



# Model Curriculum

**QP Name: Water Resource Assistant**

**Electives: Watershed/Springshed/Groundwater**

**QP Code: AGR/Q6607**

**Version: 2.0**

**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

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Forestry, Environment and Renewable Energy Management
<b>Occupation</b>	Watershed Management
<b>Country</b>	India
<b>NSQF Level</b>	3
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/2143
<b>Minimum Educational Qualification and Experience</b>	<p>Grade 10 OR 8th grade pass with 2 years of relevant experience 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 of relevant experience OR Previous relevant qualification of NSQF Level 2.5 with 6 months of relevant experience</p>
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	29/03/2023
<b>Next Review Date</b>	29/03/2026
<b>NSQC Approval Date</b>	29/03/2023
<b>QP Version</b>	2.0
<b>Model Curriculum Creation Date</b>	29/03/2023
<b>Model Curriculum Valid Up to Date</b>	29/03/2026
<b>Model Curriculum Version</b>	1.0
<b>Minimum Duration of the Course</b>	270 Hours
<b>Maximum Duration of the Course</b>	330 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:

- Collect and manage the relevant data for water resource planning and implementation
- Explain the process of assisting in the planning and implementation of water resources.
- Demonstrate the process of maintaining the book of accounts.
- Explain the process of assisting in ensuring appropriate office and administrative setup.
- Demonstrate various practices to ensure health and safety at work.
- Explain the process of assisting in planning and implementing watershed programs.
- Explain the process of assisting in planning and implementing springshed programs.
- Explain the process of assisting in planning and implementing groundwater programs.

### Compulsory Modules

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

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>AGR/N6630: Collect and manage the relevant data for water resource planning and implementation</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 3</b>	15:00	15:00	0:00	00:00	30:00
Module 1: Introduction to the role of a Water Resource Assistant	05:00	00:00	0:00	00:00	05:00
Module 2: Process of collecting and managing the relevant data for water resource planning and implementation	10:00	15:00	0:00	00:00	25:00
<b>AGR/N6631: Assist in planning and implementation of water resources</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 3</b>	15:00	45:00	0:00	00:00	60:00
Module 3: Process of assisting in planning and implementation of water resources	15:00	45:00	0:00	00:00	60:00

<b>AGR/N6623: Maintain the book of accounts</b> <b>NOS Version- 2.0</b> <b>NSQF Level- 3</b>	<b>45:00</b>	<b>15:00</b>	<b>0:00</b>	<b>00:00</b>	<b>60:00</b>
Module 4: Process of maintaining the book of accounts	45:00	15:00	0:00	00:00	60:00
<b>AGR/N6624: Assist in ensuring appropriate office and administrative Setup</b> <b>NOS Version- 2.0</b> <b>NSQF Level- 3</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>
Module 5: Process of assisting in ensuring appropriate office and administrative setup	10:00	20:00	0:00	00:00	30:00
<b>AGR/N9903 Maintain health and safety at the workplace</b> <b>NOS Version- 3.0</b> <b>NSQF Level- 4</b>	<b>05:00</b>	<b>25:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>
Module 6: Hygiene and cleanliness	02:00	10:00	0:00	00:00	12:00
Module 7: Safety and emergency procedures	03:00	15:00	0:00	00:00	18:00
<b>DGT/VSQ/N0101: Employability Skills</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 2</b>	<b>30:00</b>	<b>00:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>
Module 8: Employability Skills	30:00	00:00	0:00	00:00	30:00
<b>Total Duration</b>	<b>120:00</b>	<b>120:00</b>	<b>0:00</b>	<b>00:00</b>	<b>240:00</b>

## Elective Modules

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

### Elective 1: Watershed

<b>NOS and Module Details</b>	<b>Theory Duration</b>	<b>Practical Duration</b>	<b>On-the-Job Training Duration (Mandatory)</b>	<b>On-the-Job Training Duration (Recommended)</b>	<b>Total Duration</b>
<b>AGR/N6632: Assist in planning and implementing watershed programs</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>

<b>NOS Version- 1.0</b> <b>NSQF Level- 3</b>					
Module 9: Process of assisting in planning and implementing watershed programs	10:00	20:00	0:00	00:00	30:00
<b>Total Duration</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>

### Elective 2: Springshed

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>AGR/N6633: Assist in planning and implementing springshed programs</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 3</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>
Module 10: Process of assisting in planning and implementing springshed programs	10:00	20:00	0:00	00:00	30:00
<b>Total Duration</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>

### Elective 3: Groundwater

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>AGR/N6634: Assist in planning and implementing groundwater programs</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 3</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>
Module 11: Process of assisting in planning and implementation of groundwater programs	10:00	20:00	0:00	00:00	30:00
<b>Total Duration</b>	<b>10:00</b>	<b>20:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>

## Module Details

### Module 1: Introduction to the role of a Water Resource Assistant

*Bridge Module, Mapped to AGR/N6630 v1.0*

#### Terminal Outcomes:

- Discuss the job role of a Water Resource Assistant.

<b>Duration: 05:00</b>	<b>Duration: 0:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe the size and scope of the agriculture industry and its sub-sectors.</li> <li>• Discuss the role and responsibilities of a Water Resource Assistant.</li> <li>• Identify various employment opportunities for a Water Resource Assistant.</li> </ul>	
<b>Classroom Aids</b>	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 2: Process of collecting and managing the relevant data for water resource planning and implementation

*Mapped to AGR/N6630 v1.0*

### Terminal Outcomes:

- Describe the process of undertaking data collection.
- Explain ways to manage the collected data.

<b>Duration: 10:00</b>	<b>Duration: 15:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Discuss the recommended practices for safe maintenance and storage of data.</li> <li>• Elucidate the importance and process of collecting the demographic data and beneficiary census.</li> <li>• Explain the importance and benefit of collecting data on irrigated land area, type of cropping, well data, rain gauge data, etc.</li> <li>• Describe the process of collecting and entering data in MIS.</li> <li>• Explain how to extract data summaries using MIS.</li> <li>• Explain the importance of updating the data regularly.</li> </ul>	<ul style="list-style-type: none"> <li>• Show how to collect the relevant data for water resource management, such as types of land and area, cropping pattern, irrigated land area, type of cropping, well data, rain gauge data, etc.</li> <li>• Show how to collect the demographic, socio-economic and gender aspects, and beneficiary census data.</li> <li>• Demonstrate the use of the appropriate template and format for data collection as per the program's needs.</li> <li>• Show how to enter the collected data into the Management Information System (MIS) and manage it, coordinating with the persons/agencies engaged.</li> <li>• Demonstrate how to extract the data summaries using MIS and update the data.</li> <li>• Prepare a sample electronic data backup to protect against accidental loss of data.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Hammer, Mason pipe, Measuring Tape, White Board, Wooden Pole for pipe level, Cadastral Maps, Plum bob, L Scale	



## Module 3: Process of assisting in planning and implementation of water resources

*Mapped to ARG/N6631 v1.0*

### Terminal Outcomes:

- Explain ways to assist in conducting the field survey.
- Elucidate ways to assist in mobilizing the community and arranging labour.

Duration: 15:00	Duration: 45:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Describe the process of conducting field surveys and taking the relevant measurements, and recording the specification.</li> <li>• Explain how to mobilize the community for the planning and development of water resources.</li> <li>• Explain the importance of presenting the relevant data to the community and organizing them into appropriate groups.</li> <li>• Elucidate the importance and process of conducting capacity-building exercises for the community.</li> <li>• Elucidate the appropriate mechanisms to take the community's feedback on water resource development projects.</li> <li>• Discuss how to mobilize the labourers for water resource development projects.</li> <li>• Explain the benefits and methods of rainwater harvesting.</li> <li>• Describe the recommended methods for efficient water use and reduction of water loss, such as improved agriculture practices and reuse of water.</li> <li>• Explain the use of efficient and innovative irrigation systems, such as drip and sprinkler irrigation.</li> <li>• State the conservation of soil moisture with the application of mulch and organic matter to soil.</li> <li>• Discuss the approaches adopted for aquifer recharging, e.g. surface</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of layout marking in the field.</li> <li>• Prepare sample records of field measurements and observations.</li> <li>• Roleplay how to organize community meetings for the Water Committee (WC) and other village institutions and present the relevant data to the community members.</li> <li>• Roleplay how to conduct Participatory Rural Appraisal (PRA)/ Rapid Rural Appraisal (RRA) with the community.</li> <li>• Roleplay how to conduct capacity-building exercises for the community.</li> <li>• Prepare sample records concerning the work completed by labourers and payment sheets.</li> </ul>

<p>infiltration and deep injection.</p> <ul style="list-style-type: none"> <li>• Explain different water storage structures, e.g. ponds and lakes.</li> <li>• Explain the importance of efficient water allocation from irrigation canals.</li> </ul>	
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Hammer, Mason pipe, Measuring Tape, White Board, Wooden Pole for pipe level, Cadastral Maps, Plum bob, L Scale	

## Module 4: Process of maintaining the book of accounts

*Mapped to AGR/N6623 v2.0*

### Terminal Outcomes:

- Describe the process of assisting in opening a bank account for the project.
- Demonstrate the process of assisting in maintaining the bank account records and book of accounts.

<b>Duration: 45:00</b>	<b>Duration: 15:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain how to open a bank account for an organization.</li> <li>• List the documents required for opening a bank account for an organization.</li> <li>• Explain the importance of maintaining and ensuring regular updates to bank account records.</li> <li>• Describe the process of maintaining accounting books, including bills, vouchers, purchase orders, receipts, etc.</li> <li>• Describe the organizational procedures for preparing financial reports and accounting journals.</li> <li>• Describe the organizational processes for book-keeping and the use of relevant accounting systems.</li> <li>• Explain the accounting and general mathematical concepts.</li> <li>• Elucidate the importance of reviewing and auditing account records.</li> <li>• List the reporting requirements concerning the banking and accounting records.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to assist in collecting and preparing the required documents for opening a bank account, taking the necessary approvals from the relevant personnel.</li> <li>• Prepare sample record of debits and credit into the water resource project's bank account and the cashbook.</li> <li>• Prepare a sample record of issued and received banking instruments.</li> <li>• Show how to prepare bank cheques and other bank instruments.</li> <li>• Prepare sample accounting journals, cash book, ledgers and other records detailing financial transactions (e.g., disbursements, expense vouchers, receipts, accounts payable).</li> <li>• Show how to assist in entering the accounting data into the computerized system, if available.</li> <li>• Show how to assist in compiling data and preparing a variety of reports.</li> <li>• Demonstrate how to reconcile the records with the Project Implementation Agency (PIA) Accountant.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Hammer, Mason pipe, Measuring Tape, White Board, Wooden Pole for pipe level, Cadastral Maps, Plum bob, L Scale	

## Module 5: Process of assisting in ensuring appropriate office and administrative setup

*Mapped to AGR/N6624 v2.0*

### Terminal Outcomes:

- Explain the importance of assisting in ensuring the office setup and management.
- Explain the need for assisting in ensuring administrative records and legal compliances are maintained.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Discuss organizational standards concerning the administrative procedures.</li> <li>• Discuss organization's standard operating procedures for dealing with any legal requirements.</li> <li>• Explain basic mathematical concepts.</li> <li>• Elucidate basic knowledge of computer and software.</li> <li>• Describe administrative record-keeping procedures and the use of an appropriate filing system for maintaining them.</li> <li>• Discuss the applicable legal compliance procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of preparing and distributing the correspondence memos and letters.</li> <li>• Prepare sample administrative records, such as the attendance book, leave and other relevant records for the staff of WC and other village institutions.</li> <li>• Demonstrate the process of preparing the WC records and reports for legal compliance of Project Fund (PF), Professional Tax (PT), charity commissioner and PIA/funding agency.</li> <li>• Show how to maintain and update the proceeding books of WC and other village institutions.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
Hammer, Mason pipe, Measuring Tape, White Board, Wooden Pole for pipe level, Cadastral Maps, Plum bob, L Scale	

## Module 6: Hygiene and cleanliness

*Mapped to NOS AGR/N9903 v3.0*

### Terminal Outcomes:

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

Duration: 02:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain the requirements of personal health, hygiene and fitness at work.</li> <li>• Describe common health-related guidelines laid down by the organizations/ Government at the workplace</li> <li>• Explain the importance of good housekeeping at the workplace.</li> <li>• Explain the importance of informing the designated authority on personal health issues related to injuries and infectious diseases.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate personal hygiene practices to be followed at the workplace.</li> <li>• Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs.</li> <li>• Demonstrate the steps to follow to put on and take off a mask safely.</li> <li>• Show how to sanitize and disinfect one's work area regularly.</li> <li>• Demonstrate adherence to the workplace sanitization norms.</li> <li>• Show how to ensure the cleanliness of the work area.</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

## Module 7: Safety and emergency procedures

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

#### Terminal Outcomes:

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

Duration: 03:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• List the Personal Protective Equipment (PPE) required at the workplace.</li> <li>• Describe the commonly reported hazards at the workplace.</li> <li>• Describe the hazards caused due to chemicals/pesticides/fumigants.</li> <li>• Describe the basic safety checks to be done before the operation of any equipment/machinery.</li> <li>• Describe the common first aid procedures to be followed in case of emergencies.</li> <li>• State measures that can be taken to prevent accidents and damage s at the workplace.</li> <li>• Explain the importance of reporting details of first aid administered, to the reporting officer/doctor, in accordance with workplace procedures</li> <li>• State common health and safety guidelines to be followed at the workplace.</li> </ul>	<ul style="list-style-type: none"> <li>• Check various areas of the workplace for leakages, water-logging, pests, fire, etc.</li> <li>• Demonstrate how to safely use the PPE and implement it as applicable to the workplace.</li> <li>• Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc.</li> <li>• Sanitize the tools, equipment and machinery properly.</li> <li>• Demonstrate the safe disposal of waste.</li> <li>• Demonstrate procedures for dealing with accidents, fires and emergencies.</li> <li>• Demonstrate emergency procedures to the given workplace requirements.</li> <li>• Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements.</li> <li>• Demonstrate the administration of first aid.</li> <li>• Prepare a list of relevant hotline/emergency numbers</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, First Aid Kit, Equipment used in Medical Emergencies.	

## Module 8: 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

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#### 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



## Module 9: Process of assisting in planning and implementing watershed programs

*Mapped to AGR/N6632 v1.0*

### Terminal Outcomes:

- Explain the process of assisting in collecting the necessary data.
- Explain the process of assisting in mobilizing the community for watershed projects.
- Elucidate the process of assisting in planning the watershed projects.
- Describe the process of assisting in the implementation of watershed projects.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain different types of data required for watershed planning, such as physiographical data, environmental and ecosystems data, soil characteristics, soil texture, soil structure, soil erosion, moisture retention capacity, water quality standards and pollutant sources, ecological, local climate data, viz. rainfall and temperature, Catchment Area, Watershed recharge capacity, water level, topography, land use, land cover data, land holding category (small/medium/large/marginal/landless), existing.</li> <li>• Explain the benefits and methods of rooftop and rainwater harvesting.</li> <li>• Discuss various watershed principles and approach.</li> <li>• Explain the basic principle of water budgeting.</li> <li>• Elucidate how to prepare a Detailed Project Report (DPR).</li> <li>• Explain the importance of aquifer and water table.</li> <li>• Describe different water recharge structures.</li> <li>• Explain different water conservation measures.</li> <li>• Describe the watershed concept and the watershed planning process.</li> <li>• Explain the ridge to valley planning.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of layout marking and taking measurements in the field.</li> <li>• Demonstrate the process of estimating the applicable costs for the implementation and management of watershed projects.</li> <li>• Demonstrate how to construct Water Harvesting Structures (WHS).</li> <li>• Prepare sample relevant records, such as labourer attendance and payment data.</li> </ul>

- Explain how to mark the boundaries in a watershed atlas.
- Explain the Basic Schedule Rate (BSR).
- Describe the scientific and traditional soil and water conservation methods.
- Explain the concept of Natural Resource Management (NRM).
- Discuss various practices for sustainable agriculture.
- Discuss the watershed management practices and the scope of integration for different practices.
- Explain the benefits of watershed management.
- Explain the categorization of watersheds based on size, drainage, shape, etc.
- Elucidate various activities undertaken in integrated watershed development projects, viz. soil and water conservation, agronomical practices, livestock management, renewable energy management, institutional developments, etc.
- Explain the concept of the hydrological cycle.
- Explain the importance of soil in watershed management.
- Describe different approaches to conserve soil and prevent soil erosion.
- Explain different types of water harvesting structures.
- Explain how to measure the water requirements of different crops.
- Explain the need for afforestation in a watershed and how to achieve it.
- Explain how to formulate the skeletal plan of a watershed project.
- Explain different initiatives required at different levels for adaptation and climate risk reduction.
- State the recommended measures to involve communities in a watershed management project.

- State the aspects to be considered while formulating the rules, regulations and bylaws for the watershed committee.
- Discuss the ideal structure of a watershed committee.
- Describe the procedure for the functioning of the watershed committee.
- Elucidate the common problems encountered in the monitoring of a watershed project.

#### Classroom Aids

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

#### Tools, Equipment and Other Requirements

## Module 10: Process of assisting in planning and implementing springshed programs

*Mapped to AGR/N6633 v1.0*

### Terminal Outcomes:

- Explain the process of assisting in collecting the necessary data.
- Explain the process of assisting in mobilizing the community for springshed projects.
- Elucidate the process of assisting in planning the springshed projects.
- Describe the process of assisting in the implementation of springshed projects.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain the basic concept of springshed.</li> <li>• Explain different water governance institutions and their operations.</li> <li>• List different water conservation measures.</li> <li>• Explain how to read different types of maps.</li> <li>• Describe the scientific and traditional soil and water conservation methods.</li> <li>• Explain the concept of Natural Resource Management (NRM).</li> <li>• Discuss various practices for sustainable agriculture.</li> <li>• Discuss the relevant climate change concerns.</li> <li>• Elucidate different approaches to conserve soil and prevent soil erosion.</li> <li>• Describe different types of water harvesting structures.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to assist in collecting the relevant data for springshed planning and implementation, such as spring discharge, spring catchment, seasonality, land use, land cover, drinking water, demographic dependence, etc.</li> <li>• Demonstrate the process of undertaking social and technical feasibility surveys to assess the possibility of undertaking the initiative.</li> <li>• Demonstrate the process of preparing the Detailed Work Plans (DWP).</li> <li>• Demonstrate the process of carrying out seasonal water budgeting of spring water for different uses.</li> <li>• Prepare sample relevant records, such as labourer attendance and payment data.</li> </ul>
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	

## Module 11: Process of assisting in planning and implementation of groundwater programs

*Mapped to AGR/N6634 v1.0*

### Terminal Outcomes:

- Explain the process of assisting in collecting the necessary data.
- Explain the process of assisting in mobilizing the community for groundwater projects.
- Describe the process of assisting in planning the groundwater projects.
- Describe the process of assisting in implementing the groundwater projects.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain the concept of recharge potential.</li> <li>• Explain different types of rocks and patterns of rocks.</li> <li>• Elucidate the basics of aquifer.</li> <li>• Discuss the applicable groundwater management practices.</li> <li>• Explain the importance of aquifer and water table.</li> <li>• Describe the process and mechanism of groundwater recharge.</li> <li>• Describe different water recharge structures.</li> <li>• Elucidate different water conservation measures.</li> <li>• Explain how to read different types of maps.</li> <li>• Discuss the scientific and traditional soil and water conservation methods.</li> <li>• Explain the concept of Natural Resource Management (NRM).</li> <li>• Discuss various practices for sustainable agriculture.</li> <li>• Elucidate the relevant climate change concerns.</li> <li>• Describe different approaches to conserve soil and prevent soil erosion.</li> <li>• Describe different types of water harvesting structures.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of collecting the relevant data for groundwater planning and implementation, such as well monitoring, rock type, soil, well discharge, water table, water quality, etc.</li> <li>• Demonstrate the process of registering the groundwater management committee, User Associations (WUA), Farmer Groups, Village Level Institutions (VLI), etc.</li> <li>• Show how to use the relevant maps for planning groundwater projects.</li> <li>• Demonstrate the process of implementing the groundwater project components through user groups and groundwater project management committees.</li> <li>• Prepare sample relevant records, such as labourer attendance and payment data.</li> </ul>

<b>Classroom Aids</b>
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop
<b>Tools, Equipment and Other Requirements</b>

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
<b>12<sup>th</sup> Class</b>	Class 12 <sup>th</sup> with Maths/ Commerce	5	Watershed Management	0		Ex-Service-Man including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honourable Discharge/ Pension. SSC would consider a relaxation/waiver of sector specific experience on case-to-case basis.
<b>Diploma</b>	Diploma in Natural Resource Management/ Watershed Management/ Commerce/ Agriculture/ Agriculture Engineering/ Civil Engineering/ Agri-Business Management	3	Watershed Management	0		
<b>Graduate</b>	Graduate in Natural Resource Management, Commerce/ Agriculture/ Agriculture Engineering/ Civil Engineering/ Agri-Business Management	2	Watershed Management	0		For school Program minimum qualification of Trainer should be Graduate (Natural Resource Management, Commerce/ Agriculture/ Agriculture Engineering/ Civil Engineering/ Agri-Business Management). Their Teaching experience will be considered industry experience
<b>Post Graduate</b>	Post Graduate in Natural Resource Management, Commerce/ Agriculture/					

	Agriculture Engineering/ Civil Engineering/ Agri-Business Management					
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Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Water Resource Assistant</b> ”, mapped to QP: “AGR/Q6607, v2.0”, Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: “Trainer (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, v2.0”. The minimum accepted score as per MEPSC guidelines is 80%.



## Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
<b>Graduation</b>	B. Sc (Environmental Science & Ecology/ Agriculture/ Geoscience/ Natural Resource Management/ Biological Sciences/ Ecology and Conservation/ Agriculture engineering/ Agriculture or related streams and fields)	5	In Watershed/ Agriculture/ Agriculture engineering/ Environmental engineering/ Ecology/ Natural Resource Management/ Geoscience/ Civil Engineering or related streams and fields	0		Practical skills and knowledge required in Watershed management
<b>Graduation</b>	B. Tech (Agricultural engineering and related streams)	5	In Watershed/ Agriculture/ Agriculture engineering/ Environmental engineering/ Ecology/ Natural Resource Management/ Geoscience/ Civil Engineering or related streams and fields	0		Practical skills and knowledge required in Watershed management
<b>Post-Graduation</b>	M. Tech (Agricultural engineering and related streams)	2	In Watershed/ Agriculture/ Agriculture engineering/ Environmental engineering/ Ecology/ Natural Resource Management/ Geoscience/ Civil Engineering or related streams and fields	0		Practical skills and knowledge required in Watershed management
<b>Post-Graduation</b>	M Sc (Agriculture/ Environmental Science & Ecology/ Geoscience/ Natural Resource	2	In Watershed/ Agriculture/ Agriculture engineering/ Environmental engineering/	0		Practical skills and knowledge required in Watershed management

	Management/ Biological Sciences/ Ecology and Conservation/ Agriculture engineering/ Agriculture or related streams and fields)		Ecology/ Natural Resource Management/ Geoscience/ Civil Engineering or related streams and fields			
PhD	PhD (Agriculture/ Environmental Science & Ecology/ Geoscience/ Natural Resource Management/ Biological Sciences/ Ecology and Conservation/ Agriculture engineering/ Agriculture or related streams and fields)	1	In Watershed/ Agriculture/Agriculture engineering/ Environmental engineering/ Ecology/ Natural Resource Management/ Geoscience/ Civil Engineering or related streams and fields			Practical skills and knowledge required in Watershed management

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Water Resource Assistant</b> ”, mapped to QP: “AGR/Q6607, 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 stored digitally on the cloud
- Advanced auto-proctoring features – photographs, time-stamp, geographic-tagging, toggle- screen/copy-paste disabled, etc.
- Android-based monitoring system
- End to end process from allocation of a batch to final result upload, there is no manual intervention

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

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

- The theory, practical and viva assessments will be carried out on the same day. In case of a greater number of candidates, the number of assessors and venue facilitation be increased and facilitated

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

## Assessment Quality Assurance framework

### Assessment Framework and Design:

Based on the Assessment Criteria, SSC in association with AAs will define the test structure for the given roles to cover the required skills and competencies. ASCI offer a bouquet of tools for multi-dimensional evaluation of candidates covering language, cognitive skills, behavioural traits and domain knowledge.

**Theoretical Knowledge** - Item constructs and types are determined by a theoretical understanding of the testing objectives and published research about the item types and constructs that have shown statistical validity towards measuring the construct. Test item types that have been reported to be coachable are not included. Based on these, items are developed by domain experts. They are provided with comprehensive guidelines of the testing objectives of each question and other quality measures.

**Type** – Questions based on Knowledge Required, Case-based practical scenario questions and automated simulation-based questions.

**Practical Skills** - The practical assessments are developed taking into consideration two aspects: what practical tasks is the candidate expected to perform on the job and what aspects of the job cannot be judged through theoretical assessments. The candidates shall be asked to perform either an entire task or a set of subtasks depending on the nature of the job role

**Type** – Standardized rubrics for evaluation against a set of tasks in a demo/practical task

**Viva Voce** - Those practical tasks which cannot be performed due to time or resource constraints are evaluated through the viva mode. Practical tasks are backed up with Viva for thorough assessment and complete evaluation

**Type** – Procedural questions, dos and don'ts, subjective questions to check the understanding of practical tasks.

The assessor has to go through an orientation program organized by the Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. The assessor shall be given a NOS and PC level overview of each QP as applicable. The overall structure of assessment and objectivity of the marking scheme will be explained to them. The giving of marks will be driven by an objective framework that will maintain the standardization of the marking scheme.

### Type of Evidence and Evidence Gathering Protocol:

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

- GeoTagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidence (photos and videos) to the assessor one day before the assessment. The list is mentioned below:
  - Signed Attendance sheet
  - Assessor feedback sheet

- Candidate feedback sheet
  - Assessment checklist for assessor
  - Candidate Aadhar/ID card verification
  - Pictures of the classroom, labs to check the availability of adequate equipment's and tool to conduct the training and assessment
  - Pictures and videos of Assessment, training feedback and infrastructure.
- Apart from the Assessor, a Technical assistant is popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
- To validate their work on the day of the assessment, regular calls and video calls are done.
- On-boarding and training of assessor and proctor is done on a timely basis to ensure that the quality of the assessment should be maintained.
- Training covers the understanding of QP, NSQF level, NOS and assessment structure

### ***Methods of Validation***

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

### ***Method for assessment documentation, archiving, and Access:***

- ASCI have a fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks form the basis of the results and encrypted files generated to avoid data manipulation. All responses were captured and stored in the

System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can be generated.

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

#### ***Result Review & Recheck Mechanism –***

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

## References

### Glossary

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