures that can be taken to prevent accidents and damage s at the workplace. • Explain the importance of reporting details of first aid administered, to the reporting officer/ doctor, in accordance with workplace procedures. • State common health and safety guidelines to be followed at the workplace.	• Check various areas of the workplace for leakages, water-logging, pests, fire, etc. • Demonstrate how to safely use the PPE and implements it as applicable to the workplace. • Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc. • Sanitize the tools, equipment and machinery properly. • Demonstrate the safe disposal of waste. • Demonstrate basic safety checks before use of tools and equipment • Demonstrate procedures for dealing with accidents, fires and emergencies. • Demonstrate emergency procedures to the given workplace requirements. • Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements. • Demonstrate the administration of first aid. • Prepare a list of relevant hotline/ emergency numbers.
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Personal Protective Equipment, First Aid Kit, Equipment used in Medical Emergencies.	

Module 12: Employability Skills

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***	
12th Class		4	Agriculture Extension Service	0		Ex-Service-Man including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honourable Discharge/ Pension. SSC would consider a relaxation/waiver of sector-specific experience on a case-to-case basis.
Diploma	Agriculture	3	Agriculture Extension Service	0		
Graduate	Graduate in any stream except Agriculture & Agri-Allied sector	3	Agriculture Extension Service	0		For the school Program minimum qualification of the Trainer should be Graduate in Botany / Agriculture & Agri-Allied Sector with Teaching experience of minimum 2 years, (will be considered industry experience)
Certificate	CITS certificate in relevant field	2	Related field			
Graduate	Agriculture & Agri-Allied Sector	0.5	Agriculture Extension Service	0		
Post-Graduate	Agriculture/ Agriculture Extension	0		0		

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Krishi Sahayak**", mapped to QP: "AGR/Q7603, v1.0", Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: "Trainer (Vet and Skills)", mapped to the Qualification Pack: "MEP/Q2601, v2.0". The minimum accepted score as per MEPSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
B.Sc.	Agriculture/Extension and related streams	5	Agriculture/ Extension/ Community Management/ Rural Development and related streams	0		Practical skills and knowledge required in Agriculture Extension
PGDAEM		2	Agriculture/ Extension/ Community Management/ Rural Development and related streams	0		Practical skills and knowledge required in Agriculture Extension
M.Sc.	Agriculture/Extension/Rural Development and related streams	2	Agriculture/ Extension/ Community Management/ Rural Development and related streams	0		Practical skills and knowledge required in Agriculture Extension
PhD	Agriculture/ Extension/ Rural Development and related streams	1	Agriculture/ Extension/ Community Management/ Rural Development and related streams	0		Practical skills and knowledge required in Agriculture Extension

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Krishi Sahayak**", mapped to QP: "AGR/Q7603, 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 empaneled assessment partners. Based on the results of the assessment; ASCI will certify the learners/candidates

Testing Environment

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

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

- Multilingual assessments (ASCI is conducting the assessments in 13 + languages pan India)
- Rubric driven assessments in Practical/Viva sections and responses recorded accordingly
- All responses, data, records and feedback are stored digitally on the cloud
- Advanced auto-proctoring features – photographs, time-stamp, geographic-tagging, toggle- screen/copy-paste disabled, etc.
- Android-based monitoring system
- End to end process from allocation of a batch to final result upload, there is no manual intervention

- Assessment will normally be fixed for a day after the end date of the training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- The room where assessment is conducted will be set with proper seating arrangements with enough space to curb copying or other unethical activities
- Question bank of theory and practice will be prepared by ASCI /assessment agency and approved ASCI. Only from approved Question Bank assessment agency will prepare the question paper. Theory testing will include multiple-choice questions, pictorial questions, etc. which will test the trainee on his theoretical knowledge of the subject.
- The theory, practical and viva assessments will be carried out on the same day. In case of a greater number of candidates, the number of assessors and venue facilitation be increased and facilitated

Assessment			
Assessment Type	**Formative or Summative**	**Strategies**	**Examples**
Theory	Summative	MCQ/Written exam	Knowledge of facts related to the job role and functions. Understanding of principles and concepts related to the job role and functions
Practical	Summative	Structured tasks/Demonstration	Practical application /Demonstration /Application tasks
Viva	Summative	Questioning and Probing	Mock interviews on the usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling the job situation

The question paper is 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 tools 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 the assessor and proctor are done on a timely basis to ensure that the quality of the assessment should be maintained.
- Training covers the understanding of QP, NSQF level, NOS and assessment structure

Methods of Validation

- Morning Check (Pre-Assessment): Backend team of AA calls and confirms assessor/technical SPOC event status. Assessor/Technical SPOC are instructed to reach the centre on time by 9:30 AM / as decided with TC and delay should be highlighted to the Training Partner in advance.
- Video Calls: Random video calls are made to the technical SPOC/assessor so as to keep a check on assessment quality and ensure assessment is carried out in a fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure the event is over by what time and the documentation is done properly or not.
- TP Calling: To keep a check on malpractices, an independent audit team calls the TP on a recorded line to take confirmation if there was any malpractice activity observed in the assessment on part of the AA/SSC team. If calls are not connected, an email is sent to TP SPOC for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on a real-time basis and highlights any issue such as students sitting idle/ trainer helping the candidates during the assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and conduct a surprise audit for the assessment carried out by the ground team.
- Geo Tagging: On the day of the assessment, each technical SPOC is required to login into our internal app which is Geotagged. Any deviation with the centre address needs to be highlighted to the assessment team on a real-time basis.

Method for assessment documentation, archiving, and Access:

- ASCI have a fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks form the basis of the results and encrypted files generated to avoid data manipulation. All responses were captured and stored in the System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can

be generated.

- Maker Checker concept: One person prepares the results and another audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All softcopies of documents are received from the on-ground tech team over email. The same is downloaded by our internal backend team and saved in Repository. The repository consists of scheme-wise folders. These scheme-wise folders have two job role-specific folders. These specific folders have Year wise and Month wise folders where all documents are saved in Batch specific folders. All Hard copies are filed and stored in the storeroom.

Result Review & Recheck Mechanism –

- Time-stamped assessment logs
- Answer/Endorsement sheets for each candidate
- Attendance Sheet
- Feedback Forms: Assessor feedback form, Candidate feedback form, TP feedback form
- The results for each of the candidates shall be stored and available for review (retained for 5 years/ till the conclusion of the project or scheme)

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	The key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on-site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on-site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	The terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
AGR	Agriculture
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
DF	Dense Forest
PA	Protected Areas
NTFP	Non-Timber Forest Produce
MFFCM	Modern Forest fire Control Methods
JFM	Joint Forest Management
FSI	Forest Survey of India
FRI	Forest Research Institute
FFCM	Forest Fire Control & Management
CS	Conservation & Survey
CNFA	Cultivable Non-Forest Area
AFM	Advanced Forest Management
PPE	Personal Protective Equipment
WII	Wildlife Institute of India
OJT	On-the-job Training
PwD	People with Disability
PPE	Personal Protective Equipment