Book-4

Training Module for SLMTs on LSDGs: Theme 4: Water Sufficient Village

(Universal and equitable access to safe and affordable drinking water for all)

G&G Skills Pvt. Ltd.
Panchkula, Haryana

Foreword

The realization of Sustainable Development Goals (SDGs) requires a collective effort, and the localization of these goals is a crucial step towards meaningful and effective implementation. It involves aligning thematic targets and indicators with local planning to address the specific needs and challenges faced by communities. As we strive to achieve the SDGs by 2030, the role of localized SDG targets cannot be understated, particularly in the context of Theme 4 - Water Sufficient Village.

Water is the essence of life and a fundamental resource for sustainable development. It focuses on creating Water Sufficient Villages, where every community has access to safe, clean, and sufficient water for its residents. This endeavour is not only crucial for improving living conditions but also for promoting economic growth and environmental sustainability.

In this pursuit, the National Institute of Rural Development and Panchayati Raj (NIRDPR), as an apex training institution, is dedicated to fostering knowledge and expertise among State-level Master Trainers (SLMT). Through the Training of Trainers (ToT) the SLMTs will be equipped to train District and Block-level Master Trainers, creating a cascading effect that will empower local communities to address water-related challenges effectively.

I am delighted to present the comprehensive module on Theme 4 - Water Sufficient Village, meticulously developed by Sri Mohd Taqiuddin, Consultant of the Centre for Panchayati Raj, Decentralized Planning, and Social Service Delivery (CPRDP&SSD) at NIRDPR. This module comprises of learning resources, including the Training design, Session-wise FAQs, Session wise learning material, MCQs for pre and post-training evaluation, and valuable links to related videos.

It is my firm belief that this module will serve as an indispensable tool for the Faculty of NIRDPR and the SIRDPR in their efforts to conduct impactful training sessions for Master Resource Persons on Theme 4 of Water Sufficient Village under the Localization of SDGs. Let us march ahead, hand in hand, as we strive to create water-sufficient villages, nurturing a brighter and more sustainable future for all.

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1. Introduction: The Ministry of Panchayati Raj has initiated thematic approach to planning through aggregating 17 SDG goals into 9 broad themes for localization of SDGs at grass-root level and their attainment through concerted and collaborative efforts of all concerned stakeholders. Of this 9 themes, the theme 4 Water Sufficient Village. Having access to water is essential to human survival. Households require water for numerous reasons such as cooking, drinking, washing utensils, cleaning the house, bathing, washing clothes, personal sanitation, and watering plants around the house. Water is also required for use in AWCs, Schools, Health Centers, Agriculture and allied activities, industry, and other establishments. The principal actor in the last mile delivery of water supply is Gram Panchayats. The challenge is to ensure water of adequate quality in sufficient quantities for each purpose so that the quality of life is improved.

2. Localization of SDGs (LSDG) for making the Village Water Sufficient: The Theme 4 directly affects the following goals that are impacted or dependent on this theme. This understanding of inter linkages among the goals and between the targets is crucial for integrated governance and policy coherence for delivering on this theme

1. **SDG 1** Poverty affects access to water and lack of adequate water in dry land farming leads to low incomes of the farmers and landless labourers dependent on agriculture.
2. **SDG 2** connecting water to agricultural productivity and sustainable food production systems.
3. **SDG 3** Water borne diseases and diseases and deaths due to water and soil pollution.
4. **SDG 4** Educating the children on WASH practices and through them reaching the community.

5. **SDG 5** Gender equality – women and girls bear the brunt of lack of water. It is women who travels long distances to fetch water, and women and girls whose presence is there at water fountains. Rarely does upbringing see boys fetching water in pots.
6. **SDG 9** is successfully incorporated via integrated water resource management, quality, and reliable, sustainable and resilient infrastructure.
7. **SDG 10** Making quality water in adequate quantity accessible and available to all is one of the important aspects to reduced inequalities.
8. **SDG 12** Sustainable and efficient use of natural resources, recycling and safe reuse of water, reduce release of chemicals and waste into water and reduce waste generation provide healthy, hygiene environment.
9. **SDG 13** Climate change impact mitigation and adaptation measures for ensuring Water sufficiency.

3. Har Ghar Jal- Making Water Availability to all: The Ministry of Jal Shakti (MoJS), Government of India, is implementing a flagship programmes Jal Jeevan Mission (JJM) for water supply. This program is convergent in nature and is being implemented by involving Panchayats. The Panchayats have to:

1. Install, operate and maintain various water storage systems, treatment plants and distribution systems like pipeline networks

2. Ensure uninterrupted power supply for water supply works or install renewable power supply sources like solar panels wherever feasible.

3. Provide functional house tap connection (FHTC) to every rural household to supply 55 LPCD of water including Schools, Anganwadi and in public spaces like markets, bus stands etc.

4. Ensure water quality monitoring and surveillance at distribution and consumption point

5. Construct Rain Water Harvesting (RWH) Structures in Public buildings to collect rain falling on earth surfaces for beneficial uses, before it drains away as run-off.

6. Promote water conservation and water augmentation measures like recharging, water harvesting, and renovation of traditional water bodies like ponds and lakes

7. Implement recycling of waste water for different purposes such as cleaning, gardening, agricultural and irrigation etc.

4. Award of XV Finance Commission: The XV Finance Commission has recommended an allocation of Rs. 2,36,805 Crore to rural local bodies(RLBs) for the period 2021-26, out of which, 40% of the recommended grant is basic grant (untied) and the remaining 60% is tied grant. The RLBs shall, as far as possible, earmark one half of the tied grant to be utilized for strengthening/ augmentation of drinking water sources, provision of drinking water for the livestock, , rain water harvesting, water recycling/ rejuvenation of water bodies in addition to

maintaining existing water supply infrastructure. This will improve access to water supply services in the villages

5. Training Design: Training forms important aspects of human resources development to enhance the efficiency and effectiveness of people at work by providing them functional knowledge, skills and attitudes required for the accomplishment of assigned responsibilities. The training design aims to create an optimal learning experience that aligns with the needs of the target audience and achieve the desired learning outcomes Clear and measurable learning objectives outline what participants should be able to accomplish after completing the training.

6. Training / Learning Objectives: The learning objectives are designed to provide participants with a comprehensive understanding of the concepts, initiatives, and strategies related to achieving water sufficiency in villages. By acquiring the necessary knowledge and skills, participants will be better equipped to support and implement water sustainability measures in their respective communities

1. Understand the concept of water-sufficient villages and its importance in achieving the Sustainable Development Goals
2. Familiarize participants with the objectives, components, and guidelines of the Jal Jeevan Mission
3. Gain knowledge about the XV Finance Commission's award and its provisions related to improving water supply in villages
4. Develop skills in operation and maintenance (O&M) practices for sustainable water supply systems
5. Recognize the need for professionalization in water supply services in villages
6. Gain knowledge about rainwater harvesting techniques and principles and processes of water recycling and their applications in villages.
7. Understand the role and functions of Gram Panchayats in water management and promoting water sufficiency in villages
8. Understand the steps involved in developing a comprehensive water sufficiency plan, including stakeholder engagement and data analysis

7. Session Plan: The following is the model session plan for a 3 days of ToT for State/District /Block level Master Trainers. The timing of the training can be altered based on local situation, learning needs and profile of the participants.

Session	Duration	Session Objectives	Content
		Day 1	
Session 1	45 Min	Inauguration of the Training Programme.	1. Registration, Self-introduction 2. Introduction, norms setting and expectations of the participants; 3. Sharing design of the training, its objectives and matching it with the expectations of the participants;
Session 2	75 Min	Training Facilitation skills-	Training Methodology & Pedagogy
Session 3	75 Min	Concept of water-sufficient villages and its importance in achieving SDGs	1. Concept of water-sufficient villages 2. Inter -linkages with other SDGs 3. Theme 4 Targets & Indicators
Session 4	90 Min	Har Ghar Jal- Making Water Availability to all Providing FHTC for drinking water as per JJM guidelines	1. Objectives, components, and guidelines of JJM 2. Providing FHTC in villages 3. Implementation of water supply program in Convergence mode
Session 5	60 Min	XV FC s award and its provisions related to improving water supply in villages	1.XV FC award 2.Utilization of allocations for drinking water, RWH & Water Recycling
		Day 2	
Session 1	30 Min	Recap of day -1 learning	
Session 2	75 Min	O&M practices for sustainable water supply systems	1. O&M practices for sustainable water 2. O&M approaches, including preventive maintenance

			3. Revenue Management
Session 2	75 Min	Professionalization in water supply services in villages	1. Need for professionalization in water supply services 2. Contract Management of water supply services
Session 3	180 Min	Group work on action planning for water sufficient village	
Day 3			
Session 1	30 Min	Recap of day 2 learning	
Session 2	75 Min	Rainwater harvesting, water recycling and water efficient Agriculture	1. RWH Importance 2. Principles of water recycling 3. Water efficient Agriculture 4. Potential benefits for water sufficiency
Session 3	60 Min	Role and functions of GP in water management	1. Role and functions of GPs in making the village water sufficient 2. community engagement, participation
Session 2	75 Min	Planning for water sufficient villages	1. Stakeholder engagement and data analysis 2. Planning for water sufficiency at the village level
Session 3	90 Mon	Group Presentation on action planning	Preparation of Model GPDP on for water sufficient villages
Session 4	30 Min	Concluding remarks and Valediction	

8. Outcomes Expected from this ToT Programme

It is expected that this residential Training Programme will enrich the master trainers with substantial knowledge, skills and attitude about the rationale and policy of thematic approach to planning for delivering on SDGs in GPs and other tier PRIs. The trainers will understand their own roles and responsibilities and the tasks to be performed including grooming the trainers down the line and developing appropriate learning materials in the local language to suit multi-level stakeholders. Participants will have an

a) Enhanced understanding of the concept and significance of water-sufficient villages in the context of SDGs.

b) Acquire in-depth knowledge of JJM and the XV FC award, including their, guidelines & implementation strategies.
c) Develop skills in the O&M of water supply systems, revenue management, and professionalization of water supply services in villages.
d) Gain expertise in rainwater harvesting techniques and water recycling processes.
e) Understanding of the role of Gram Panchayats in water management and their potential in making villages water-sufficient.
f) Develop the capacity to plan for water sufficiency in villages.

9. Training Modules / Training Content: The training module prepared for this theme include Training Design , Session wise FAQs, learning material, MCQs and links to reference material and video films etc. The material is premised on creating a friendly learning environment, conducive for self-reflection. The content is organized in a logical and structured manner to support effective knowledge transfer.

10. Training Approach: The participants are given basic introduction to the theme and relevance of SDGs to plan for achieving the targets. Local indicators framework enable the Gram Panchayats to understand the programmatic and financial priorities. The targets are placed in a right based frame to prepare GPDP. Each GP has to identify action points related to the theme as suggested by the MoPR for formulating GPDP. Opportunities for reflection and action planning is provided to ensure participants can apply the knowledge and skills gained during the training. The facilitators will employ various strategies and techniques to engage learners to ensure their understanding and retention of the material.

11. Training Methodology: The training methodology will essentially be participatory and interactive, combining various methods like small presentations followed by discussion, brainstorming, experience sharing, group work, case studies, short videos/ films etc. The resource person will facilitate the process of learning through building on existing knowledge and skills of participants. It combines elements of instructional psychology, adult learning principles, and effective communication to deliver impactful training programs. After conducting ToT for SLMTs the respective SIRDPR will take the responsibility for grooming the trainers down the line and developing appropriate learning materials in the local language to suit multi-level stakeholders.

12. Conducting the Training Programme: The training facilitator takes charge of the programme and follows a broad sequence

a) Introduce the training programme with overall session plan as per schedule
b) At each stage of the content delivery adopt an interactive methodology and participatory styles to ensure that , the quality of delivery is not get diluted as it gets cascaded
c) Begin each sub-session with a predictive question to the participants related to the expected outcome of that sub-session. The indicative questions are given in FAQs which the facilitator can ask, the participants to discuss in groups and note down key points

d) Make a brief presentation covering the topic and then the session could be opened for discussion and experience sharing for conceptual clarity on the subject.
e) Encourage participants to share positive as well as negative experiences from field
f) While organizing field training to elected representatives on LSDGs certain themes could be delivered in an immersive mode through engagement with a village. This will help the learners absorb a lot of theory naturally, which may not be explored otherwise, as few people spend time with the reading material. Experiential learning/immersive learning would motivate the learners to actually bring out the desired impact on the ground.
g) Conduct a recapitulation session at the beginning of day 2 & 3 for the participants to reflect on the previous day's learning

13. Guidelines for Training Facilitators: The facilitators may follow the following guidelines

a) Ensure the training arrangements are OK and functional by visiting the training venue in advance
b) Before commencement of the training session refer to learning material, FAQs and the relevant guidelines on the theme for presenting the subject matter in sequence within the stipulated time
c) Be proficient and know the subject matter related to the theme. Read widely beyond the information provided in the training module
d) Where possible share views with co-facilitators or other people conversant with the subject matter
e) Prepare own power point presentations, and other audio-visual support aids based on the content in each topic .Before commencement of the session ensure that all the training materials are in place and ready to be used
f) Be prepared to handle any training related problems as they arise in the course of the training.
g) Minor changes/innovations can be made in the content as per local needs and time-spills etc.
h) Have a positive attitude about the training, the participants and other co-facilitators.
i) All the salient points that featured in the previous day's session shall be briefly highlighted before beginning of day session for consolidation of learning.

14. Assessment and Evaluation: The progress of learning of the participants will be assessed by conducting online a pre-test before the beginning of the training program and a post-test at the end to measure participants' knowledge and understanding of the subject matter. Comparing this scores can indicate the progress made during the training.

Vol II - Learning Material
Theme 4: Water Sufficient Village

Chapter 1: Concept and Significance of Water Sufficient Villages

A village with Functional House Tap Connections to all, with targeted standard of quality water supply, good water management and abundant water availability for agriculture and all needs, and conserving its water ecosystem

Learning Objectives

- Significance of theme 4
- Inter-linkages of Theme 4 with other SDGs
- Theme-Target & Indicators
- Interpretation of Indicators &Target Values
- Outcomes of Indicator Framework
- Resources and stakeholders

1.1 Introduction: Water is essential for life and every citizen has a right to safe and adequate drinking water. As per the 73rd Amendment of the Constitution, providing drinking water to all rural households is included in the 11th Schedule. The Government of India is implementing a flagship programme, Jal Jeevan Mission (JJM) to provide potable drinking water to all households in the rural areas. But provision of drinking water cannot be done by the government functionaries only. And Gram Panchayats have an important role to play in successful implementation of the program in terms of planning for drinking water security in the villages such as maintenance of assets like hand pumps, tube wells, pipe network and to collection of some user fees and payment of energy charges, etc. This chapter discusses the, importance of drinking water, drinking water sources, operation and maintenance, role of village water and sanitation committee (VWSC) for providing safe drinking water to all households with in the village.

1.2 About the Theme: The quality of life and well-being of citizens is directly dependent on having access to safe and adequate water supply throughout the year at the individual household level. The SDG –Goal 6, relates to ensuring availability and sustainable management of water and sanitation for all. The Ministry of Panchayati Raj has initiated thematic approach to planning through aggregating 17 SDG goals into 9 broad themes for localization of SDGs at grass-root level and their attainment through concerted and collaborative efforts of all concerned stakeholders. Of this 9 themes, the theme 4 is Water Sufficient Villages.The theme 4 Water Sufficient Village is cross-cutting in nature and can be mapped to other themes. The Theme 4 is connected to more than one theme such as Theme 1- Poverty free and enhanced livelihoods village, Theme 2 - Healthy village and Theme 5 - Clean & Green and Theme 6 - Self-sufficient infrastructure in village etc.

1.3 Theme-Target & Indicators: The theme Water Sufficient Village has 9..targets and 24 indicators It is essential to assess clearly how the Gram Panchayats is able to deliver on theme

4 .This requires careful selection of targets for measuring achievement. .The selected targets must able to deliver on the strategic goals. They should be clear and easily understood by stakeholders who will be using it. The Indicators under each target focuses on a small, manageable set of information that can assist to take strategic decisions to address problem areas. The broad theme-targets and the indicators related to Water Sufficient Village are given below

S.no	Target	No of Indicators	Indictors
1	Providing access to clean Water to all households and public buildings in the villages	6	1. Percentage of Functional Household Water Tap connections (FHTC) 2. Percentage coverage of Water supply in schools, Anganwadis and public institutions 3. No of days of supply of water during the year 4. Whether the periodic cleaning of Over Head Tanks (OHTs), Ground Level Reservoirs (GLRs) and Hand Pump platforms in rural areas and providing drinking water with effective chlorination. 5. Percentage of Water sample testing using Field Test Kit (P) 6. Whether the drinking water source is well maintained. No waste water enters into the source and well protected from any contamination (Y/N)
2	Provide access to Sanitation in the villages	2	1. Percentage of functional IHHL Toilets 2. Percentage Availability of toilets separately for men and women at public buildings, Schools, markets, Anganwadis (child friendly toilets)
3	Achieve ODF Sustainability	3	1. Percentage of community and institutional Toilets having water facility & soap for hand washing. 2. Whether the of public and institutional toilets are kept clean 3. Percentage of HH having grey water discharge facility at HH level or connected to grey water drainage line

4	Grey Water management	2	1. Percentage of institutions, / buildings having grey water drainage line 2. Per capita supply of water LPCD in the village (Target 55LPCD as per JJM norms
5	Per capita availability of water in villages	2	1. Whether Water supply unhindered to tail end HH (Y/N) 2. Percentage of public buildings having functional rainwater harvest mechanisms which are maintained Well
6	Construction of rain water harvesting and recharge works	2	1. Percentage of houses are having functional rainwater harvest mechanisms which are maintained well 2. Percentage of village water bodies/ Tanks de-slugged / deepened or special repair carried out
7	Safeguarding of water bodies	1.	1 Whether the VWSC is functional in the GP (Yes/No)
8	Constitution of VWSCs in each Gram Panchayats	2	1. Water users association 21. Agriculture holdings covered in WUA to the total Agricultural holdings 2. Whether Functional WUA
9	Water efficient Agricultural practices	4	1. Proportion of area under drip/micro irrigation to total irrigated land 2. Proportion of area under drip/micro irrigation to total irrigated land 3. Proportion of farmers practicing Integrated farm management practices 4. Proportion of farmers having wells but don't adopt micro irrigation

1.3.1 Indicators under Aspirational Block Program: Aspirational Block Development Programme (ABDP) is a development initiative of Government of India, aimed at improving the performance of areas that are lagging on various development parameters. It was announced in the Union Budget 2022-23. The ABDP covers 500 Blocks in 213 districts across 31 states and UTs. It focuses on the strength of each Block identifying low-hanging fruits for

immediate improvement and measuring progress by ranking Blocks on regular basis. Blocks are encouraged to catch up with the best Block within their state, and subsequently aspire to become one of the best, by competing with, and learning from others The ABDP is essentially aimed at localizing Sustainable Development Goals, leading to the progress of the nation. The following are the performance indicators of ABDP under Drinking water & sanitation

1. Percentage of HHs with FHTC against the total number of HHs
2. Percentage of villages declared open Defecation Free (ODF) plus

1.4 Interpretation of Indicators &Target Values: Each indicator comprises of a number of action points and relevant target values. The Panchayats should initiate action as may be necessary to achieve the targets

a) Functional House Tap Connections to all Households and Public Institutions
b) Ensuring adequate and safe water supply to the villagers.
c) Meet minimum water quality standards and be readily and conveniently accessible at all times and in all situations
d) The Panchayat need to plan for appropriate utilisation of ground water/ surface water / roof water for satisfying the drinking water demand. It should avoid excessive dependence on a single source especially ground water.
e) Adoption of appropriate technology.
f) Undertaking rain water harvesting at household and at community levels.
g) Revival of traditional water harvesting structures (ponds, tanks, etc.).
h) Recharging and maintenance of drinking water sources, and
i) Recycling and reuse of water (kitchen gardens, reuse of waste water for agricultural purposes).

1.5. Outcomes of Indicator Framework: Gram Panchayat is playing vital role for providing safe drinking water and creating awareness to rural households, on consuming safe drinking water. Indirectly Gram Panchayat is contributing social and economically growth of families, and it ultimately leads to community sustainability with in the village. These benefits are,

a) Reduction in medical expenses on account of water-borne diseases.
b) Reduction in household debt on account of medical expenses.
c) Improved productivity and financial gains on account of fewer working days being lost due to water-related illnesses.
d) Financial savings due to avoiding purchase of water.
e) Reduction in infant morbidity and mortality, and
f) Promotion of gender equity as it relieves women of this time-consuming chore of fetching water.

1.6. Resources and stakeholders: Jal Jeevan Mission, is envisioned to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India. The programme will also implement source sustainability measures as mandatory elements, such as recharge and reuse through grey water management, water

conservation, rain water harvesting, Further to ensure that the Panchayats are adequately funded, for providing basic services the XV Finance Commission has recommended 30% of total allocation is to be earmarked for drinking water, rain water harvesting and water recycling.

If a Gram Panchayat is to become a 'Water Sufficient Village', it would require full support of departmental functionaries of Water Resources, Drinking Water & Sanitation, Rural Development, Land Resources, Health & Family Welfare, Women and Child Development and Panchayati Raj among others. In addition, the support of non-Governmental organizations, College students, Youth Organizations such as the NYKS & the NSS can also be taken wherever required for making the village water sufficient. It is also important for the Gram Panchayat to work with the local community to bring about behavioural changes for faster realization of SDG 6 and theme 4.

1.7 Test your Knowledge, fill up the blanks:

1. The Government of India is implementing a flagship programme_____ to provide potable drinking water to all households in the rural areas.
2. The theme Water Sufficient Village has _____targets and _____ indicators.
3. The XV Finance Commission has recommended _____% of total allocation is to be earmarked for drinking water, rain water harvesting and water recycling.
4. As per JJM norms the target of daily water supply is _____ LPCD.
5. The Gram Panchayat to work with the local community to bring about behavioral changes for faster realization of SDG _____ and targets of theme 4.

Chapter 2: Har Gar Jal- Initiatives of Jal Jeevan Mission

Target 1: Providing access to clean Water to all households and public buildings in the villages
Target 5: Per capita availability of water in villages

Learning Objectives

- Objectives of Jal Jeevan Mission
- Components of the Jal Jeevan

2.1 Introduction: Functional house tap connections in villages are instrumental in improving the quality of life, health, and economic prospects of rural communities. Access to clean and safe water at home empowers villagers, enhances productivity, and fosters community development, ultimately contributing to the sustainable and holistic growth of rural areas.

2.2 15th Finance Commission Grants for Water supply & sanitation: The XV Finance Commission has recommended an allocation of Rs. 2,36,805 Crore to rural local bodies(RLBs) for the period 2021-26, out of which, 40% of the recommended grant is basic grant (untied) and the remaining 60% is tied grant. The RLBs shall, as far as possible, earmark one half of the tied grant to be utilized for strengthening/ augmentation of drinking water sources, provision of drinking water for the livestock, , rain water harvesting, water recycling/ rejuvenation of water bodies in addition to maintaining existing water supply infrastructure. The remaining one half is for providing sanitation in the villages, achieve ODF Sustainability and grey water management. The 15 Finance Commission has not distinguished between operation & maintenance (O&M) and capital expenditure within the categories of tied grant. It is for the Panchayats to ensure that funds are first allocated and utilized towards creating infrastructure, usage and management arrangements for drinking water supply & sanitation services.

2.3. Jal Jeevan Mission flagship scheme for Water supply: Gram Panchayats (GPs) have a constitutional mandate to supply and manage drinking water to the rural households in India. The Ministry of Jal Shakti of the Government of India has come out with an ambitious programme Jal Jeevan Mission that aims at providing piped water supply at every door step to all the 180 million rural households by 2024. It encourages a participatory process in fulfilling the drinking water requirements of rural communities. The broad objectives of the Mission are:

a) to provide Functional house tap connection (FHTC) to every rural household schools, Anganwadi centres, GP buildings, health centres, wellness centres and community buildings and to monitor FHTC;
b) to prioritize provision of FHTCs in quality affected areas, villages in drought-prone and desert areas etc.;
c) to promote and ensure voluntary ownership among local community by way of contribution in cash, kind and/ or labour and voluntary labour (*shramdaan*);
d) to assist in ensuring sustainability of water supply system, i.e. water source, water supply infrastructure, and funds for regular O&M;

e) to empower and develop human resource in the sector such that the demands of construction, plumbing, electrical, water quality management, water treatment, catchment protection, O&M, etc. are taken care of in short and long term;
f) to bring awareness on various aspects and significance of safe drinking water and involvement of stakeholders in manner that make water everyone's business.

2.4. Components of water supply: The mission ensure safe and adequate drinking water supply, and it seeks to empower communities to manage their water resources effectively. The following are its components

a) **100% FHTC at GP level:** Each Gram Panchayats need to verify and confirm data on household water tap connections, including the number of (FHTCs, This data should include information on the type of water supply system, sources of water, water quality, and seasonal variations in water supply. The plan is to provide every household with three delivery points (taps) for various purposes. One tap will be funded by the mission, while households will bear the cost of extending the pipeline to the other two taps. All FHTCs will be linked to Aadhar numbers. Community contribution will be required, varying from 5% to 10% of the project cost depending on the population and location.
b) **Water supply System Sustainability:** There are Single Village Schemes (SVS) and Multi-Village Schemes (MVS). SVS are managed by the Gram Panchayat or its sub-committees, while MVS are connected to a regional water supply scheme. The Public Health and Engineering Department (PHED/RWS) is responsible for infrastructure construction in both types of schemes, with the PHED/RWS Department ensuring water delivery to the village's storage facility for MVS. All assets will be geo-tagged.: The focus is also on upgrading existing water supply infrastructure to provide 100% FHTC.
c) **Source Sustainability:** Achieving 100% FHTC requires source sustainability measures at the Gram Panchayat level. This includes augmenting existing water sources, groundwater recharge, rainwater harvesting, and managing greywater for reuse and recharge. Rejuvenating traditional water bodies and implementing watershed management are also important. Removal of encroachments in water-spread areas and subsequent renovation are necessary.
d) **Water Quality Management:** Villages with water quality issues must address safety concerns. In-situ treatment technologies can be explored for villages with groundwater availability but quality issues. Drought-prone areas may consider multiple water sources or supply from distant sources. Villages with serious water quality issues can set up community water purification plants. Gravity-based or solar-based water supply schemes can be explored for remote hilly areas.
e) **GP level Human Resources:** Capacity building at the Gram Panchayat level is crucial. Human resources should be trained in construction, plumbing, electrical work, chlorination, water quality management, treatment, catchment protection, and operation and maintenance (O&M) of facilities. PM Koushal Vikas Yojana can be used to develop local HR through training centers.

f) **Convergence of Scheme funds:** To achieve the mission's goals, Gram Panchayats are encouraged to utilize other schemes implemented at the GP level, such as water conservation, repair and restoration of water bodies, watershed management, and skill training programs

2.5 Per capita availability of Water in Villages: The Panchayat should ensure Long-term sustainability of drinking water supply to provide minimum service level of 55 litre per person per day of potable water on regular basis. Providing piped water supply for drinking, hand washing and use in toilets in public institutions like schools, Anganwadi centres, health centres and public places. It may require augmentation and retrofitting of existing water sources creation of new sources such as bore well recharge, rainwater harvesting viz. check dams, rehabilitation of water bodies, watershed management, etc. Access to clean and safe drinking water is essential for the overall health, well-being, and development of communities, especially in rural areas

2.6. Community Involvement: The aim of the scheme is to promote a "sense of ownership" among community and user groups to ensure the successful implementation and long-term operation of the piped water supply infrastructure. This will be achieved through transparency and the involvement of various organizations. The GP/VWSC/Paani Samiti will oversee the implementation of the piped water supply infrastructure and related source development at the village level. In most villages, the community will be required to contribute 10 percent of the capital cost in cash, kind, or labour. However, in hilly and forested areas, as well as in the North-eastern and Himalayan states, and villages with over 50 percent SC and/or ST population, the community contribution will be reduced to 5 percent. To support the village community in managing water resources and implementing water supply infrastructure, NGOs, voluntary organizations, women self-help groups (SHGs) under NRLM/SRLM, and other partners will be involved. These organizations will assist in creating awareness, building capacity, and planning and implementing the schemes. They will also mobilize the local communities, understand their needs and aspirations, and help them map available resources through participatory approaches.

Provision of FHTC to every Household /School/AWC to provide drinking water @55lpcd by 2024

2.7 Test your Knowledge: Fill in the blanks

1. Jal Jeevan Mission that aims at providing piped water supply at every door step to all the 180 million rural households by _____Year.
2. The focus of JJM is on upgrading existing water supply infrastructure to provide _____% Functional Household Tap Connection
3. Single Village water supply Scheme is managed by the ¬¬¬¬¬¬¬_____or its sub-committee.
4. Community soak-pits and waste stabilization ponds, can ve constructed under..... scheme
5. PM Koushal Vikas Yojana can be used to develop local, ---------- through training centers.
6. The community will be required to contribute _____ percent of the capital cost in cash, kind, or labor of construction new water supply scheme.

Chapter 3: Improved Water & Sanitation Services in Villages

Target 2: Provide access to Sanitation in the villages
Target 3: Achieve ODF Sustainability
Target 4: Grey Water management

Learning Objectives

- Importance of sanitation in Villages
- Role of Panchayat in maintaining village sanitation
- Achieving Open Defecation Free status
- Grey Water Management

3.1 Introduction: Sanitation services are integral to the health, well-being, development, and sustainability of villages. They contribute to various aspects of community life, fostering a healthier, cleaner, and more prosperous environment for all residents. Proper sanitation services, including access to clean water, toilets, and waste management, are essential to prevent the spread of waterborne diseases such as diarrhea, cholera, and typhoid. These services protect public health and reduce mortality rates.

3.2 Importance of sanitation in Villages: Sanitation services are of paramount importance in villages for various reasons:

a) **Disease Prevention:** Proper sanitation services, including access to clean water, toilets, and waste management, are essential to prevent the spread of waterborne diseases such as diarrhea, cholera, and typhoid. These services protect public health and reduce mortality rates.
b) **Child and Maternal Health:** Sanitation services contribute to better child and maternal health outcomes. Access to clean water and hygienic facilities reduces the risk of infections and complications during pregnancy and childbirth.
c) **Hygiene and Cleanliness:** Sanitation services enable villagers to maintain personal hygiene, cleanliness, and a healthier living environment. This, in turn, prevents the transmission of diseases and improves overall well-being.
d) **Education:** Availability of sanitation facilities in schools encourages regular attendance and participation, particularly among girls. This leads to improved educational outcomes and better future prospects for children.
e) **Dignity and Empowerment:** Access to clean toilets and proper sanitation services preserves the dignity of individuals and empowers them, especially women and girls, by providing privacy and security.
f) **Environmental Protection:** Proper waste disposal and sanitation services prevent pollution of water bodies, soil, and air. This safeguards the environment, ecosystems, and natural resources for future generations.
g) **Tourism and Livelihoods:** Improved sanitation services enhance the appeal of villages for tourism and can lead to economic opportunities, such as local businesses and services catering to visitors.

h) **Social Equality:** Equal access to sanitation services promotes social equality and reduces disparities in health outcomes between different sections of the population.
i) **Disaster Preparedness:** Sanitation services are crucial during disasters and emergencies to prevent the outbreak of diseases, ensuring a safer and more effective response and recovery.
j) **Sustainability:** Proper sanitation services contribute to the sustainable use of resources and the preservation of the local environment, making villages more resilient to environmental challenges.

3.3 Role of Panchayat in maintaining village sanitation: Maintaining good sanitation in villages through a Gram Panchayat involves a combination of efforts and strategies:

a) **Regular Monitoring:** Establish a system to regularly monitor the cleanliness and sanitation conditions in the village. Conduct inspections to ensure proper waste disposal, clean water sources, and hygienic practices.
b) **Waste Management:** Implement proper waste segregation and disposal mechanisms. Promote composting and recycling to minimize waste and its impact on the environment.
c) **Public Toilets and Facilities:** Ensure the availability and cleanliness of public toilets and sanitation facilities. Regularly clean and maintain these facilities to encourage their use.
d) **Behavioural Change:** Conduct awareness campaigns and workshops on the importance of sanitation and hygiene. Promote behavioural change by educating the community about proper practices.
e) **Community Engagement:** Involve the community in sanitation initiatives. Encourage them to take ownership and participate in maintaining cleanliness in public spaces.
f) **Drinking Water Safety:** Ensure a clean and safe drinking water supply. Regularly test and treat water sources to prevent waterborne diseases.
g) **Health and Hygiene Awareness:** Educate villagers about basic health and hygiene practices, such as hand washing, proper food handling, and preventing the spread of diseases.
h) **Collaboration:** Collaborate with local NGOs, government departments, and other stakeholders to leverage resources, knowledge, and expertise. Encourage community participation and ownership to ensure the continuation of good practices

3.4 Achieving Open Defecation Free status: To male village ODF free involves several steps:

a) **Awareness and Education:** Raise awareness about the importance of sanitation and hygiene through campaigns, workshops, and community meetings. Involve the community in decision-making, planning, and implementation of ODF initiatives. Encourage them to build and use toilets
b) **Toilet Construction:** Promote the construction of individual household toilets or community toilets using government schemes, subsidies, and community contributions.

c) **Usage of Toilets:** Encourage behavioural change by promoting the use of toilets and proper waste disposal practices. Regularly monitor toilet usage and maintenance. Conduct verification by independent agencies to confirm ODF status
d) **Incentives and Recognition:** Provide incentives to households and communities for achieving ODF status. Recognize and celebrate milestones.
e) **Sanitation Infrastructure:** Ensure access to safe and sustainable sanitation facilities, along with facilities for solid waste management.
f) **Sustainability:** Develop plans for long-term maintenance of toilets and sanitation facilities. Involve local institutions like Gram Panchayats to manage and sustain ODF status.
g) **Capacity Building:** Train local leaders, volunteers, and health workers to support ODF efforts and ensure proper maintenance.
h) **Collaboration:** Collaborate with NGOs, government agencies, and other stakeholders to pool resources, knowledge, and expertise.

3.5 Grey Water Management: By implementing a comprehensive approach that combines awareness, infrastructure, regulations, and community involvement, a Gram Panchayat can significantly improve greywater management in villages, contributing to better environmental and public health outcomes A Gram Panchayat can take several steps to improve greywater management in villages:

a) **Awareness Campaigns:** Conduct awareness campaigns to educate villagers about greywater, its sources, and the importance of proper management to prevent contamination and health risks.
b) **Promote Reuse:** Encourage the reuse of greywater for non-potable purposes like irrigation, gardening, and cleaning. Educate villagers about appropriate methods to treat and reuse greywater safely.
c) **Greywater Collection Systems:** Implement simple and cost-effective greywater collection systems that divert and channel greywater away from homes to designated areas for treatment or reuse.
d) **Treatment Mechanisms:** Introduce low-cost treatment methods such as filtration, settling tanks, and constructed wetlands to reduce contaminants in greywater before reuse.
e) **Regulations and Guidelines:** Develop and enforce guidelines for greywater management, specifying appropriate methods of collection, treatment, and reuse.
f) **Community Participation:** Involve the community in planning and implementing greywater management solutions. Encourage them to take ownership and adopt proper practices.
g) **Infrastructure Development:** Invest in infrastructure for greywater management, including storage tanks, distribution systems for reuse, and treatment facilities.
h) **Monitoring and Maintenance:** Establish a system for regular monitoring and maintenance of greywater management infrastructure to ensure proper functioning and prevent blockages or failures.

i) **Regulations and Enforcement:** Enforce regulations related to greywater management to ensure compliance and prevent improper disposal that could harm the environment and public health.

3.6 Test your Knowledge: Fill in the blanks

1. Proper sanitation services, including access to clean water is essential to prevent the spread of----------
2. Access to clean toilets and proper sanitation services preserves the dignity of……
3. Improved greywater management in villages, contribute to better ---------- and public health outcomes
4. Panchayats need to educate villagers about basic hygiene practices, such as ---------- and proper food handling
5. Encouraging behavioral change is necessary to promote use of --------- and proper waste disposal practices

Chapter 4: O&M of Water Supply System and Revenue Management

Target 9: Ensure that all girls and boys have access to quality early childhood development, care and pre-primary education.

Learning Objectives

- Safe Drinking Water Supply in Gram Panchayats
- Operation & Maintenance
- Components of O&M of Water Supply
- Ensuring drinking water safety
- Water Quality Monitoring and Surveillance
- Testing of water quality using Field Test Kit
- Revenue Management System
- Collection of User Charges for Service Delivery

4.1 Introduction: Every rural household has drinking water supply in adequate quantity of prescribed quality on regular and long-term basis at affordable service delivery charges leading to improvement in living standards of rural communities. The scope of water supply service in a GP starts from planning of water supply system to source treatment, transmission, storage and equitable distribution. The GPs will be able to improve service delivery by professionalization of Operation and Maintenance **(**O&M) of water assets. The concept of O&M is explained below

4.2 Operation: Operation refers to the everyday running and handling of a water facility, involving the actual delivery of services. It mainly includes. major day-to-day operations required to get safe drinking water to users (e.g., starting and stopping a motorized pump, supply of energy/fuel and the control of valves),and correct handling of facilities by users to ensure sustainability (e.g., handling of a rope and bucket at a well, hand pump use, and use of taps at a stand post).

4.3 Maintenance: It refers to the activities aimed at sustaining the water supply in a proper working condition. It can be divided into

a) **Preventive maintenance:** regular inspection and servicing to preserve assets and minimize breakdowns;
b) **Corrective maintenance:** minor repairs and replacement of broken and worn out parts to sustain reliable facilities; and
c) **Repair (crisis maintenance):** responses to emergency breakdowns and user complaints to restore failed supply.

4.4 Important of O&M: Operation and maintenance is very important part while implementing the drinking water schemes in the village, because any equipment or machinery, the village water supply scheme also requires proper care, not only in running (operating) it but also in regular maintenance. If Gram Panchayat does not do proper, maintenance or inadequate maintenance ultimately its lead to:

a) Breakdowns due to non-functioning of any component. And it leads to (avoidable) expenditure on account of skilled labour and replacement of parts.
b) The disruption in water supply leads to inconvenience to the users.
c) If this disruption continues for a long time, it will affect sanitation and hygiene at the household and community level
d) Improper maintenance affects the life of some spare parts, which results in their frequent replacement and higher expenditure as compared to that required in timely replacement.

4.5 In Village Water Supply Schemes: To provide FHTCs to all rural households, in-village water supply infrastructure will be created through Single Village Scheme (SVS), Multi Village Scheme (MVS) and Solar power-based stand-alone schemes for scattered areas. The Gram Panchayat and/ or its subcommittee, i.e. Village Water and Sanitation Committee (VWSC) / Paani Samiti/ User Group, etc. will be responsible to plan, implement, manage, operate and maintain in-village water supply infrastructure and water resources including treatment and reuse of grey-water protection of drinking water source(s to meet drinking and domestic needs.

4.6 Components of in village Water Supply Scheme: The Piped Water Supply Scheme Comprises of following components. .All these components need to be taken into account whilepreparing annual O&M action plan.

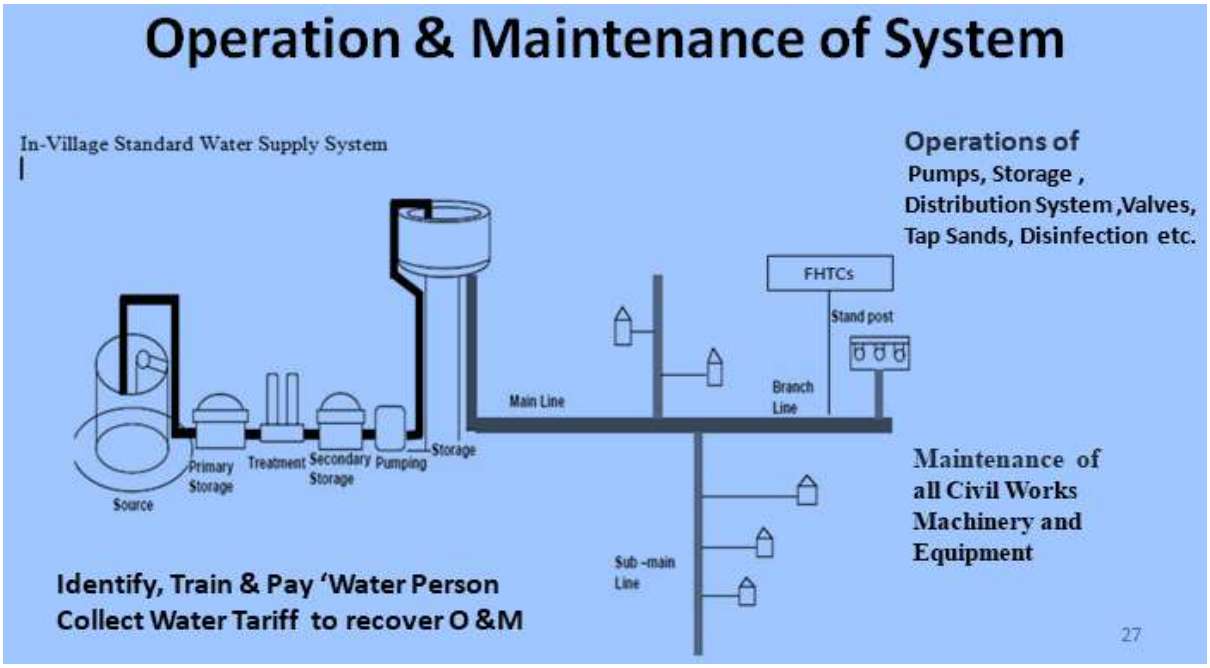
S.no	Component	Description
1	**Source/ intake works**	Intake works are the surface water sources-such as Open Well, Tube Well, Hand pump, Pond etc for withdrawal of water and its discharge into an intake conduit through which it will flow into the water works system. The second source is Ground Water i,e the water located beneath the ground surface. Rain water that percolates into the ground becomes ground water
2	**Raw water storages**	Raw water is stored in large water tanks/ reservoirs to avoid water shortages and abrupt water quality change
3	**Transmission System**	The transmission system deliver raw water / treated water from the source to the treatment plants / to the storage reservoirs for supply into distribution networks

4	**Filtration unit**	The raw water is treated to make it potable. The common treatment include. Slow Sand filtration, Reverse Osmosis & Chlorination etc.
5	**Pumping Machinery**	Pumping machinery and pumping station distribute the water through the distribution network The machineryare subjected to wear, tear.
6	**Disinfection.**	The disinfection of water kills bacteria, viruses and parasites. The methods of disinfection include chlorination, bleaching powder ozone, ultra-violet light & silver ionization etc.
7	**Balancing Reservoir**	Balancing reservoir has number of service reservoirs to ensure proper distribution through independent feeder mains
8	**Distribution system**	Distribution system deliver safe drinking water to the consumer at adequate pressure in sufficient quantity, This include main Line, Branch Pipeline House hold Tap etc.

4.7 Components of O&M of Water Supply: The O&M is very important in implementing the drinking water schemes in the village. If GPs do not attend to proper maintenance, the system may breakdown leading to avoidable expenditure. The disruption in water supply also causes inconvenience to the users. The following are the components of O&M.

S.no	Component	Activities Carried Out
1	Technical Management	1.**Daily Operations**: • Pump, Solar Panel, Storage, Distribution pipes, valves, Disinfection, Connectivity, availability and water pressure till end house-holds 2.**Maintenance & Repairs**: • Pump, Solar Pane, Storage, Distribution-pipes, valves, Disinfection, Concept of life cycle cost ,repairs & maintenance, preventive maintenance and time bond replacement of parts • **Water Quality Management**: Identify causes of Contamination, Mitigation Measures, Water quality, monitoring & surveillance at consumption and distribution points, Sanitary surveillance of water source / points, Disinfection of water prior to supply, residual chlorine >0,2mg/ l

2	Financial Management	• O&M expenditure • O&M Revenue • Fixing Water Tariff and Collection
3	Institutional Management	• Role of Gram Sabha, Gram **Panc**hayat, VWSC • Capacity Building & training of VWSC & Staff • Awareness creation / IEC activities • Complaint redressal



4.8. Ensuring drinking water safety: The GP can play a pivotal role in protecting its drinking water sources by being informed (about possible sources and effects of contamination), generating awareness and making residents adhere to conservation and protection measures for drinking water sources. The GP should periodically undertake monitoring and surveillance of water quality and sanitary surveys to assess the status of drinking water quality.

a) **Water quality monitoring:** It refers to the routine and systematic testing of water quality and chlorine levels through recommended protocols. The main purpose of this monitoring is to "be sure about it" and also to take immediate corrective steps when a problem appears. This is mostly done at the water provider level (Gram Panchayat level).

b) **Water quality surveillance:** It refers to overseeing the functioning of rural water supply systems at higher levels or by the community itself so as to ensure acceptable drinking water quality.

c) **Sanitary survey**: It refers to on site examination of existing and potential quality risks or hazards in and around water supply systems.

4.9 Effects of poor water quality: Mostly, they are diarrhoeal diseases, which are caused by the consumption of water contaminated by faecal matter, as well as by inadequate sanitation and hygiene. Poor water quality also leads to diseases such as jaundice and typhoid. Children and people with poor immune systems (including people living with Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome are more vulnerable to water-borne diseases.

4.10 Water Quality Monitoring and Surveillance (WQMS): Water testing is very important for monitoring the operation of water supply, verification of the safety of drinking water, investigation of disease outbreaks, validation process and preventive measures. Water quality testing tools need to be used for deciding safety of drinking water: at the source; within a piped distribution system; or at the end of consumer.

4.11 Sanitary inspection: This is an investigative activity to identify and evaluate factors associated with drinking water that may pose a risk to health. The inspection takes care of prevention and detection of risks and help in taking timely remedial action before public health problems occur. Also, identification of the sources of outbreaks of water-borne disease get known timely and corrective action as may be required get taken promptly.

4.12 Testing of water quality using Field Test Kit (FTK): The Gram Panchayat and VWSC/ Paani Samiti/ User Group, etc. will ensure to test 100% drinking water sources including private sources and sanitary inspection under its jurisdiction using FTK. Gram Panchayat should identify train and appoint 5 women from local community to conduct water quality tests using FTKs/ bacteriological vials and report the results The test results and sanitary inspection report will be submitted to the concerned Rural Water Supply (RWS) Department.

4.13 Revenue Management System: The revenue management system is an important aspect of any water supply system in the Gram Panchyat, as it governs the financial sustainability. The main components in revenue management are: 1.Tariff plan. & 2.Billing and collection

4.13.1 Tariff Plan: 'Tariff' means the water charges to be fixed by the water agency/ GPWSC/VWSC/GP. The tariff to be fixed is based on the O&M expenditure and services provided to users. O&M expenditure is calculated considering the following items:

a) Staff salaries.
b) Electrical charges;
c) Cost of repairs and maintenance;
d) Bleaching powder; and
e) Cleaning charges

Here, the GP has to take social equity into account and determine the concessions required to be given in the case of weaker sections, BPL households and households in remote locations.

Methodology for the Assessment of O&M Costs of Water Supply

The sustainability of the provision of water supply in GPs would require the recovery of O&M costs. A proper cost recovery system in the form of tariffs is necessary to ensure the financial viability. The major O&M costs associated with the water supply services may be grouped under:

1. **Staff Salaries & Wages:** Compute the monthly & annual wages of workers responsible for water supply function.
2. **Power & Fuel Costs: Work out m**onthly electricity bill payments made with respect to water supply and compute the total annual power charges paid.
3. **Costs of Consumables:** Find out the type of consumables e.g., Chlorine used in the treatment and/or disinfection process of water supply. Compute the total annual cost of consumables.
4. **Vehicle Cost:** List out the vehicles such as tractors used for regular water supply. Estimate the number of trips made by each type of vehicle and then estimate the tota; charges per annum
5. **Annual Maintenance Costs:** List out the various items of treatment plant and equipment and all other facilities of the water supply system and estimate the annual maintenance cost
6. **Total O&M Costs:** Total O&M Costs of Water supply = Staff salaries and wages+ power and fuel costs +cost of consumables+ cost of vehicle hire+ total maintenance costs
7. **User Charges:** Divide the total O&M cost by the number of FHTC and arrive at user charges payable per household

4.13.2 Billing and Collection: The GP/GPWSC/VWSC should collect water charges from consumers and utilise the revenue generated for the maintenance of the scheme. The distribution of bills can be carried out by the operators/bill collectors specially authorised for this purpose. The payment modalities can be:

a) Counters at the GP/GPWSC/VWSC office.
b) Door-to-door collection by an authorised person.
c) By cheque through drop boxes, and
d) At the bank/online payment.

The billing section also carries out accounting related to these receipts such as posting of receipts, generation of demand registers or ledgers on a periodic basis. The complete accounting related to billing may also be more efficiently carried out by a computerized system.

Case Study 1: Empowering Women for Sustainable Water Management: The Success Story of Motipura-Veda Village of Guajarat

Motipura-Veda village is located in Mansa block of Gandhi Nagar district and has 108 households. Over exploitation depleted the ground water of the block affecting water quality with fluoride and high turbidity. A village PaniSamiti was formed in the Gram Sabha in 2004 to overcome the problem of scarcity of drinking water. Villagers of Motipura Veda fully supported a community-managed village water supply scheme. With total community participation, the PaniSamiti, on the first day itself, mobilised a community contribution that exceeded the required 10 per cent of the cost of the household piped water supply system. The remaining cost was provided under the government scheme.

The villagers attached immense importance to maintaining the water resources sustainably. Towards this, testing of water quality was regularly undertaken. Recharging of the well through diverting run-off was undertaken which helped in reviving the water table. Water treated by the Reverse Osmosis (RO) process was made available to all households. Subsequently, the village has piped water supply. In 2011, the village decided to convert the PaniSamiti into a Women's PaniSamiti. Its members have a uniform which they wear during public ceremonies to give recognition to its members. It is through sheer hard work and dedication that each household regularly contributes to the water tariff which has enabled effective Operations and Maintenance (O&M) work

In addition to managing the village's water resources, the Women's PaniSamiti also undertook sanitation activities which enabled the protection of water resources from contamination, management of solid and liquid waste, and promotion of individual and community sanitation. These achievements have helped village Motipura-Veda earn recognition both at the state and national levels. Members of the Women's PaniSamiti take a lead role in motivating women in other areas to come forward and play key roles in the management of their water resources.

Source: https://jalshakti-ddws.gov.in/sites/default/files/Gram_Panchayat_Report.pdf

4.14 Collection of User Charges for Service Delivery: Public services are the backbone of rural development and play a crucial role in improving the quality of life for villagers. In rural areas, there is a common misconception that people are inherently averse to paying taxes and user charges. However, this notion may not hold true when public service delivery is of good quality and meets the needs of the community. Following factors pay a crucial role in levy & collection of user charges:

a) **Sense of Ownership and Accountability**: When rural communities witness the direct benefits of the taxes they pay in the form of improved services, they develop a sense of

ownership and accountability towards the governance of their village. This fosters a positive attitude towards taxation and encourages voluntary compliance.

b) **Trust in Governance**: Effective public service delivery builds trust in the governance system. When villagers see that their tax contributions are utilized transparently and efficiently to address their needs, they are more likely to support such initiatives and pay taxes willingly.

c) **Impact on Local Economy**: Improved public services can have a positive impact on the local economy. Better infrastructure and services attract businesses, create employment opportunities, and stimulate economic growth. As villagers witness the direct economic benefits, they become more receptive to paying taxes as an investment in their community's development.

d) **Reduced Dependence on Private Alternatives**: In the absence of reliable public services, villagers often resort to private alternatives that can be costly. When the government provides good public services, the need for private substitutes diminishes, making tax payment a preferable option for the community.

e) **Enhanced Social Fabric**: Improved public services contribute to the overall well-being of villagers, leading to enhanced social cohesion and a stronger sense of community. This social fabric encourages a collective responsibility among villagers, making them more willing to contribute towards the common good through taxes.

f) **Participation in Decision-Making**: When public service delivery is effective, there is often an emphasis on community participation in decision-making processes. Villagers have a say in the planning and prioritization of projects, creating a sense of ownership and motivation to support these initiatives financially.

g) **Aligning Taxation with Local Needs**: Taxation systems that are equitable and align with the specific needs of the rural community are more likely to be accepted by villagers. When taxes and user charges are reasonable and clearly linked to the services provided, the willingness to pay increases significantly.

4.15 Test your Knowledge: Fill in the blanks

1. The activities aimed at sustaining the water supply in a proper working condition are called .....
2. The everyday running and handling of a water facility, involving the actual delivery of services is called _____
3. Water testing is very important for .....the operation of water supply
4. Sanitary inspection identify and evaluate factors associated with drinking water that may pose a .....
5. VWSC is responsible to collect.....s from consumers and utilise the revenue generated for the maintenance of the scheme.

Chapter 5: Professionalization of Water Supply Services

Learning Objectives

- Service Level Benchmarks for Water Supply
- Professionalization of Water Supply Services
- Provisions for Contract in State PR Acts
- Basic elements of contract
- Model Contract Typologies for Water Supply
- Role of GP in contract management
- Role of contractor in contract management

5.1 Introduction The O&M of water supply assets in the villages is a professional and skilled activity. To achieve the adopted SLBs and to ensure sustainable service delivery, Panchayat can opt for either carrying out management of the assets by itself or outsource the services to service providers such as local contractors, SHGs or other local groups trained in O&M Engaging local groups will generate enough potential for self-employment of rural youth and development of entrepreneurship. The professionalization of O&M services has two major advantages: (a) Ensure professional management of water supply infrastructure (b) Create local livelihood opportunities.

5.2 Service Level Benchmarks for Water Supply (SLB): To enhance service efficiency and improve sustainability, it becomes necessary for the Gram Panchayats to understand and adopt minimum expected service standards, current service levels and identify gaps in performance. For the benefit of the Gram Panchayats the MoPR in collaboration with UNICEF, has defined the service level benchmarks (SLBs) for providing drinking water services. This standard framework can be used for planning, setting targets and monitoring and assessing performance against the agreed targets. It will also ensure that people are aware of the minimum services they are eligible to receive and can demand such services. Meeting these minimum service level standards would encourage the citizen to bear the O&M costs. The SLBs for different parameters of water supply are shown below:

S.N	Parameter	Water Supply Essential Indicators	Benchmark
1	Coverage	Habitations covered through Public Water System	100%
		Habitations covered through non-PWS	100%
		Coverage of household (HH) connections	100%
		Water supply for schools and Anganwadi	100%

2	Quantity	Per capita supply of water as per JJM norms	55 lpcd
		Regularity (Daily water supply at fixed time)	100%
3	Quality	Quality of water supplied as per BIS 10500:2012	100%
		Disinfection of water prior to supply	Residual chlorine 0.2mg/l
		Water sample testing using FTK	100%
		Sanitary Survey: No. of sources with minimumrisk score as per state nors	100%
4	Financial sustainability	Cost recovery in water supply services	100%
		Tariff Recovery	90%
5	Grievance Redressal	Redressal of customer complaints	Yes
6	Institutional management	15th Finance Commission Tied funds used forwater supply against the planned amount	80%
		GP operating and maintaining drinking water supply facility within village	Yes
7	Water availability for livestock	Whether there is a provision for drinking waterfor animals	Yes
		Whether there are adequate cattle troughs in thevillage	yes
8	Quantity	Provision for uninterrupted power supply(solar/other options)	Yes
		Equitable water supply: 55 lpcd at highest andfarthest households	100%
9	Non-Revenue water	Non-Revenue Water (NRW). Quantum of waternot billed	Less than 15%
10	Source sustainability	Yield test discharge for PWS sources equal tocurrent water	100%

		demand	
		Yield test discharge for spot sources equal tocurrent water demand	100%
		Preparation of drinking water budget throughparticipatory process	Every year
		Rainwater harvesting structures in public buildings	100%
		Rainwater harvesting structures in pucca houses	100%
11	Financial sustainability	Structures for enhancement of water availabilityin groundwater sources	Yes
		O&M budget preparation (estimated and actual)	Annually
		Is differential tariff set based on type of usageand diameter of connection pipe?	Yes
		Is telescopic tariff set? (GPs with 100% metering)	Yes
		Metering (only for GPs with PWS)	100%
11	Institutional management	Record maintenance	As per state norm
		At least four GP functionaries trained for WASHservice management	100%
		GP staff trained in particular skills (water person,pump operators and other staff)	100%

5.3 Professionalization of Water Supply Services: The O&M of water supply assets in the villages is a professional and skilled activity. To achieve the adopted SLBs and to ensure sustainable service delivery, Panchayat can opt for either carrying out management of the assets by itself or outsource the services to service providers such as local contractors, SHGs or other local groups trained in O&M Engaging local groups will generate enough potential for self-

employment of rural youth and development of entrepreneurship.. The professionalization of O&M services has two major advantages: (a) Ensure professional management of water supply infrastructure (b) Create local livelihood opportunities. Before professionalization of O&M of water supply theGram Panchayat should take up and complete the following activities

a) Gain an understanding on the role and responsibilities GP in providing water supply
b) Constitute Village Water & Sanitation Committee and train its members
c) Prepare Village Action Plan as required under JJM
d) Create Awareness on community contributions for capital cost of new schemes
e) Fix the user charges towards O&M for cost recovery
f) Obtain administrative technical sanction for annual O&M from the competent authority

5.4 Provisions for Contract in State PR Acts: The respective State Panchayat Raj Acts and Rules issued there under contain provisions for contracting for public works includingO&M of water supply. These are further supplemented by the advisories issued by the MoPR and Finance Departments on procedural matters relating to tenders, contracting as well as delegation of financial powers

5.5 Basic Elements of Contract: The basic elements of Contract include contract creation, contract execution, and contract implementation. These are briefly described below.

S.no	Description	Significance
1	Contract	In the context of GP, contract delivery of public services etc through third parties The contracted services are carried outby the these parties in accordance with the terms and conditions laid down in the contract. The “Contractor” is the service provider selected for performing the tasks mentioned in the contract
2	Contract Engrossment	Contract engrossment is the process of preparing the final agreed form of contract and its schedules and appendices so thatit can be executed
2	Contract Execution	Contract execution is the process of signing an agreed contract, after which its terms and conditions become binding on the parties to the contract
3	Contract Implementation	Contract implementation is the process where the parties to contract perform the duties mentioned in the contractual agreement. The terms and conditions mentioned in agreement are kept in mind in the performance of the contract

5.6 Phases of Contract Management: Contract Management usually involves 3 key phases i.e. Pre- Award Phase, Award Phase and Post Award Phase. These described below briefly

S.no	Contract Management Phase	Activities carried out
1	Pre- Award phase	During this stage, GP focuses on the reason for establishing the contract and deciding whether the contractor can full fill the terms of the contract to meet the water supply needs of the citizen
2	Award Phase	This is the middle phase when the contract is awardedwhich includes all the paperwork to make the agreement final
3	Post-award Phase	In the post-award period the terms and conditions ofthe contract are implemented and services are delivered to the satisfactory to both parties

5.7. Model Contract Typologies for Water Supply: The contract for O&M of water Supply aims to improve and maintain the service level of water supply as per the attached service level benchmarks in the GP. It focuses on access to safe and adequate water regularly to all the residents through the water supply system. The service provider / Contractor shall be responsible for all theroutine operations of the system, as well as, the maintenance of the system for the stipulated periodof time as per the scope of work. He shall also be responsible for maintenance of the hand pump and power / solar pumps / RO plant installed by Gram Panchayat, as well as source protection in the village. For professional operation and maintenance of water supply services at the GP level,the MoPR has issued guidelines for selection of contracts

5.8 Options for GP for Selection of Contracts: As there are wide-ranging variations in demographic size, geographic location, type's water supply of infrastructure facilities, the GPs have to choose the appropriate type of contract as per the local needs to ensure cost-effective utilization of resources. The following are the option for selection of contract for water supply inthe GPs

a) Individual GPs: If the population of the GP is more than 5,000 and / or with scattered habitations and has multiple drinking water schemes and distant water sources, then the GP can opt for one of the following contract model

S.no	Type of Contract	Suitability and Justification

1	Contract for ComprehensiveO&M	• If the population of the GP is more than 5,000and / or with scattered habitations and has multiple drinking water schemes and distant water sources, then the GP can opt for this model.
		• The Contractor responsible for regular operations, maintenance, minor repairs, skilled and unskilled HR, spares and tools, consumables, power charges
2	Contract for provision ofHuman Resource for O&M	• If the population of the GP is less than 5,000 and / or with a single piped water supply scheme withnot a lot of infrastructure. then the GP can opt forthis model • The Contractor responsible for providing required HR The GP will be responsible to procurement of tools, consumables and payment of energy charges etc.
3	Contract for O&M of Plant /Equipment	• If the GP has a single or multiple piped water supply schemes with specialized installations thatrequire technical experts for maintenance and repairs, irrespective of the population, then the GP can opt for this model • The Contractor will be responsible for annual maintenance and repairs of equipment/plant

b) Cluster of GPs: For the purpose of cost-effectiveness, it would be better for a single agency to cater to multiple GPs located nearby. In such a scenario, the cluster of GPs may mutually decideto choose a single agency for delivery of the professional services under any of the model contracttype mentioned above. The agency can be chosen from a list of applicants at the district level. Theagency will need to enter into a separate contract with each of the GP in the cluster. The respectiveGP will be responsible for the payment to the agency according to the quantum of work in its jurisdiction.

c) Small GPs: Many GPs may not have sizeable work to be accomplished or financial resources at their disposal to enter into a contract with a professional agency. Some GPs may havea SVS with extremely simple water supply arrangements. Such GPs can appoint one trained persons take care of all services related to drinking water supply

d) Best Option for GPs: The best option will be to deploy local human resources for the execution of the contract services. This will not only provide improved services levels in the GPsbut also generate employment and result in betterment in the livelihood of the rural population. The GP can enlist youth groups, self-help groups (SHGs), Start-up Village

Entrepreneurs (SVEPs)and educated unemployed youth who could be trained for carrying out O&M of the services.

5.9 Implementation of Contracts: Once a contract has been successfully negotiated, it's crucialfor the GP to develop an implementation plan. Successful contract management is not just about ensuring that things go right – it's also about knowing what to look for when things start going wrong, so as to address the problems immediately. The following are the illustrative roles and responsibilities of the contractor and the Panchayat functionaries es

5.9.1 Role of Contractor in Contract Management

a) **Deployment of Personnel:** The Contractor shall deploy the required personnel and get them trained on all the activities of O&M. He should make proper safety arrangements for the persons working on site. A uniform for "water personnel" will be preferred with indentation tag will be proposed. The Contractor will be responsible for maintenance of proper discipline by hispersonnel.

b) **Materials and Supplies:** The Contractor shall procure and acquire all items which may beneeded to fulfil its obligations under this contract. He shall maintain a complete set of all tools and tackles at site for O&M of the system. Any license or permission that may be required underthe law for carrying out the O&M activity in the premises of the GP need to be obtained by thecontractor at his own cost,

c) **Service Performance:** The contractor shall perform the Services in accordance with Applicable environmental rules. He shall l not sub-contract the works unless permitted in writingspecifically by the GP. In case of emergency, repairs whenever required, prior permission from the GP shall be obtained. The contractor shall maintain records and provide reports and other information to GP from time to time.

d) **Complaint Redressal:** The contractor shall maintain a complaint register for recording date wise details of the complaints. He shall identify the cause of the complaint and redress it promptly. All breakdown calls / complaints received during normal working hours should be attended to as early as possible. No complaints should be left unattended and not be postponed tonext day.

5.9.2 Role of Gram Panchayat in contract management: The GP VWSC and Panchayat Secretary shall supervise andmonitoring on a day to day basis all aspects service delivery by the contractor.

S.no	Parameter	Indictor	Unit of Measurement	Responsibility to measure	Responsible to Monitor
1	Coverage	Habitations covered throughPiped Water supply	- 100%	VWSC	Gram Sabha

2	Quantity	Per capita supply of water Ipcd	55 lpcd	VWSC	Gram Sabha / Panchayat Secretary
		Keep proper records of material used	All prescribed registers/ Forms	VWSC	Panchayat Secretary
		Periodical inspections and	Carrying out prescribed test checks	VWSC	Panchayat Secretary
		Water Availability for livestock	As per requirement	VWSC	Panchayat Secretary
3	Non-Revenue Water	Quantum of waternot billed (total)	Less than 15%	VWSC	Asst Engineer
4	Quality of water	Quality of water supplied	100% As per BIS standards	VWSC	Asst Engineer
		Disinfection ofwater	Residual chlorine >= 0.2mg/I	VWSC	Panchayat Secretary/ Asst Engineer
		Use of FTK	Frequency of testing as per the norm	VWSC	/ Asst Engineer
		Sanitary survey of water sources	100%	VWSC	Panchayat Secretary/
5	Financial Stability	Tariff recovery ofwater supply (User Charges)	100%	Panchayat Secretary	Gram Panchayat
6	Redressal of complaints	No. of complaints addressed within 24 hours	90%	Water Person/	Panchayat Secretary
7	Institutional Arrangements	Training of VWSC / GP functionaries	100%	Panchayat Secretary	Gram Panchayat

a) **Payments:** In consideration of the services performed by the Contractor the GP shall makepayments to the Contractor as per payment terms of contract. The Contractor will permit the GPto hold or deduct the amount from the bill for non-performance or

part performance or failure to discharge obligations under the contract. All the payments to the contractors are made only digitally in the form of bank transfers as per applicable respective laws / rules and no cash payments should be made

b) **Penalties:** If the personnel as per the requirement are not deployed, then the contractor willbe liable for fine as decided by the GP. The Penalties provided in the agreement shall be strictly enforced in accordance with the terms of the contract. During supervision and monitoring by theGP if it is found that the scope of work is not satisfactorily met by the contractor , then the Agreement can be terminated before the Term of the Agreement by giving not less than thirty(30) days of written notice

c) **Dispute Resolution**: Any disputes between the parties shall be settled, in the second instance, through mutual and amicable consultation. If the dispute is not settled through such consultation, the matter shall be referred for arbitration and its decision of the arbitrator shall be final and abiding for both parties

5.10 Test your Knowledge: fill up the blanks:

1. The O&M of water supply assets in the villages is a..... activity.

2. MoPR, in collaboration with UNICEF, has defined the service level .....) for providing drinking water services.

3. Engaging local groups for O&M of water supply will generate enough potential for ..... of rural youth.

4. The State PR Acts and Rules contain..... for contracting for public works including O&M of water supply.

5. The contract for O&M of water Supply aims to ..... the service level of water supply.

Chapter 6: Rainwater Harvesting, Water Recycling & Water Efficient Agricultural Practices

Target 6: Construction of rain water harvesting and recharge works
Target 7: Safeguarding of water bodies
Target 9: Water efficient Agricultural practices

Learning Objectives

- Water Conservation
- Strategies of water conservation
- Water Recycling
- Rain Water harvesting (RWH)
- Ground Water recharging
- Rejuvenating and de-silting of water bodies
- Mission Amrut Sarovar
- Water-efficient agricultural practices

6.1 Introduction: The importance of rainwater harvesting, water recycling, and water-efficient agricultural practices lies in their collective contribution to sustainable water management, water conservation, and addressing water scarcity challenges. These practices are vital for ensuring the availability of clean water for present and future generations and promoting resilient ecosystems in the face of increasing water stress and climate change.

6.2 Water Conservation: Water conservation refers to the responsible and efficient use of water resources to minimize waste, preserve water availability, and protect the environment. It is a crucial practice for ensuring the sustainability of our water supply in the face of growing population, increasing water demand, and the impacts of climate change. Water conservation involves adopting habits, technologies, and policies that reduce water consumption and promote wise water management at individual, community, and institutional levels. By conserving water, the Gram Panchayat can ensure the availability of clean water for future generations, protect ecosystems, and mitigate the impacts of water scarcity. Embracing a water-conscious lifestyle and fostering a culture of conservation is essential for a sustainable and water-secure future

6.3 Awareness creation on water conservation: One of the fundamental aspects of water conservation is raising awareness about the value of water and the need to use it judiciously. Recognizing that water is a finite resource and understanding the potential consequences of water scarcity or depletion is essential for fostering a culture of conservation. Education campaigns, public outreach programs, and school curricula can play a significant role in promoting water-conscious behaviours and instilling a sense of responsibility toward water conservation.

6.4 Strategies of water conservation: There are various practical measures and strategies for conserving water. Implementing water-efficient practices in our daily lives, such as taking shorter showers, fixing leaks promptly, and turning off taps when not in use, can have a significant impact on reducing water waste. Installing water-saving devices such as low-flow faucets, showerheads, and toilets can significantly decrease water consumption without sacrificing functionality.

6.5 Collaborative efforts: Effective water conservation requires collaboration among individuals, communities, governments, and institutions. Governments can play a vital role by enacting and enforcing water conservation policies, setting standards for water-efficient appliances and fixtures, and promoting water pricing mechanisms that reflect the true value of water. Communities can establish water conservation programs, encourage community participation, and implement water-saving initiatives in public spaces and buildings.

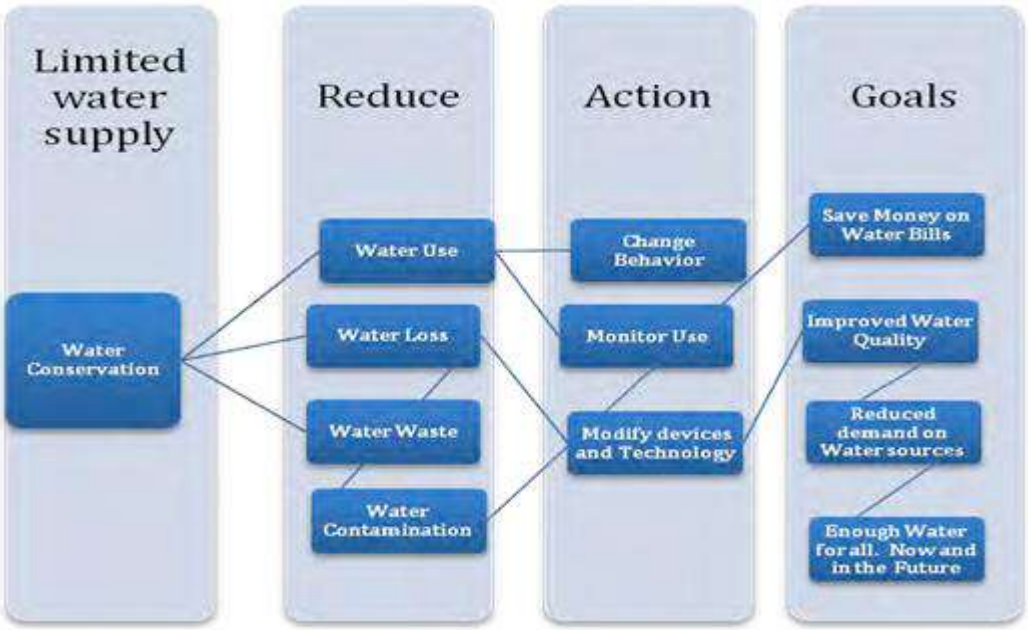
6.6 Different methods of water conservation: There are various methods of water conservation that can be implemented at different levels to promote sustainable water use and reduce water waste. Here are some common methods of water conservation:

a) **Efficient Irrigation**: Implementing efficient irrigation techniques such as drip irrigation or micro-sprinklers can significantly reduce water usage in agriculture and landscaping. These methods deliver water directly to the roots of plants, minimizing evaporation and runoff.
b) **Water-efficient Fixtures**: Installing water-efficient fixtures like low-flow toilets, showerheads, and faucets can help conserve water in households and commercial buildings. These fixtures are designed to use less water without compromising functionality.
c) **Rainwater Harvesting**: Rainwater harvesting involves collecting and storing rainwater for later use. It can be done by installing rain barrels or cisterns to capture rainwater from rooftops or by directing rainwater to recharge groundwater sources.
d) **Greywater Recycling**: Greywater recycling involves treating and reusing wastewater from sources such as sinks, showers, and laundry for non-potable purposes like toilet flushing or landscape irrigation. It reduces the demand for freshwater and maximizes water use efficiency.
e) **Water-efficient Appliances**: Choosing water-efficient appliances such as washing machines and dishwashers that have high Water Efficiency Ratings (WER) can reduce water consumption during daily activities.
f) **Leak Detection and Repair**: Regularly checking for leaks in plumbing systems and promptly repairing them can prevent water wastage. Even minor leaks can add up to significant water loss over time.
g) **Education and Awareness**: Promoting water conservation through education and awareness campaigns can encourage individuals and communities to adopt water-saving practices. This includes educating people about the importance of water conservation, providing tips on water-efficient behaviours, and raising awareness about water scarcity issues.

h) **Soil and water conservations**: Soil and water conservations structures such as contour or graded bunds can be included as one of the measures of water conservation as part of watershed management aspect.

i) **Water Pricing and Regulations**: Implementing water pricing structures that reflect the true value of water and enforcing water conservation regulations can incentivize individuals, businesses, and industries to use water more efficiently.

j) **Public Infrastructure Upgrades**: Upgrading public infrastructure such as water distribution systems, wastewater treatment plants, and irrigation systems can help reduce water losses and improve overall efficiency.



Water conservation -components

6.7 Water Recycling: Water recycling, also known as water reuse or water reclamation, is the process of treating and repurposing wastewater or used water for various beneficial purposes. Its primary goal is to address water scarcity, promote sustainable water management, and alleviate pressure on freshwater sources. Water recycling not only contributes to water conservation but also offers economic and environmental benefits. This practice helps reduce wastewater discharge into natural water bodies, minimizing pollution and preserving aquatic ecosystems.. There are several methods of water recycling that can be implemented to maximize the efficient use of water resources. Each method requires appropriate treatment processes, monitoring, and regulatory compliance to ensure the safety and quality of the recycled water. The choice of method depends on the specific water source, intended reuse application, and regulatory framework in place. Implementing these methods of water recycling effectively conserves water resources, reduces freshwater demand, and promotes sustainable water management practices. Here are some common methods:

a) **Greywater Recycling**: Greywater, generated from sources like sinks, showers, and laundry, can be treated to remove impurities and contaminants. The treated greywater can be reused for landscape irrigation, toilet flushing, and other non-

potable purposes. Wastewater treatment plants employ advanced processes to remove contaminants and pollutants, making the treated water safe for reuse. This reclaimed water can be used for irrigation, industrial processes, groundwater recharge, or even indirect potable purposes after additional treatment.

b) **Storm water Harvesting**: Runoff from rainfall, known as storm water, can be collected, stored, and treated for reuse. Storm water harvesting systems capture and treat runoff from roofs, roads, and other surfaces, enabling its use for irrigation, groundwater recharge, or non-potable applications.

c) **Agricultural Wastewater Treatment and Reuse**: Wastewater from agricultural activities, such as irrigation runoff or processing facilities, can be treated and reused within the agricultural system, conserving water resources and reducing the need for freshwater irrigation.

d) **Decentralized Water Recycling Systems**: These smaller-scale systems can be implemented in individual buildings or communities. They treat wastewater locally and recycle it for specific non-potable purposes within the same location.

e) **Industrial Process Water Recycling**: Industries can implement water recycling systems to capture and treat water used in various operations, reducing overall water demand and conserving freshwater resources.

6.8- RWH structure in Villages: Rainwater harvesting is the practice of collecting and storing rainwater for future use, which has gained renewed importance in recent years due to water scarcity and the need for sustainable water management. RWH involves capturing rainwater that falls on the ground surface by constructing check dams, trenches, or bunds, and storing it in natural or artificial reservoirs. This stored water can be used for irrigation, groundwater recharge, or livestock watering. RWH is a sustainable and cost-effective approach that can be implemented at various scales, empowering individuals and communities to conserve water and reduce reliance on external water supplies. RWH play a crucial role in promoting and implementing rainwater harvesting initiatives to address water scarcity and improve water management at the grassroots level. Here are some key points to consider regarding rainwater harvesting in GPs:

a) **Water Security**: Rainwater harvesting provides an opportunity to enhance water security in GPs by harnessing rainwater as a valuable resource. It helps supplement groundwater sources, especially during periods of low rainfall or drought, and reduces dependence on external water supplies.

b) **Community Participation**: Rainwater harvesting projects in GPs should encourage community participation and involvement. Engaging the local population in planning, implementation, and maintenance fosters a sense of ownership, ensures sustainability, and promotes water conservation practices among residents.

c) **Infrastructure Planning**: It is essential to assess the rainfall patterns, topography, and existing water sources in the GP area to identify suitable locations for rainwater harvesting structures. This includes identifying rooftops, open spaces, and other surfaces where rainwater can be collected effectively.

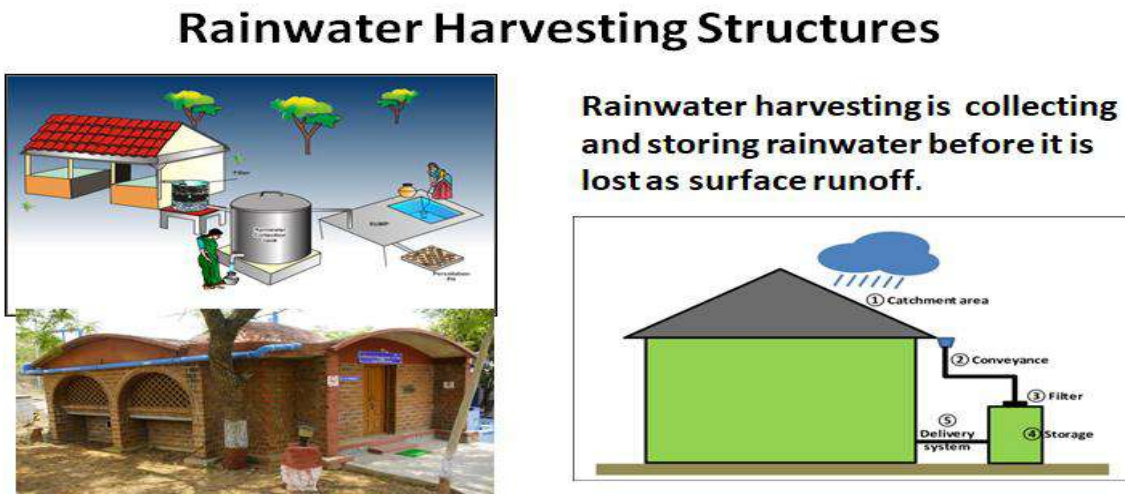
d) **Rooftop Rainwater Harvesting**: One of the most common and practical methods of rainwater harvesting in GPs is through the collection of rainwater from rooftops. Installing gutters, downspouts, and storage tanks or reservoirs enables the collection and storage of rainwater for domestic use, livestock watering, and irrigation.

e) **Community-based Structures**: Besides individual households, GPs can implement community-based rainwater harvesting structures. This can include constructing check dams, percolation tanks, and small ponds to capture and store rainwater. Such structures provide water for various purposes and help recharge groundwater aquifers.

f) **Awareness and Training**: Creating awareness among the community members about the benefits and methods of rainwater harvesting is crucial for the success of such initiatives. Conducting training programs, workshops, and awareness campaigns on rainwater harvesting techniques and its importance can encourage widespread adoption.

g) **Policy and Regulatory Support**: GPs should establish policies and regulations that support rainwater harvesting initiatives. This includes providing incentives, subsidies, and technical support to individuals and communities interested in implementing rainwater harvesting systems. Encouraging rainwater harvesting through local bylaws or ordinances ensures its integration into the community's water management practices.

h) **Monitoring and Maintenance**: Regular monitoring and maintenance of rainwater harvesting structures are necessary to ensure their long-term effectiveness. GPs can establish mechanisms for monitoring water quality, assessing storage capacities, and conducting maintenance activities to maximize the efficiency and longevity of the rainwater harvesting systems.



6.9 Best Practice 1: Jal Dal-Children's Institutions for Water Management

Godawas Khurd, Barmer District, Rajasthan

Due to lack of availability of drinking water, Government School in Godawas experienced poor enrolment and attendance rates. Children had to help their mothers fetch water from distant places and were at the suffering end of the problem of water access. The Gram Panchayat of the village constructed a 40,000 litre tank in school, enlargement of village pond and created a Jal Sabha in the village. To ensure maintenance of the newly constructed tank, a student body of 10 members called Jal Dal was constituted. The Jal Dal took the responsibility of cleaning the roof and ensuring clean water in the tank. They were also responsible for cleaning of silt chambers and meticulous functioning of the hand pump. The school children were also involved in environment conservation drives and in disseminating information about water stress to the villagers. This is an ongoing practice which is passed down to the younger students to maintain the tank. The students have also started a piggy bank in which students from higher classes contribute one rupee per month for maintenance of tank and purchased of water during times of scanty rainfall.

Achievement: This intervention has positively impacted education in the region and has yielded a growth in literacy rate. There has been a noticeable fall in the school dropout rate and attendance has become more consistent. Incidences of water borne diseases have reduced, clean water is available throughout the year for the village. The village has become self-reliant and is now no longer dependent on pricey water tanks run by mafia to fulfil their water requirements.

Takeaway: 1.The Jal Dals provide an excellent example of volunteerism and community service, enabling children to learn about water management practices through hands on experiences 2. It also puts forward an instance of uniting the school administration and students to work together to ensure that every child gets access to clean water and right to education. Community driven initiatives are better maintained and demonstrate longevity in terms of resource management.

Source: https://smartnet.niua.org/sites/default/files/resources/bestpractices-in-water-management.pdf

6.10 Ground Water recharging:

Groundwater recharge, also known as the process of replenishing underground water reservoirs or aquifers through the infiltration of surface water, is a vital aspect of sustainable water management. It plays a crucial role in maintaining water balance, preserving water quality, and ensuring the long-term availability of groundwater for various purposes. Groundwater serves as a reliable source of freshwater for drinking, irrigation, and industrial uses. However, excessive extraction and insufficient replenishment can lead to declining water tables, land subsidence, and degraded water quality. Groundwater recharge mitigates these issues by enhancing natural replenishment processes. It is a critical component of sustainable water management that supports water availability, mitigates water scarcity, and meets the needs of communities, agriculture, and the environment. Collaboration among government agencies, water utilities, communities, and industries, along with integrated water management

approaches and public awareness programs, is essential for implementing large-scale groundwater recharge projects. There are different methods and techniques for water recharging, depending on local hydro-geological conditions and water availability. Some common approaches include:

a) **Infiltration Basins**: These are shallow depressions or reservoirs designed to collect and store surface water, allowing it to slowly infiltrate into the ground. Infiltration basins can be constructed in natural depressions or artificially created to capture and recharge rainwater or surface runoff.

b) **Recharge Wells**: Recharge wells are vertical shafts drilled into the ground to reach the underlying aquifers. Surface water, treated wastewater, or excess water from rivers or lakes can be injected directly into the wells to replenish the groundwater.

c) **Percolation Ponds**: Percolation ponds are constructed areas with permeable soils or artificial liners where water is impounded and allowed to seep into the ground. They are often used to recharge urban storm water or treated wastewater effluent.

d) **Artificial Recharge**: In some cases, water is directly injected into the aquifer using injection wells or infiltration galleries. This method is suitable when the natural recharge rates are low or when there is a need for targeted recharge in specific areas.

6.11 Best Practice 2: Bhungroo – Ground Water Recharge Wells in Gujarat

'Bhungroo' is a water management system that injects and stores excess rainfall water underground. This water is then used for irrigation during summers .The intervention was carried out in sites identified by the Gram Panchayat through resistivity surveys by the Ground Water Department and Geologists from DWMA (District Water Management Agency) for this purpose. Design and estimation was done under MGNREGS. The pilot project was carried out in Gujarat with user groups. The steps such as installation of one unit with sub-surface storage at three levels between 25 to 110 feet with a total capacity of 2 crore litres was implemented. The farmers were trained in installation of Bhungroos. Installation of piezometer was done for water level monitoring on a day-to- day basis.

Achievements: Artificially recharging of aquifers by adding rainwater to underground water reservoirs enables the communities to continue farming for more than half of the year. The non-saline rainwater when mixed with the underground saline water brings down the salinity of the groundwater, making it fit for agricultural use. The system also enables one to lift up and use the stored water during dry spells. The massive underground reservoir can hold as much as 40 million litres of rain water. It harvests water for about 10 days per year and can supply water for as long as seven months. These wells can hold up to two crore litre of rain water.

Takeaways

1 Major beneficiaries of this pilot program were the underprivileged female farmers who were completely depended upon rain fed agriculture.
2 This system has reduced drudgery of women thus making them the chief owner and expert of this practice.
3 It provides food security and sustainable livelihoods to more than 18,000 marginal farmers (with over 96,000 dependent family).
4 It has helped in contributing to food security.
5 This technique can be replicated in other parts of country for groundwater recharge.

Source: https://smartnet.niua.org/sites/default/files/resources/bestpractices-in-water-management.pdf

Restoring Tanks / Water bodies for Minor Irrigation

6.14 Best Practice 3: Mission Kakatiya of Telangana- Restoring minor irrigation sources

Mission Kakatiya is a flagship program under Telangana government aimed at restoring minor irrigation sources of water like ponds and tanks. The objective is to enhance the development of Minor Irrigation infrastructure, strengthening community based irrigation management in a decentralized manner and to adopt a comprehensive programme for restoration of tanks and sources of water to effectively utilize 265 TM of water allocated for minor irrigation sector under Godavari and Krishna river Basins. Gram Sabha were conducted and the proposed plans were discussed with the villagers. Farmers were motivated to co-operate and were suggested to deposit the silt for field preparation. Several district level coordination committees were formed. Emphasis was given for improvement in delivery time of services. Steps like tank de-siltation, restoration of the feeder channels, re-sectioning of irrigation channels, repair of bund, weir and sluice, raising of FTL (Full Tank Level) wherever required were carried out.

Achievements: The intervention helped in increasing the storage capacity of tanks and other water bodies. It helped in making water available and accessible to small and medium farmers in particular and benefitted other farmers as well. The intervention helped in increasing the water retention capacity of the sources and also helped in improving the on-farm moisture retention capacity. The intervention bridged the 63% ayacut gap and also helped in stabilization of ayacut under minor irrigation. Measures like mixing of the slit on farm land preparation reduced the use of chemical fertilizers and also improved the land water retention capacity. An appreciable change was observed in the nutritive values of the soil. It resulted in diversification of high value crop and crop intensification and also gave rise to loop irrigation. Other achievements that accompanied the project are development of fisheries and livestock and rise in the ground water levels in that area. The increase in plantation of palm trees on the slopes also added to the income generation for the rural people.

Takeaways: 1. Public participation will lead to ownership and help in long-term sustainability of the interventions. 2. Restoration and maintenance of water resources should be a continual process and local people should be trained to manage their resources.

Source: https://smartnet.niua.org/sites/default/files/resources/bestpractices-in-water-management.pdf

6.15 Water-efficient agricultural practices: Water-efficient agricultural practices involve employing various techniques and methods to optimize water use and minimize wastage. By adopting these practices, we can conserve water resources, reduce the environmental footprint of agriculture, and enhance profitability. Here are a few key points to consider:

a) **Drip Irrigation**: Drip irrigation is an effective technique that delivers water directly to plant roots, minimizing evaporation and runoff. This method ensures that plants receive water precisely where and when they need it, reducing water loss and maximizing efficiency.

b) **Mulching:** Applying organic or synthetic materials to the soil surface acts as a protective layer, reducing evaporation, conserving soil moisture, and suppressing weed growth. Mulching not only helps retain water but also improves soil health and minimizes the need for excessive irrigation.

c) **Crop Rotation and Diversification**: Alternating different crops in a sequence or growing a variety of crops on the same field offers multiple benefits. It enhances water-use efficiency, reduces water-related diseases, and optimizes nutrient utilization. Additionally, diverse crop systems can help mitigate the risk of crop failure due to water stress or pests.

d) **Soil Moisture Monitoring**: Monitoring soil moisture levels using sensors and technology enables farmers to make informed decisions about irrigation scheduling. By avoiding over- or under-irrigation, farmers can optimize water use, prevent water logging, and ensure plants receive the right amount of water at the right time.

Conservation Tillage: Minimizing or eliminating tillage reduces soil disturbance and improves water infiltration, thus enhancing soil water retention. Conservation tillage practices help prevent erosion, maintain soil structure, and conserve moisture, making them particularly beneficial in water-limited areas.

6.16 Best Practice 4: Irrigation Support & Farm Ponds
Initiatives of Gram Panchayat Bhanupratappur, Chhattisgarh

Kanker district of Chhattisgarh, i, is plagued with low water availability and uncertain rainfall, which results in low agricultural productivity. Climatic variability disproportionately affects smallholder farmers and makes their livelihoods even more unpredictable. In this respect, water conservation and land development projects, along with the creation of small water harvesting structures, proved to be a boon. The major objective was to make Gram Panchayats water sufficient and poverty-free while increasing the water-harvesting capacity of the village. Ensuring participatory planning and educating women on watershed management.

Interventions: Involvement and active participation of village organizations and SHG members.

Training and exposure visits. Livelihood-focused planning and preparation of resource and social maps. Linking communities with government schemes

Outcomes:

1. Farm ponds were made deeper than usual to conserve more rainwater and to ensure its availability for a longer duration.
2. Changes in cropping pattern led to increased incomes.
3. Higher yield and improved production of paddy.
4. Emergence of fishery as a new livelihood activity, due to availability of sufficient water in farm ponds.

5. Better yield in the lowlands due to water storage and seepage.
6. Increased confidence of community members on farm ponds for irrigation
7. Vegetable farming using trellis proved profitable and many farmers now plan to grow more vegetables using water stored in the farm ponds.

Source: Compendium of Best Practices in Water Management 2.0
https://www.niti.gov.in/sites/default/files/2021-11/Compendium-of-Best-Practices-in-Water-Management_03-11-2021_compressed.pdf

6.17 Test your Knowledge: Fill-in-the-blanks in each questions

1. Water conservation involves adopting habits, technologies and policies that reduce.....
2. Implementing efficient irrigation techniques such as drip irrigation, micro-sprinklers can reduce.....
3. Installing water-efficient fixtures like Low-flow toilets, showerheads and faucets can help..... in households and commercial buildings.
4. Promoting water conservation through Education and awareness campaigns can encourage individuals and communities to adopt ,,,,,,,,,,,,,,,,.
5. Rainwater harvesting involves collecting and storing rainwater for .....

Chapter 7: Role of Gram Panchayats to make village Water Sufficient

Target 8: Constitution of VWSCs in each Gram Panchayats

Learning Objectives

- Formation of Village Water and Sanitation Committee.
- Role of Village Water and Sanitation Committee
- Role of Gram Panchayat in drinking water supply and water management
- Role of the GP in O&M of water supply schemes.
- Water management strategies to make the village water-sufficient
- Role of Panchayat functionaries

7.1 Introduction: The role of Gram Panchayats in making a village water-sufficient is critical as they are the local self-government bodies responsible for governing and managing rural areas. Gram Panchayats can play a pivotal role in making villages water-sufficient, ensuring the availability of clean and safe water for all residents, and promoting sustainable water management practices for a prosperous rural community.

7.2 Formation of Village Water and Sanitation Committee: The Pani Samiti/Village Water and Sanitation Committee (VWSC), is a statutory committee of the Gram Panchayat and a model GPWSC/VWSC comprises about six to 12 members including,

a) Members of the GP
b) 50 percent representation of women, including Accredited Social Health Activists (ASHAs), Anganwadi Workers (AWWs), etc. and
c) Representatives from SCs, STs and poorer sections of the village.

The President of the VWSC can be the Sarpanch/President of the GP or an elected member as decided by the Gram Sabha.

7.3 Role of Village Water and Sanitation Committee (VWSC): The VWSC of the GP is responsible for planning, implementation, operation, maintenance and management of village drinking water security. The VWSC is also responsible for procurement of goods and services, supervising contracts and works and making payments. And some of the function are,

a) Planning, designing, and implementing all drinking water and sanitation activities
b) Providing facts and figures to the GP for reviewing water and sanitation issues.
c) Providing inputs for the village water security plan.
d) Ensuring community participation and decision making in all phases of scheme activities.
e) Organising community contributions towards capital costs, both in cash and kind (land, labour or materials).
f) Opening and managing bank account for depositing community cash contributions, O&M funds and management of project funds.

g) Collecting funds through a tariff, charges and deposit system for O&M of water supply and sanitation works for proper managing and financing of O&M of the services on a sustainable basis, and
h) Empowering women in day-to-day operation and repairs of the scheme.

7.4 Role of Gram Panchayat in drinking water supply and water management: The following is the role of Gram Panchayat in drinking water supply and water management

a) **Planning and Infrastructure Development**: The Gram Panchayat is responsible for assessing the water needs of the village and developing a comprehensive plan for drinking water supply and water management. This includes identifying water sources, designing and implementing water supply infrastructure such as bore wells, pipelines, overhead tanks, and distribution networks.
b) **Operation and Maintenance**: The Gram Panchayat is responsible for the day-to-day operation and maintenance of the water supply infrastructure. This involves ensuring the availability of clean and safe drinking water, regular inspection and repair of water sources, storage tanks, pumps, and pipelines, and addressing any operational issues or leakages that may arise.
c) **Water Quality Monitoring**: The Gram Panchayat has the responsibility to monitor the quality of drinking water supplied to the village. This includes conducting regular water quality tests, ensuring compliance with water quality standards, and taking necessary measures to address any contamination issues.
d) **Financial Management**: The Gram Panchayat is responsible for financial management related to drinking water supply and water management. This includes budget allocation for water-related infrastructure, ensuring proper utilization of funds, collecting water tariffs or user fees, and maintaining financial records and accounts.
e) **Community Engagement**: The Gram Panchayat plays a crucial role in engaging and mobilizing the community in water-related initiatives. This involves creating awareness about water conservation, promoting hygiene practices, encouraging community participation in decision-making processes, and involving the community in water-related programs and campaigns.
f) **Collaboration and Coordination**: The Gram Panchayat collaborates with relevant government departments, agencies, and NGOs to seek technical assistance, funding, and support for water supply and management projects. It also coordinates with other stakeholders to ensure effective implementation and sustainability of water-related initiatives.
g) **Disaster Management**: In the event of natural disasters or emergencies affecting water supply, the Gram Panchayat is responsible for taking immediate measures to provide safe drinking water to the affected population. This may involve setting up temporary water supply arrangements or organizing relief efforts in coordination with relevant authorities.

h) **Policy Implementation**: The Gram Panchayat implements government policies and programs related to drinking water supply and water management. It ensures compliance with guidelines and regulations, and actively participates in capacity building initiatives and training programs provided by higher-level authorities.

7.5 Role of the GP in O&M of water supply schemes: The GP has an important role in ensuring reliable supply of drinking water. O&M is integral to the success of any water supply scheme. For village water supply schemes, the onus rests with the GP. The GP may use assistance from the GPWSC/VWSC/PaniSamiti to overcome the problem of day-to-day monitoring. The GP could also avail technical support from the PHED/RWSS department. And some of the activities at Gram Panchayat level are,

a) Preparation and implementation of standard operating procedures to be followed covering, operation and maintenance activities
b) Detailed specification of maintenance procedures such as the frequency of attention (daily, weekly, monthly, quarterly, etc.) and also fix responsibility for each item.
c) Communication of the procedure in writing to all concerned.
d) Maintenance of registers in proper formats, where all details are promptly and properly recorded.
e) Engagement of well-trained pump operators, mechanics, etc.
f) Stocking of generally required spare parts such as joints, nuts, pipes, etc., and maintaining stock register with details of receipts and issues.
g) Monitoring, regulating and exercising proper supervision of the work of private agencies entrusted with O&M activities.
h) Proper inspection of all assets in the water supply schemes.
i) Inspection and checking of log books for daily water supplies.
j) Minimisation of the electricity charges; and
k) Control over leakages and pilferage of water in the pipelines.

7.6 Water management strategies to make the village water-sufficient:

a) **Rainwater harvesting**: Collecting and storing rainwater for later use, especially during periods of low rainfall or drought.
b) **Efficient irrigation**: Adopting water-efficient irrigation techniques such as drip irrigation or sprinkler systems to minimize water losses in agriculture.
c) **Water conservation**: Promoting water conservation practices such as fixing leakages, using water-saving fixtures, and raising awareness about responsible water use in households and community settings.
d) **Wastewater management**: Implementing systems for treating and reusing wastewater, such as constructing wastewater treatment plants or promoting decentralized wastewater treatment methods.
e) **Groundwater management**: Monitoring and regulating groundwater use to prevent overexploitation and ensuring its sustainable availability for future generations.

f) **Education and awareness**: Conducting awareness campaigns, workshops, and training programs to educate the community about water management practices and the importance of water conservation.

7.7 Role of Sarpanch/President of Gram Panchayat: As the head of the village, the Sarpanch has to provide overall leadership to the process of ensuring drinking water security for the villages/ households. The Sarpanch is responsible for organizing Gram Sabha with active participation from all stakeholders, formation of a capable VWSC, conflict resolution in a transparent and just manner, monitoring construction to ensure quality, monitoring expenditure to ensure that the funds available are used in a cost-effective manner. Providing equitable water supply to all including SCs, STs and poorer households, co-ordination with the block/district and Support Organizations.

7.8 Role of Ward Members & Gram Sabha: Panchayat/Ward members are responsible for providing leadership at the ward level, building awareness of ward citizens, mobilizing active participation of ward citizens in Gram Sabha meetings. And ensuring that the needs of all the sections in their wards have been adequately represented in the village drinking water plans and monitoring the process of planning, construction, expenditure and day to day management of water supply. The Gram Sabha approves the village plans and reports from the GP/VWSC on financial accounts, implementation progress and operational performance. It is also an institution for social audit.

7.9 Test your Knowledge: Fill up the Blanks

1. The Pani Samiti is a statutory committee of the.....
2. The President of the VWSC can be the _____of the GP or an elected member as decided by the Gram Sabha.
3. The Gram Panchayat has the ..... to monitor the quality of drinking water in the village.
4. The _____approves the village Action plans of water supply
5. The Gram Panchayat ..... with line departments, agencies, and NGOs for providing technical assistance in water supply

Chapter 8: Planning for Water Sufficient Village

Target 11: Eliminate gender disparity in all levels
Target 13: Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol

Learning Objectives

- Village Action Plan (VAP)
- Village Water Security Plan.
- Main components of village security plan

8.1 Introduction: Planning for water sufficiency is crucial for the overall development and well-being of a village. It ensures equitable access to water resources, promotes sustainable water management, and prepares the community to face future water challenges. A water-sufficient village is more resilient, healthier, and economically prosperous, making it a desirable and sustainable place to live for its residents.

8.2 Village Action Plan (VAP): The Gram Panchayat as required under JJM guidelines has to prepare a 5–year Village Action Plan co-terminus with the 15 Finance Commission period and dovetailing fund from other flagship schemes. To prepare a Village Action Plan under, the following steps can be followed:

a) **Need Assessment**: Conduct a comprehensive assessment of the current water situation in the village. This includes evaluating the availability, quality, and accessibility of water sources, existing infrastructure, water usage patterns, and the needs and preferences of the community.
b) **Community Engagement**: Involve the local community in the planning process. Organize meetings, workshops, and consultations to gather their inputs, understand their concerns, and build consensus on the goals and objectives of the Village Action Plan.
c) **Setting Goals and Objectives**: Based on the baseline assessment and community inputs, define specific goals and objectives for making the village water-sufficient. These goals should be realistic, achievable, and aligned with the broader objectives of the JJM
d) **Identification of Water Sources**: Identify potential water sources within and around the village. This may include groundwater, rainwater harvesting, surface water bodies, and spring rejuvenation. Assess the feasibility and sustainability of each source in meeting the village's water needs.
e) **Infrastructure Planning**: Develop a plan for the construction, renovation, or expansion of water infrastructure in the village. This may involve building wells, boreholes, hand pumps, water storage tanks, pipelines, or water treatment facilities. Ensure that the infrastructure design is appropriate for the local conditions and considers long-term maintenance requirements.

f) **Water Conservation and Management**: Integrate water conservation and management strategies into the action plan. This includes promoting efficient water use practices, implementing rainwater harvesting systems, encouraging wastewater recycling and reuse, and promoting water-efficient irrigation techniques in agriculture.
g) **Financial Planning**: Assess the financial requirements for implementing the Village Action Plan. Explore potential funding sources, such as government schemes, grants, community contributions, and partnerships with NGOs or private organizations. Develop a budget and explore options for sustainable financing and cost recovery mechanisms. There is a potential within various Central/ State Government schemes to complement one another and can be successfully converged to enhance qualitative and sustainable outcomes for development, thereby improving the lives of people and communities.
h) **Plan Approval**: The VAP must be approved in the Gram Sabha, wherein at least 80% of the village community present concurs on the proposed plan. VAP is then submitted to District Water & Sanitation Mission (DWSM). Technical approval, whenever required, is accorded by the concerned line department/ agency of the State
i) **Implementation Strategy**: Develop a detailed implementation strategy with clear timelines, responsibilities, and monitoring mechanisms. Identify the key stakeholders involved in executing different activities and establish coordination mechanisms to ensure effective implementation.
j) **Capacity Building**: Provide training and capacity-building programs to empower the local community and village-level institutions in water management, operation, and maintenance of water infrastructure, water quality monitoring, and water-related entrepreneurship.
k) **Monitoring and Evaluation**: Establish a system for monitoring the progress and evaluating the effectiveness of the Village Action Plan. Regularly review the outcomes, identify challenges, and make necessary adjustments to ensure the plan's success.

8.3 Village Water Security Plan: The Village Water Security Plan ensure optimum utilization of available water to meet the needs of various users. It will have information about the existing water supply situation, what improvements in the existing system or new system users need, want and can afford, and how the proposed improvements or new infrastructure will be funded, implemented and managed to ensure that drinking water is available at all times in the village for all households. In order to achieve this, the GP/VWSC must plan accordingly and implement appropriate mitigation measures, such as rooftop rainwater harvesting, groundwater recharge, restoration of traditional storage tanks, and conjunctive use of surface water and groundwater.

8.4 Components of village security plan: To ensure sustainable supply of drinking water, a village water security plan should include the following

a) Village water source sustainability plan
b) Village water safety plan
c) Operating plan; and
d) Service implementing plan.

After completion of surveys and compilation of data, a Gram Sabha meeting is called in which all community members, GP representatives, GPWSC/VWSC members, all facilitators and technical resource persons participate. Technical resource persons from the rural water supply department explain, in detail, all technical and financial aspects of various options in this meeting. After this, based on discussions, the GP may select the most suitable option.

The technical facilitator should again explain technical and financial details of the option selected by the GP. The Case Studies for discussion during planning exercise are given in **Annexure I.**

The list of Possible Activities for GPDP, as incorporated in the GPDP Portal is given in the **Annexure II**.

The Department Wise Components that can be converged is given in **Annexure III.**

8.5 Test your Knowledge: Fill up the Blanks

1. Planning for ..... is crucial for the overall development and well-being of a village

2. The Village Water Security Plan ensure ..... of available water to meet the needs of various users

3. A water-sufficient village is more resilient, healthier, and ..... prosperous

4. The village action plan for water supply has to be comprehensive and participatory and based on full ..... with other Schemes

5. The GP should establish a system for monitoring the progress and ..... the effectiveness of the Village Action Plan

ANNEXURE - I
Case Studies for discussion during planning exercise

Case Study 1: Water Scarcity in Vishnupur

Vishnupur is a village is a rural community located in a remote region with a population of approximately 1,500 residents. Despite its picturesque landscape, the village faces a significant challenge - the scarcity of functional house tap connections for drinking water. The primary source of water in the village is a nearby river, which is the lifeline for both agricultural and domestic purposes. Historically, the villagers relied on fetching water manually from the river, but due to population growth and climatic changes, this source has become inadequate to meet the growing demands. Water fetched from the river is often contaminated, leading to waterborne diseases and health issues. Lack of clean drinking water affects the overall health and well-being of the villagers, especially vulnerable groups like the elderly and children. With no adequate house tap connections, villagers, especially women and children, spend a considerable amount of time each day walking long distances to fetch water from the river. The lack of access to clean water and sanitation facilities in schools further compounds the issue, affecting the learning environment and academic performance.

Discuss the following issues of the village and suggest action points to Gram Panchayats:

a) Identify the reasons for the insufficient number of functional house tap connections in Village. Brainstorm potential solutions to address the water scarcity issue.
b) Analyze the role the GP can play in providing clean drinking water access to rural communities like Village
c) Discuss how GP can adopt rooftop harvesting, storage tanks, and percolation pits to capture and store rainwater.
d) Discuss how solving the water scarcity by the GP could have a positive ripple effect on various aspects of the community's well-being.

Case Study 2: Declining Ground Water in Yapral Village

Yapral Village is a small, remote village with a population of approximately 2,000 residents. The village primarily relies on groundwater for all its water needs. However, the water levels have significantly declined over the years due to factors like over-extraction and climate change. As a result, the bore wells, which were once a reliable water source, are no longer sufficient to meet the demand.. The scarcity of water for irrigation impacts crop yields and reduces agricultural productivity, affecting the villagers' income and overall economic development Moreover, the Gram Panchayat has not implemented any measures like rainwater harvesting or groundwater recharging structures, exacerbating the water crisis.

Discussion Points to Improve Water Scarcity:

a) Discuss the implementation of groundwater recharging structures, such as check dams, recharge wells, and recharge trenches, to replenish the groundwater levels
b) How the GP can encourage active involvement of the villagers in water conservation initiatives to manage water resources, monitor usage, and prevent wastage.
c) Explore ways to seek financial and technical support from government schemes and programs related to water conservation.

d) How to Promote water-saving practices like using drip irrigation and sprinkler systems etc for sustainable agriculture.
e) How GP can sessions to sensitize villagers about the importance of water conservation, sustainable water use, and the consequences of water scarcity.

Case Study 3: On O&M of water supply scheme in the Gram Panchayats

A single village water supply scheme constructed under jal Jeevan mission is handed to Gram Panchayat for. Operation and maintenance. But the gram panchayat has no technical manpower to maintain the. System properly. The gram panchayat is facing difficulty to timely supply of water to residents. The Gram panchayat is contemplating to outsource the operation and maintenance of water supply to system either to village SHGs or to private contractors. They need guidance how to levy & collect user charges where House tap connections are given

Discussion Points to Improve Water Supply in the Village:

a) Discuss the possibility of providing technical training to members of the Gram Panchayat or local community members .to build the required expertise for system maintenance.
b) Analyse the advantages and disadvantages of outsourcing the O &M of the water supply system to SHGs or private contractors.
c) Discuss the benefits of community involvement in decision-making and the sustainability of locally-driven initiatives.
d) Discuss how to raise awareness about water conservation practices among the villagers about efficient water use in households, agriculture, and livestock management.
e) Explore strategies for long-term sustainability of the water supply system in term of s regular maintenance, Collection of user charges, and contingency plans for emergencies.

ANNEXURE - II: Activities for GPDP

Activity	Focus Area	Activity Type	Component Type	Work Type	Output Type
Amrit Sarovar	Drinking water	Public Works	Tied Grants	New/Fresh	Asset
Augmentation of existing sources	Drinking water	Public Works	Tied Grants	Maintenance	Asset
Awareness Generation on cleanliness and sanitation	Health	Public Works	Untied Grants	New/Fresh	Community Service
Chlorination of drinking water source	Drinking water	Public Works	Untied Grants	Maintenance	Maintenance
Cleaning of over-head tank	O&M of community system	Public Works	Untied Grants	Maintenance	Maintenance
Construction of community washing & bathing complex	Health	Public Works	Untied Grants	New/Fresh	Asset
Construction of disable friendly in community toilet	Health	Public Works	Untied Grants	New/Fresh	Asset
Construction of Drip irrigation system	Water Conservation	Public Works	Untied Grants	New/Fresh	Asset
Construction of new Piped Water Supply schemes	Drinking water	Public Works	Untied Grants	New/Fresh	Asset
Construction of ramp in existing toilets	Health	Public Works	Untied Grants	New/Fresh	Asset

Construction of Water treatment plant	Health	Public Works	Untied Grants	New/Fresh	Asset
Construction works relating to revival of traditional Ponds / Tanks	Land improvement	Public Works	Untied Grants	New/Fresh	Asset
Converting abandoned borewells into water recharging structure	Drinking water	Public Works	Tied Grants	New/Fresh	Asset
Creation of a new rainwater harvesting structure	Drinking water	Public Works	Tied Grants	New/Fresh	Asset
Creation of a new source of drinking water	Drinking water	Public Works, Beneficiary Oriented Programmes	Tied Grants	New/ Fresh	Asset,Beneficiaries
Creation of cattle troughs	Drinking water	Public Works	Tied Grants	New/Fresh	Community Service
Creation of other water recharging structure	Drinking water	Public Works	Tied Grants	New/Fresh	Asset
Drainage line for grey water	Health	Public Works	Untied Grants	New/Fresh	Asset
Emergency breakdown and up-gradation post disasters/ exigencies	Drinking water	Public Works	tied Grants	New/ Fresh	Asset
Extension of existing pipeline	Drinking water	Public Works	Untied Grants	Upgradation	Upgradation

Fencing of Ponds	Drinking water	Public Works	Untied Grants	Maintenance, Up Gradation New/Fresh	Asset
Grey Water management - collection infrastructure	Drinking water	Public Works	Tied Grants	New/Fresh	Asset
Grey water management - treatment and reuse infrastructure	Drinking water	Public Works	Tied Grants	New/Fresh	Asset
Grey water treatment plant	Health	Public Works	Untied Grants	New/Fresh	Asset
Infrastructure and training on solid and liquid waste management	Health	Public Works	Untied Grants	New/Fresh	Asset
Maintenance of community toilet in market area	Health	Public Works	Untied Grants	Maintenance	Maintenance
Maintenance of Drip irrigation system	Water Conservation	Public Works	Untied Grants	Maintenance	Maintenance
Maintenance of traditional Ponds / Tanks	Land improvement	Public Works	Untied Grants	Maintenance	Maintenance
Maintenance of Water treatment plant	Health	Public Works	Untied Grants	Maintenance	Maintenance
Operation	Drinking	Public	tied Grants	Operat	Operational

and Maintenance of drinking water supply system	water	Works		ional, Mai ntenan ce	,Maintenance
Operation and Maintenance of piped water supply system	Drinking water	Public Works	Untied Grants	Operat ional, Mai ntenan ce	Operational ,Maintenance
Orientation and water user and community groups	Health	Public Works,Be neficiary Oriented Program	Untied Grants	New/F resh	Training /Capacity Buildin Community Service, Beneficiaries
Payment of re-occurring electricity charges of intra-village water supply systems	Drinking water	Public Works	Tied Grants	Operat ional	Operational
Piped drinking water to public institutions	Drinking water	Public Works	Untied Grants	New/F resh	Asset
Piped water connection to markets	Drinking water	Public Works	Untied Grants	New/F resh	Asset
Piped water supply to HH	Drinking water	Public Works	Untied Grants	New/F resh	Asset
Piped water to mela ground	Drinking water	Public Works	Untied Grants	New/F resh	Asset
Pipe water connection to playground	Drinking water	Public Works	Untied Grants	New/F resh	Asset
Pipe water supply to village health centre	Drinking water	Public Works	Untied Grants	New/F resh	Asset
Pipe water	Drinking	Public	Untied	New/F	Asset

to residential schools	water	Works	Grants	resh	
Platform construction at community drinking water	Health	Public Works	Untied Grants	New/Fresh	Asset
Prefer a water purification system that wastes less water	Drinking water	Public Works	Untied Grants	New/Fresh	Asset
Providing piped water supply to public institutions	Drinking water	Public Works	Tied Grants	New/Fresh	Asset
Purchase of water testing kit	Drinking water	Public Works	Untied Grants	New/Fresh	Asset
Rejuvenation / desilting of water body	Drinking water	Public Works	Tied Grants	New/Fresh	Asset
Repair of hand pump platform	O&M of community system	Public Works	Untied Grants	Maintenance	Maintenance
Repair of pipe drinking water	Drinking water	Public Works	Untied Grants	Maintenance	Maintenance
Separate toilet construction for men & women in public institutions and markets in GP areas	Health	Public Works	Untied Grants	New/Fresh	Asset
Tap water connections to households	Drinking water	Public Works ,Beneficiary Oriented	tied Grants	New/Fresh	Asset,Beneficiaries
Technical &	Drinking	Pubic	Tied Grants	Operat	Operational

administrative expenses	water	Works		ional	
Upgradation of existing toilets as disable friendly	Health	Public Works	Untied Grants	Upgradation	Upgradation
VPRP Public Goods - Community toilet	Sanitation	Public Works	Village Poverty Reduction Plan	New/Fresh	VPRP Beneficiaries
VPRP Resource Development - Construction of Borewell	Drinking water	Public Works	Village Poverty Reduction Plan	New/Fresh	VPRP Beneficiaries
VPRP Resource Development - Construction of Check dams	Land improvement	Public Works	Village Poverty Reduction Plan	New/Fresh	VPRP Beneficiaries
VPRP Resource Development - Construction of Pond	Water Conservation	Public Works	Village Poverty Reduction Plan	New/ Fresh	VPRP Beneficiaries
VPRP Resource Development - Construction of Recharge Pits	Drinking water	Public Works	Village Poverty Reduction Plan	New/ Fresh	VPRP Beneficiaries
VPRP Resource Development - Construction of Ring well	Land improvement	Public Works	Village Poverty Reduction Plan	New/ Fresh	VPRP Beneficiaries
VPRP	Land	Public	Village	New/	VPRP

Resource Development - Construction of Tubewell	improvement	Works	Poverty Reduction Plan	Fresh	Beneficiaries
VPRP Resource Development - Construction of Water Tank	Drinking water	Public Works	Village Poverty Reduction Plan	New/ Fresh	VPRP Beneficiaries
VPRP Resource Development - Construction of Well	Land improvement	Public Works	Village Poverty Reduction Plan	New/ Fresh	VPRP Beneficiaries
VPRP Resource Development - Rainwater harvesting	Drinking water	Public Works	Village Poverty Reduction Plan	New/ Fresh	VPRP Beneficiaries
VPRP Resource Development -Sand Filter Construction wells recharge	Drinking water	Public Works	Village Poverty Reduction Plan	New/ Fresh	VPRP Beneficiaries
Water Supply to villages	Drinking water	Public Works	Tied Grants	New/ Fresh	Asset

ANNEXURE - III: Department Wise Components that can be converged

Name of the scheme & Ministry/ Dept	Components that can be converged
Swachh Bharat Mission - Grameen M/o Jal Shakti	Greywater management – soak pits (individual/ community), waste stabilization ponds, etc.
MGNREGS M/o Rural Development	All water conservation activities under Natural Resource Management (NRM) component
XV Finance Commission Grant 30% Tied Grant M/o finance	Drinking water supply including water conservation, water recycling & grey water management
Watershed Development Component of PMKSY D/o Land Resources	Watershed management/ RWH/artificial recharge, creation/ augmentation of water bodies, etc.
Repair, Renovation and Restoration of water bodies D/o Water Resources, River Development	Restoration of larger water bodies
Rashtriya Krishi Vikas Yojana (RKVY) M/o Agriculture, Cooperation and Farmers Welfare	Watershed related works
Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)	Provision of micro-irrigation for various water-intensive crops to reduce drawl of water from aquifers
Compensatory Afforestation fund Management and Planning Authority M/o Environment, Forests and Climate Change	Afforestation, regeneration of forest ecosystem, restoration and strengthening of springs, watershed development, etc.
Pradhan Mantri Kaushal Vikas Kendra M/o Skill Development and Entrepreneurship	Skill development, training, etc. for human resources required for rural water supply schemes

Samagra Shiksha M/o Education	Provision of drinking water supply in schools
Aspirational districts programme NITI Aayog	Water conservation activities taken up under discretionary funds with District Collector
MPLAD M/o of Statistics and Programme Implementation	In-village infrastructure
MLALAD State Govt	
Grants under Art. 275 of Constitution/ Tribal Sub Scheme M/o Tribal Affairs	
DAY-NRLM /SLRM M/o Rural Development	Developing women entrepreneurs and SHG led enterprises for water supply services

ANNEXURE - IV
Further Reading on Water Sufficient Village

1. Drinking Water in GPs
https://jalshakti-ddws.gov.in/sites/default/files/Gram_Panchayat_Report.pdf

2. A Handbook for Gram Panchayats - To Plan, Implement, Operate, Maintain and Manage Drinking Water Security
https://jalshakti-ddws.gov.in/sites/default/files/GPHandbook_0.pdf

3. Manual for the utilization of th 15 Finance Commission tied grants to Rural Local Bodies/ PRIs for water & sanitation (2021-2626)
https://jaljeevanmission.gov.in/sites/default/files/manual_document/FFC_22-10-21_English.pdf

4. Jal Jeevan Mission Har Ghar Jal
https://jaljeevanmission.gov.in/sites/default/files/manual_document/JJM-Reform-Document-English.pdf

5. Expert Committee Report on Measurement and monitoring of water service delivery in rural areas
https://jaljeevanmission.gov.in/sites/default/files/manual_document/technical-expert-committee-report-on-measuring-and-monitoring_0.pdf

6. Drinking Water Quality Monitoring & Surveillance Frame work
https://jaljeevanmission.gov.in/sites/default/files/manual_document/WQMS-Framework.pdf

7. Margdarshika for Gram Panchayat & VWSC to provide safe drinking water in rural households
https://jaljeevanmission.gov.in/sites/default/files/guideline/Margdarshika_for_Gram_Panchayat_and_Paani_Samiti.pdf

8. Operational guidelines for the implementation of Jal Jeevan Mission
https://jaljeevanmission.gov.in/sites/default/files/guideline/JJM_Operational_Guidelines.pdf

9. NIRDPR Training Module on Service Contract Agreements for Wastewater Management in GPs
http://nirdpr.org.in/nird_docs/sb/sb230721-2.pdf

10. Water Supply and Sanitation Service Level Benchmarks & Model Contracts for GPs – MoPR

ANNEXURE - IV

Links to Videos on Ttheme-4: Water Sufficient Village

1. https://www.youtube.com/watch?v=wYX2XJq6wmE&ab_channel
2. https://www.youtube.com/watch?v=Zq2ZBKwtQi4&ab_channel
3. https://www.youtube.com/watch?v=kO62IGPdR-8&ab_channel
4. https://www.youtube.com/watch?v=ScuBao_4PUY&ab_channel
5. http://www.youtube.com/watch?v=ZR4KKYFsdew&ab_channel
6. https://www.youtube.com/watch?v=8L0k9e2nByQ&ab_channel
7. https://www.youtube.com/watch?v=AlY5ZXVl0qo&ab_channel
8. https://www.youtube.com/watch?v=CwCX0JKgl7U&ab_channe
9. https://www.youtube.com/watch?v=72W05pkYguc&ab_channel
10. https://www.unep.org/news-and-stories/video/right-water

ANNEXURE - VI

MCQs on Theme 4: Water Sufficient Village

1. What is a water-sufficient village?
   a) A village that has abundant water resources

   b) A village that efficiently manages and conserves water

   c) A village that relies on external sources for water supply

   d) A village that promotes water wastage

2. Which of the following is a characteristic of a water-sufficient village?
   a) High water consumption per capita

   b) Limited access to clean water sources

   c) Effective rainwater harvesting systems

   d) Dependence on neighboring villages for water supply

3. Which of the following is NOT a benefit of water sufficiency in a village?
   a) Reduced reliance on external water sources

   b) Increased agricultural productivity

   c) Improved public health and hygiene

   d) Escalated conflicts over water resources

4. Which technique is commonly used in a water-sufficient village to conserve water?
   a) Drip irrigation systems

   b) Frequent lawn watering

   c) Untreated wastewater disposal

   d) Unregulated water extraction

5. How can a water-sufficient village promote water conservation among its residents?
   a) Implementing water rationing policies

   b) Encouraging excessive water usage

   c) Ignoring leaky water infrastructure

   d) Limiting access to sanitation facilities

6. Which of the following is an effective method for a water-sufficient village to manage water supply during droughts?
   a) Building large swimming pools

   b) Implementing water-intensive industries

   c) Investing in water storage and retention systems

d) Encouraging wasteful agricultural practices

7. How can a water-sufficient village ensure equitable access to water resources?
   a) Providing preferential treatment to certain groups

   b) Implementing strict water usage restrictions

   c) Developing community-driven water management plans

   d) Privatizing water supply systems

8. What role can technology play in achieving water sufficiency in a village?
   a) Reducing the need for water conservation

   b) Monitoring and optimizing water usage

   c) Promoting excessive water consumption

   d) Neglecting the maintenance of water infrastructure

9. Which of the following is an example of water reuse in a water-sufficient village?
   a) Disposing of wastewater in nearby rivers

   b) Extracting water from underground sources

   c) Treating and reusing graywater for irrigation

   d) Relying solely on rainwater for all needs

10. How can education and awareness contribute to creating a water-sufficient village?
    a) Encouraging wasteful water practices

    b) Promoting water pollution

    c) Raising awareness about water conservation

    d) Discouraging community participation in water management

11. Which factor is essential for the success of a water-sufficient village?
    a) Overexploitation of water resources

    b) Lack of government support and policies

    c) Active community participation and engagement

    d) Dependence on external aid for water supply

12. What is the primary objective of a water-sufficient village?
    a) Maximizing water consumption per capita

    b) Minimizing water availability to the community

    c) Ensuring sustainable water management and usage

    d) Promoting water scarcity and conflicts

13. Which of the following is a strategy to reduce water demand in a water-sufficient village?

a) Encouraging excessive irrigation practices

b) Promoting the use of open water bodies for washing

c) Installing water-efficient fixtures and appliances

d) Increasing reliance on bottled water

14. How can a water-sufficient village promote the preservation of natural water sources?
a) Encouraging deforestation around water bodies

b) Promoting extensive industrial development near water sources

c) Implementing strict regulations on water pollution

d) Diverting water from neighboring villages

15. What is the long-term impact of achieving water sufficiency in a village?

a) Reduced vulnerability to water scarcity and drought

b) Increased dependence on external water sources

c) Escalated conflicts over water resources with neighboring communities

d) Decline in public health and hygiene standards

16. Which of the following is a renewable source of water in a water-sufficient village?
a) Underground aquifers

b) Depleted reservoirs

c) Rainwater harvesting tanks

d) Imported bottled water

17. What is the role of community participation in maintaining water sufficiency in a village?
a) Limited impact on water management practices

b) Increased reliance on external organizations for water supply

c) Active involvement in water conservation and governance

d) Negligible contribution to sustainable water usage

18. How can a water-sufficient village support sustainable agricultural practices?
a) Promoting excessive water usage in irrigation

b) Implementing pesticide-intensive farming methods

c) Encouraging organic farming techniques and efficient irrigation systems

d) Relying solely on rain-fed agriculture

19. Which of the following is a social benefit of achieving water sufficiency in a village?
a) Increased competition and conflicts within the community

b) Improved gender equality in access to water resources

c) Decreased awareness about water conservation practices

d) Neglected sanitation and hygiene standards

20. How can a water-sufficient village contribute to environmental conservation?
a) Discharging untreated wastewater into natural water bodies

b) Promoting deforestation around water sources

c) Conserving and preserving local ecosystems and biodiversity

d) Increasing pollution levels in the surrounding environment

Answer Key to MCQs

1. b) A village that efficiently manages and conserves water
2. c) Effective rainwater harvesting systems
3. d) Escalated conflicts over water resources
4. a) Drip irrigation systems
5. a) Implementing water rationing policies
6. c) Investing in water storage and retention systems
7. c) Developing community-driven water management plans
8. b) Monitoring and optimizing water usage
9. c) Treating and reusing greywater for irrigation
10. c) Raising awareness about water conservation
11. c) Active community participation and engagement
12. c) Ensuring sustainable water management and usage
13. c) Installing water-efficient fixtures and appliances
14. c) Implementing strict regulations on water pollution
15. a) Reduced vulnerability to water scarcity and drought
16. c) Rainwater harvesting tanks
17. c) Active involvement in water conservation and governance
18. c) Encouraging organic farming techniques and efficient irrigation systems
19. b) Improved gender equality in access to water resources
20. c) Conserving and preserving local ecosystems and biodiversity

ANNEXURE – VII: Learning Exercise- Fill up the blanks in the table below

Measures for water conservation & water Recycling	Key Activities	Beneficiaries	Benefits	Role of Gram Panchayat
Water Conservation	Reduce water----------	Entire village &----------	Sustainable water----------	Awareness----------
	Promoting responsible----------	Residents &----------	Reduced water----------	Implementing water saving----------
	Raising awareness about----------	---------& farmers	Enhanced---------- for all	Monitoring water usage and----------
	Adoption of efficient----------	Agricultural ----------	Increased----------	Providing resources for water saving----------
	Fixing----------and repairing pipelines	Domestic--------	Lower maintenance costs for----------	Facilitating workshops on----------
	Implementing water saving----------	---------- sector	Reduced strain on----------	Collaboration with experts and----------
Water Recycling	Treating and reusing----------	Residential areas &----------	Reduced pollution and demand fo----------	Developing waste water treatment----------
	Separating greywater and----------	---------- & farmers	Conservation of----------	Establishing guidelines for safe----------
	Educating about safe water ----------	Agricultural land	Improved---------- ----------	Promoting---------- ---------- initiatives
Rainwater Harvesting	Collecting rainwater for----------	Residential----------	Reduced dependence----------	Promoting RWH structures and ----------
	Installing rooftop----------	Community----------	Lower water bills and----------	Guiding residents on RWH----------
	Storing rainwater for----------	Agricultural----------	Increased groundwater ----------	Offering subsidies for RWH----------

Measures for water conservation & water Recycling	Key Activities	Beneficiaries	Benefits	Role of Gram Panchayat
Groundwater Recharging	Creating methods to recharge----------	Agriculture &----------	Improved ground----------	Identifying suitable recharging----------
	Diverting rainwater to recharge pits or----------	Farmers, local----------	Enhanced access to----------	Facilitating community led----------
	Percolation trenches and----------	Drinking water ----------	-----===== water supply	Collaborating with---------- and hydro-geologists
Rejuvenating and desilting of Water Bodies	Clearing silt and debris from----------	Local residents	Enhanced water----------	Organizing community led----------
	Restoring natural flow of----------	Aquatic ----------	Improved aquatic ----------	Allocating resources for cleaning and----------
	Planting native vegetation around----------	Recreational users	Aesthetic and---------- benefits	Implementing regulations for----------
Water Efficient Agricultural Practices	Promoting drip----------	Farmers	Increased ----------	Offering training on water efficient----------
	Efficient use of fertilizers and----------	Agriculture sector	Lower----------	Supporting adoption of---------- methods
	Crop rotation and---------- practices	Soil health and ----------	Improved soil health and----------	Organizing workshops on----------

ANNEXURE - VIII: Answers to fill up the blank questions

Chapter 1 Answers

1. Jal Jeevan Mission (JJM)
2. 9 targets, 24 indicators
3. 30 %
4. 55 LPCD
5. Goals

Chapter 2: Answers

1. 2024
2. 100 %
3. Gram Panchayat
4. Swachh Bharat Mission-G
5. Human Resources
6. 10 %

Chapter 3: Answers

1. waterborne diseases
2. individuals
3. Environmental
4. hand washing
5. toilets

Chapter 4: Answers

1. Maintenance
2. Operations
3. Monitoring
4. Risk to health
5. Water user charges

Chapter 5: Answers

1. Professional and skilled
2. Benchmarks
3. self-employment
4. Provisions
5. improve and maintain

Chapter 6: Answers

1. water consumption
2. water usage in agriculture
3. conserve water
4. water-saving practices

5. later use

Chapter 7: Answers

1. Gram Panchayat
2. Sarpanch/President
3. responsibility
4. Gram Sabha
5. Collaborates

Chapter 8: Answers

1. water sufficiency
2. optimum utilization
3. economically
4. convergence
5. evaluating

ANNEXURE - IX: Answers to learning Exercise

Measures for water conservation & water Recycling	Key Activities	Beneficiaries	Benefits	Role of Gram Panchayat
Water Conservation	Reduce water wastage	Entire village & community	Sustainable water supply	Awareness campaigns
	Promoting responsible water usage	Residents & farmers	Reduced water bills	Implementing water saving policies
	Raising awareness about water conservation	Residents & farmers	Enhanced water availability for all	Monitoring water usage and leakage
	Adoption of efficient irrigation techniques	Agricultural sector	Increased crop yield	Providing resources for water saving technologies
	Fixing leakages and repairing pipelines	Domestic users	Lower maintenance costs for infrastructure	Facilitating workshops on water conservation
	Implementing water saving technologies	Agriculture sector	Reduced strain on water sources	Collaboration with experts and organizations
Water Recycling	Treating and reusing wastewater	Residential areas & farmers	Reduced pollution and demand for freshwater	Developing waste water treatment infrastructure
	Separating greywater and blackwater	Residential areas & farmers	Conservation of water resources	Establishing guidelines for safe water recycling
	Educating about safe water recycling practices	Agricultural land	Improved ecosystem health	Promoting water recycling initiatives
Rainwater Harvesting	Collecting rainwater for various uses	Residential households	Reduced dependence on external water sources	Promoting RWH structures and techniques
	Installing rooftop harvesting systems	Community buildings	Lower water bills and conservation	Guiding residents on RWH implementation
	Storing rainwater for future use	Agricultural fields	Increased groundwater recharge	Offering subsidies for RWH installations
Groundwater Recharging	Creating methods to recharge groundwater	Agriculture & residential areas	Improved ground water levels	Identifying suitable recharging methods

Measures for water conservation & water Recycling	Key Activities	Beneficiaries	Benefits	Role of Gram Panchayat
	Diverting rainwater to recharge pits or wells	Farmers, local ecosystem	Enhanced access to clean water	Facilitating community led recharge initiatives
	Percolation trenches and check dams	Drinking water supply	Sustainable water supply	Collaborating with experts and hydro-geologists
Rejuvenating and desilting of Water Bodies	Clearing silt and debris from water bodies	Local residents	Enhanced water storage capacity	Organizing community led cleaning campaigns
	Restoring natural flow of water	Aquatic ecosystem	Improved aquatic biodiversity	Allocating resources for cleaning and desilting
	Planting native vegetation around water bodies	Recreational users	Aesthetic and recreational benefits	Implementing regulations for water body protection
Water Efficient Agricultural Practices	Promoting drip irrigation	Farmers	Increased crop yield	Offering training on water efficient practices
	Efficient use of fertilizers and pesticides	Agriculture sector	Lower input costs	Supporting adoption of water efficient methods
	Crop rotation and agroforestry practices	Soil health and ecosystem	Improved soil health and fertility	Organizing workshops on sustainable farming

Vol III - FAQs
Theme 4: Water Sufficient Village

Session 1: Concept and Significance of Water Sufficient Village

Session Brief: Water sufficiency is a crucial concept in the pursuit of sustainable development, particularly in rural areas. The concept of water-sufficient villages has emerged as a holistic approach to address this issue, emphasizing the efficient use and management of water resources within local communities. Water-sufficient villages are those where water availability meets the demand for various purposes, including domestic use, agriculture, and industrial activities, while ensuring the sustainability of water sources and safeguarding the environment. This introductory topic explores the concept and significance of water-sufficient villages in the context of the Sustainable Development Goals (SDGs), highlighting the importance of this approach in achieving water security, poverty alleviation, food production, and overall community well-being. By adopting water sustainability practices, villages can become self-reliant in managing their water resources and contribute to a more sustainable future.

1. **Why is it important for villages to be water-sufficient?**
   Water sufficiency in villages is crucial for several reasons. It ensures a stable and reliable water supply for the community's basic needs, such as drinking, sanitation, and hygiene. It promotes agricultural productivity, supports economic activities, reduces dependency on external water sources, mitigates the effects of droughts or water scarcity, and contributes to the overall well-being and development of the village.

2. **How can villagers actively participate in achieving water sufficiency in villages?**
   Villagers can actively participate by practicing water conservation methods, implementing rainwater harvesting at the individual and community level, reporting water leakages and wastage, participating in awareness programs, and supporting Gram Panchayat initiatives for water management and conservation

3. **What are the benefits of water sufficiency in villages**?
   Water sufficiency brings numerous benefits to villages. It improves the health and sanitation conditions of the community, reduces the risk of waterborne diseases, increases agricultural productivity and food security, supports livelihoods and economic growth, minimizes conflicts over water resources, and enhances the overall quality of life for villagers.

4. **How does water sufficiency impact agriculture in villages**?
   Water sufficiency plays a critical role in agriculture by ensuring a consistent water supply for irrigation. This allows farmers to cultivate crops throughout the year, increase yields, diversify agricultural practices, and improve livelihoods. Water sufficiency in agriculture contributes to food security, income generation, and sustainable rural development.

5. **Does water sufficiency have environmental benefits**?
   Water sufficiency in villages can have significant environmental benefits. It reduces the overexploitation of natural water sources, preserves ecosystems and biodiversity, maintains the health of rivers and water bodies, supports the recharge of groundwater, and minimizes the need for ecologically damaging water extraction practices. It promotes sustainable water management and protects the environment for future generations.

6. **How can water sufficiency enhance community resilience in villages?**
   Water sufficiency enhances community resilience by reducing vulnerability to water scarcity and droughts. It allows villages to withstand prolonged dry spells, maintain essential services during water crises, and adapt to changing climate conditions. Water-sufficient villages are better equipped to cope with water-related challenges and ensure the well-being of their residents even in adverse circumstances.

7. **Does achieving water sufficiency require significant investments**?
   Achieving water sufficiency in villages may require investments in water infrastructure, technologies, and capacity building. However, the long-term benefits outweigh the initial costs. Moreover, there are various cost-effective solutions available, such as rainwater harvesting, groundwater recharge, efficient water use practices, and community-based management approaches. Funding support from government programs, grants, and community contributions can also help make water sufficiency more achievable.

8. **How can water sufficiency contribute to the overall development of villages**?
   Water sufficiency is intertwined with overall village development. It creates a solid foundation for socio-economic progress by providing reliable access to water for domestic, agricultural, and industrial needs. This, in turn, attracts investments, improves living standards, enhances educational opportunities, promotes health and sanitation, and encourages the growth of small businesses and entrepreneurship in the village.

9. **Can water sufficiency empower women and marginalized communities in villages?**
   Yes, water sufficiency can empower women and marginalized communities in villages in several ways. Access to sufficient water resources reduces the burden on women who often bear the responsibility of water collection. It frees up their time for education, income-generating activities, and participation in community development. Water sufficiency also enables marginalized communities to improve their living conditions, gain economic independence, and have a stronger voice in decision-making processes related to water management.

10. **How can the concept of water sufficiency be promoted and implemented in villages?**
    Promoting and implementing water sufficiency in villages requires a multi-faceted approach. It involves raising awareness about the importance of water conservation, encouraging community participation, establishing water management committees, implementing sustainable water infrastructure projects, adopting efficient irrigation techniques, promoting rainwater harvesting and groundwater recharge practices, and integrating water management into local development plans.

11. **What are the benefits of making villages water sufficient**?
    Making villages water sufficient brings several benefits, such as ensuring a reliable water supply for agricultural activities, reducing water scarcity during droughts, improving the overall health and hygiene of the community, promoting sustainable development, and enhancing the livelihoods of villagers

Session 2: Har Gar Jal- Initiatives of Jal Jeevan Mission

Session Brief: The Jal Jeevan Mission (JJM) is a flagship program launched by the Government of India with the aim of providing functional household tap connections (FHTCs) to every rural household in the country. The mission's objective is to ensure safe and adequate drinking water supply by 2024 and it seeks to empower communities to manage their water resources effectively.

1 What are the Guidelines of Jal Jeevan Mission Scheme?

The key guidelines of the Jal Jeevan Mission scheme include:

a) Providing piped water supply to every rural household.
b) Ensuring tap connections deliver potable water complying with the Bureau of Indian Standards (BIS) norms.
c) Ensuring water supply is sufficient, sustainable, and meets the minimum water quality standards.
d) Encouraging community participation and engagement in planning, implementation, and management of water supply systems.
e) Implementing water conservation and source sustainability measures to ensure long-term availability of water.
f) Utilizing technology and innovation for efficient water management and monitoring.
g) Ensuring inclusivity by prioritizing areas with low water supply coverage and marginalized communities.

2 Who is eligible to benefit from the Jal Jeevan Mission scheme?

All rural households in India are eligible to benefit from the Jal Jeevan Mission scheme. The primary focus is on households that do not have access to piped water supply, and efforts are made to prioritize marginalized and vulnerable communities

3 How Jal Jeevan Mission is funded?

The Jal Jeevan Mission is primarily funded through a combination of budgetary allocations from the central and state governments, as well as external support from multilateral agencies and financial institutions. The funds are used for infrastructure development, capacity building, awareness campaigns, and other program-related expenses.

4 What are te Components of Jal Jeevan Mission?

The following components are supported under JJM:

a) Development of in-village piped water supply infrastructure to provide tap water connection to every rural household;
b) Development of reliable drinking water sources and/ or augmentation of existing sources to provide long-term sustainability of water supply system;
c) Wherever necessary, bulk water transfer, treatment plants and distribution network to cater to every rural household;

d) Technological interventions for removal of contaminants where water quality is an issue;
e) Retrofitting of completed and ongoing schemes to provide FHTCs at minimum service level of 55 lpcd;
f) Greywater management;
g) Support activities, i.e. IEC, HRD, training, development of utilities, water quality laboratories, water quality testing & surveillance, R&D, knowledge centre, capacity building of communities, etc.; and
h) Any other unforeseen challenges/ issues emerging due to natural disasters/ calamities, which affect the goal of FHTC to every household by 2024, as per guidelines of Ministry of Finance on Flexi Funds.

5 How Planning is done to implement JJM?

To implement JJM, action plans will be prepared at each level, that is, village, district and state.

a) **Village Action Plan (VAP)**: It will be prepared by Gram Panchayat or its sub-committee with support from - implementation support agency (ISA), Public Health Engineering Department (PHED)/ Rural Water Supply (RWS) Department, District Water and Sanitation Mission (DWSM) based on baseline survey, resource mapping and felt needs of the village community. The VAP will be approved in the Gram Sabha, when 80 percent of the village community present in the meeting agree to the prepared plan. VAP will then be submitted to DWSM for further action.

b) **District Action Plan (DAP)**: DWSM will be responsible for its preparation and finalization.

c) **State Action Plan (SAP)**: It needs to be prepared with an objective of achieving overall state drinking water security in such a way as to avoid arranging water supply through tankers/ trains, handpump installation, etc. in any village. The SAP will be prepared and finalized by State Water and Sanitation Mission (SWSM) with the help of PHED/ RWS Department based on DAPs

6 How Water is Supply to households where tap water connections are not feasible?

In such areas, local innovations/ technological solutions will be explored. Suggestive technological solutions to address challenges in the supply of drinking water are as under:

a) Solar energy based stand-alone water supply systems for scattered/ isolated/ tribal/ hilly villages.
b) Community Water Purification Plant (CWPP) in groundwater contaminated areas.
c) In cold deserts, solutions may be explored to enhance and store run-off water in small tanks - traditional water harvesting structure..
d) In hard rock areas, bore-blast technique, fracture seal cementation, stream blasting, etc. may be explored.

e) In hilly areas, adopting spring-based sources, rain water harvesting and standalone bore-well systems (if feasible) will be explored.
f) In coastal areas, energy efficient small desalination plants with high recovery ratio will be explored, along with construction of sub-surface dykes in rivers.
g) Use of Internet of Things (IoT), Geographic Information System (GIS) software, etc., will be required for planning and monitoring.

7 How Community can contribute to JJM?

The VWSC/ *Paani Samiti* will implement the in-village piped water supply infrastructure and related source development. Communities will contribute towards 10 percent of the capital cost in cash and/or kind and/or labour in all villages except for hilly and forested areas/ NE and Himalayan States and villages having more than 50 percent SC and/or ST population, where community contribution would be 5 percent of the capital cost.

8 What are Water quality standards under Jal Jeevan Mission?

The Jal Jeevan Mission adheres to the Bureau of Indian Standards (BIS) norms for water quality. The treated water supplied through tap connections must meet the prescribed BIS standards to ensure it is safe for drinking and domestic use.

9 How Jal Jeevan Mission is monitored?

The Jal Jeevan Mission scheme is monitored at different levels, including central, state, district, and village levels. Regular reviews, data analysis, and progress reports are used to assess the implementation status and the achievement of targets. Independent third-party assessments and field visits are conducted to ensure transparency and accountability in the scheme's implementation.

10 What are the Expected outcomes of the Jal Jeevan Mission scheme?

The expected outcomes of the Jal Jeevan Mission scheme include providing tap connections to all rural households, ensuring access to safe and clean drinking water, reducing water-borne diseases, promoting water conservation and sustainability, empowering.

Session 3: Improved Water Supply in Villages- XV FC on Award

Session Brief: Drinking water supply is one of the key subject devolved to Panchayats. The Government of India is implementing a flagship programme, Jal Jeevan Mission, to provide potable drinking water to all rural households in collaboration with the Gram Panchayats. Further SDG -6 is about "Clean water and Sanitation for all". To ensure that the Panchayats are adequately funded, for providing basic services the XV Finance Commission has recommended a sum of Rs 2,36,805 cr for the years 2021-26 to Panchayats, out of which 30% is to be earmarked for drinking water, rain water harvesting and water recycling.

1. What can the Tied grant for water supply be used for?

The Tied grant for water supply (30% of total grant) is intended to be utilized for projects and initiatives aimed at improving water supply infrastructure, such as construction of reservoirs, pipelines, water treatment plants, and distribution networks. It can also be used for implementing water conservation and management measures, promoting sustainable water practices, and addressing specific water-related challenges

2. **How is the allocation of the Tied grant for water supply determined**?

The allocation of the Tied grant for water supply is determined by the 15th Finance Commission through a comprehensive assessment of factors such as the state's population, performance, and specific needs related to water supply infrastructure. The Commission considers various parameters to ensure a fair and equitable distribution of funds.

3. Are there any restrictions on the utilization of the Tied grant for water supply?

Yes, there are typically specific conditions and guidelines associated with the utilization of the Tied grant for water supply. These may include adherence to project timelines, compliance with environmental regulations, maintaining transparency and accountability in project implementation, and ensuring the sustainability of water supply systems.

4. **How can states access and utilize the Tied grant for water supply?**

States can access the Tied grant for water supply by submitting proposals or plans to the MoPR. The MoPR after scrutiny will forward to MoJS. The MoJS then forward it to Ministry of Finance, GoI highlighting their specific needs and proposed projects. Upon approval, the funds are typically disbursed, and the utilization is closely monitored.

5. Can the Tied grant for water supply be combined with other funding sources?

Yes, in many cases, the Tied grant for water supply can be combined with other sources of funding, such as state government allocations & central government schemes, however, the specific guidelines provided by the 15th Finance Commission should be followed regarding the utilization and reporting of funds.

6. Is there a reporting mechanism for the utilization of the Tied grant for water supply?

Yes, there is typically a reporting mechanism in place for states and authorities receiving the Tied grant for water supply. They are required to provide periodic updates on the progress of the projects, utilization of funds, and achievement of project objectives. This helps ensure transparency and accountability in the utilization of the grant.

7. What happens if the allocated funds from the Tied grant for water supply are not fully utilized?

If the allocated funds from the Tied grant for water supply are not fully utilized within the specified timeframe or according to the conditions set by the 15th Finance Commission, there may be implications for future funding. The MoPR & MoJS may review the utilization and take appropriate measures to ensure effective utilization of funds for water supply projects.

Session 4:

Operation and Maintenance (O&M) of Water Supply System & Revenue Management

Session Brief: Every rural household has drinking water supply in adequate quantity of prescribed quality on regular and long-term basis at affordable service delivery charges leading to improvement in living standards of rural communities. The scope of water supply service in a GP starts from planning of water supply system to source treatment, transmission, storage and equitable distribution. The operation of a water supply system involves activities such as monitoring water sources, ensuring proper functioning of pumps and treatment plants, managing water distribution networks, and maintaining adequate water pressure and quality. The maintenance responsibilities of Gram Panchayats include routine and preventive maintenance activities to ensure the longevity and efficient functioning of the water supply infrastructure. This includes regular inspection, repair of leaks, maintenance of pumps and motors, cleaning of storage tanks, and maintaining the quality of the distribution network.

1. What are single village water supply schemes implemented by Gram Panchayats?

Single village water supply schemes refer to the initiatives undertaken by Gram Panchayats to provide water supply services to a specific village or rural area. These schemes aim to ensure reliable and safe water access for the residents of the village through the implementation and operation of water supply infrastructure.

2. What steps can GP take to ensure sustainable O&M of single village water supply schemes?

To ensure sustainable operation and maintenance, Gram Panchayats can:

a) Develop a comprehensive O&M plan outlining roles, responsibilities, and timelines.
b) Create a dedicated team or assign trained personnel for O&M activities.
c) Implement regular maintenance schedules and conduct preventive inspections.
d) Encourage community participation and raise awareness about water conservation and responsible water use.
e) Establish a revenue collection mechanism, such as water tariffs or user fees, to generate funds for O&M activities.
f) Collaborate with relevant government departments or NGOs for technical support and capacity building

3. What does the operation of single village water supply schemes involve?

The operation of single village water supply schemes includes activities such as regular operation of water sources, pumping stations (if applicable), treatment facilities (if present), storage tanks, and distribution networks. It also involves managing water quality monitoring, metering, billing, customer service, and addressing any operational issues that may arise.

4. How does the Gram Panchayat ensure the quality of water in single village water supply schemes?

Gram Panchayats have the responsibility to monitor and maintain the quality of water in single village water supply schemes. They can achieve this by conducting regular water quality tests, implementing water treatment measures if necessary, and ensuring compliance with water quality standards set by regulatory bodies

5. Why is ensuring water quality important for a Gram Panchayat?

Ensuring water quality is crucial for a Gram Panchayat to protect the health and well-being of its residents. Contaminated water can lead to waterborne diseases and health issues, so it is essential to provide safe and clean drinking water to the community.

6. **What steps can a Gram Panchayat take to monitor water quality in villages?**

Gram Panchayats can establish a regular water quality monitoring program. This involves collecting water samples from various sources, such as taps, wells, and boreholes, and testing them for physical, chemical, and microbial parameters. Regular monitoring helps identify potential issues and take corrective actions promptly.

7. What are the common water quality parameters that should be tested by a Gram Panchayat?

Common water quality parameters to be tested include pH, turbidity, total dissolved solids (TDS), microbial contamination (e.g., presence of E. coli), nitrates, arsenic, fluoride, and other chemical contaminants that may be specific to the region.

8. How can Gram Panchayats ensure access to reliable and accredited water testing laboratories?

Gram Panchayats should collaborate with government agencies, NGOs, or private organizations to establish or access accredited water testing laboratories. They can seek support from higher-level authorities or secure funding for this purpose if needed.

9. **What actions should a Gram Panchayat take if water quality test results show contamination or of permissible limits**?

If water quality test results show contamination of permissible limits, the Gram Panchayat should take immediate action to address the issue. This may involve shutting down the affected water source, issuing public advisories, conducting thorough investigations, and implementing corrective measures. Temporary alternative water supply arrangements may also be necessary while resolving the problem.

10. How can Gram Panchayats prevent water contamination in the first place?

Gram Panchayats can take several preventive measures, including implementing proper waste disposal systems, promoting hygienic practices, restricting activities near water sources that can cause pollution, and ensuring proper maintenance of water supply infrastructure to prevent leaks and contamination.

11. Can Gram Panchayats promote community-based water quality surveillance?

Gram Panchayats can encourage community involvement in water quality surveillance. This can include training community members to conduct simple water tests using testing kits and empowering them to report any abnormalities promptly.

12. What role can Gram Panchayats play in promoting water purification at the household level?

Gram Panchayats can educate residents about household water purification methods, such as boiling, using chlorine tablets, or installing point-of-use water filters. They can also make these purification methods accessible and affordable to the community, especially in areas where water quality concerns persist.

13. How can Gram Panchayats raise awareness about the importance of water quality among villagers?

Gram Panchayats can conduct awareness campaigns, workshops, and community meetings to educate villagers about the significance of water quality and its impact on health. They can use various communication channels, including posters, leaflets, and social media, to disseminate information effectively.

14. How can community participation be encouraged in the operation and maintenance of single village water supply schemes?

Gram Panchayats can encourage community participation by involving local residents in decision-making processes, forming Water User Committees or Village Water and Sanitation Committees, conducting awareness campaigns on water management and hygiene practices, and seeking community feedback on service quality and satisfaction. This fosters a sense of ownership and responsibility among the community members.

15. What are water user charges?

Water user charges are fees levied on water users for the operation and maintenance (O&M) of water supply systems. These charges are collected to cover the costs associated with ensuring the proper functioning and sustainability of the water supply infrastructure.

16. Why is there a need to levy and collect water user charges?

Levying and collecting water user charges is essential for several reasons. Firstly, it helps generate revenue to cover the costs of operating and maintaining the water supply system. Secondly, it ensures a sustainable funding source for ongoing O&M activities. Lastly, it promotes the principle of user-pays, where the beneficiaries of the service contribute to its maintenance.

17. How are water user charges determined?

The determination of water user charges varies based on factors such as the cost of O&M activities, infrastructure maintenance requirements, the number of users, and the level of

service provided. Typically, water user charges are calculated based on factors like consumption volume, connection size, or a fixed monthly fee.

18. How can water user charges benefit the community?

Water user charges benefit the community in several ways. Firstly, they ensure the financial sustainability of the water supply system, enabling ongoing O&M activities and infrastructure upgrades. Secondly, they promote responsible water usage and conservation by assigning a value to the resource. Lastly, they contribute to equitable access to clean and reliable water by ensuring a fair distribution of costs among users.

19. How are low-income households or marginalized communities considered in the levying of water user charges?

Authorities responsible for water user charges often adopt measures to consider the affordability of water services for low-income households or marginalized communities. This can include implementing progressive tariff structures, providing subsidies or exemptions, or implementing cross-subsidization mechanisms to ensure access to water without imposing excessive financial burdens.

20. How can Gram Panchayats ensure the efficient collection and utilization of water user charges?

Gram Panchayats can establish robust billing and collection systems, including metering and billing infrastructure. They should maintain proper records, conduct regular audits, and ensure transparency in the utilization of funds. Additionally, they can engage with the community through awareness programs to explain the purpose and benefits of water user charges.

Session 5: Professionalization of water supply services in Gram Panchayats

Session Brief: The professionalization of water supply services in Gram Panchayats refers to the process of improving the management and delivery of water supply services at the grassroots level by involving trained professionals. It aims to enhance the efficiency, sustainability, and quality of water supply operations in rural areas.

1. Why is professionalization necessary for water supply services in Gram Panchayats?

Professionalization is necessary to address the challenges faced in water supply management at the Gram Panchayat level. It brings in specialized skills, technical knowledge, and managerial expertise required for effective planning, implementation, operation, and maintenance of water supply systems. It helps ensure reliable and safe water supply to rural communities.

2. Who is responsible for the professionalization of water supply services in GPs?

The responsibility for the professionalization of water supply services in Gram Panchayats lies with various stakeholders. This includes the Gram Panchayat itself, state governments, rural development agencies, and relevant water supply authorities. These entities collaborate to develop policies, provide training, and implement professionalization initiatives.

3. **What are the benefits of professionalization in water supply services**?

Professionalization brings several benefits, such as improved technical expertise, better planning and management, enhanced service quality, increased operational efficiency, reduced water losses, and better financial and asset management. It also enables sustainable operation and maintenance of water supply systems, leading to improved health and well-being of rural communities.

4. What steps are involved in the professionalization of water supply services in Gram Panchayats?

The professionalization process typically includes several steps, such as:

a) Assessing the existing water supply infrastructure and management practices.
b) Identifying capacity gaps and training needs.
c) Designing and implementing training programs for relevant personnel.
d) Developing standard operating procedures and guidelines for water supply operations.
e) Establishing monitoring and evaluation mechanisms to ensure performance and accountability.
f) Encouraging community participation and creating awareness about the importance of professionalized water supply services.

5. What kind of training is provided for the professionalization of water supply services?
The training provided for the professionalization of water supply services covers various aspects. It includes technical training on water supply system design, construction, operation, and maintenance. Additionally, training on financial management, customer relations, water quality testing, and community engagement may also be provided.

6. How does professionalization affect the affordability of water supply services?
Professionalization aims to improve the efficiency and sustainability of water supply services, which can lead to better cost management. By minimizing water losses, optimizing operations, and implementing effective billing and collection systems, professionalized services can help make water supply more affordable for rural communities in Gram Panchayats.

7. How can Gram Panchayats implement the professionalization of water supply services?
Gram Panchayats can implement the professionalization of water supply services by collaborating with relevant government agencies, seeking technical support from experts, and accessing training programs. They can also allocate resources and develop institutional mechanisms to support professionalization initiatives. Engaging with local communities and building partnerships with NGOs and private sector entities can also be beneficial.

8. What is contract management of operation and maintenance (O&M) of water supply schemes in Gram Panchayats?
Contract management of O&M of water supply schemes in Gram Panchayats refers to the process of overseeing and administering contracts between the Gram Panchayat and external service providers responsible for operating and maintaining water supply systems. It involves activities such as contract negotiation, performance monitoring, and ensuring adherence to agreed-upon terms and conditions.

9. Why is contract management important for O&M of water supply schemes in GP?
Contract management is important because it helps ensure the efficient and effective delivery of water supply services in Gram Panchayats. It provides a structured approach to managing service providers, promotes accountability, and helps maintain the sustainability and reliability of water supply systems. Proper contract management can lead to improved service quality and customer satisfaction.

10. What are the key components of contract management for O&M of water supply schemes?
The key components of contract management for O&M of water supply schemes include:
Contract preparation: Defining the scope of work, specifications, terms, and conditions of the contract.

a) **Procurement and selection**: Identifying and selecting suitable service providers through a transparent procurement process.
b) **Contract negotiation**: Establishing mutually agreed-upon terms, service levels, performance indicators, and payment mechanisms.

c) **Performance monitoring**: Regularly monitoring the service provider's performance, compliance with contractual obligations, and service quality.
d) **Issue resolution**: Addressing any disputes, conflicts, or non-compliance with the contract through appropriate mechanisms.
e) **Contract renewal or termination**: Assessing the service provider's performance and deciding whether to renew or terminate the contract based on predefined criteria.

11. Who is responsible for contract management of O&M of water supply schemes in GP?
The responsibility for contract management of O&M of water supply schemes primarily lies with the Gram Panchayat. They are responsible for overseeing the contract, monitoring the service provider's performance, and ensuring compliance with the contractual terms. Additionally, relevant government departments and agencies may provide guidance and support in contract management.

12. How can Gram Panchayats ensure the selection of suitable service providers for O&M contracts?
Gram Panchayats can ensure the selection of suitable service providers through a transparent and competitive procurement process. This may involve issuing a request for proposal (RFP), conducting pre-qualification assessments, evaluating technical and financial proposals, and selecting the most qualified and competitive bidder based on predefined criteria.

13. What should be included in the O&M contract for water supply schemes in Gram Panchayats?
The O&M contract should include essential elements such as the scope of work, duration of the contract, service levels, performance indicators, payment terms, dispute resolution mechanisms, termination clauses, and obligations of both the Gram Panchayat and the service provider. It is important to clearly define the responsibilities and expectations of each party to ensure a smooth and effective O&M arrangement.

14. How can the performance of the service provider be monitored during the contract period?
The performance of the service provider can be monitored through various mechanisms, including regular site visits, periodic inspections, review of reports and records, performance indicators, and customer feedback. Gram Panchayats can also establish a monitoring committee or engage third-party agencies to assess the service provider's compliance with contractual obligations and service quality standards.

Session 6:

Rain Water Harvesting, Water Recycling & Water efficient Agricultural Practices

Session Brief: Rainwater harvesting helps capture and store rainwater for later use, reducing dependency on freshwater sources. It helps mitigate water scarcity and ensures a sustainable water supply, particularly in areas with limited access to surface or groundwater. Water recycling, also known as water reclamation or reuse, involves treating wastewater to make it suitable for various non-potable applications. This practice helps conserve freshwater supplies by utilizing treated wastewater for activities such as irrigation, industrial processes, and toilet flushing. Water-efficient agricultural practices optimize water use in crop production, ensuring a sustainable and reliable food supply. By minimizing water wastage and adopting efficient irrigation techniques, farmers can maintain crop health and productivity while reducing the strain on water resource.

1. **What are the benefits of water recycling in villages?**

Water recycling helps conserve water resources by reusing treated wastewater for non-potable purposes, reduces the strain on freshwater sources, minimizes the discharge of wastewater into the environment, and promotes sustainable water management practices. Water recycling offers various benefits, including reducing water scarcity, decreasing reliance on external water sources, lowering water bills for communities, minimizing pollution of water bodies, enhancing agricultural productivity through irrigation, and promoting a circular economy approach to water management.

2. How does water recycling work in villages?

Water recycling in villages typically involves the collection and treatment of wastewater from domestic, industrial, or agricultural sources. After treatment, the recycled water is used for purposes such as irrigation, landscaping, industrial processes, or groundwater recharge.

3. What are the common methods of water recycling in villages?

Common methods of water recycling in villages include wastewater treatment plants that employ processes like primary, secondary, and tertiary treatment, filtration, disinfection, and advanced treatment technologies. Other methods may include natural treatment systems like constructed wetlands or decentralized treatment systems at the household or community level.

4. Is recycled water safe for various uses in villages?

Recycled water can be made safe for specific uses through proper treatment processes. Depending on the level of treatment, recycled water can be suitable for agricultural irrigation, landscaping, industrial processes, or toilet flushing. However, it is important to adhere to appropriate guidelines and regulations to ensure the safe use of recycled water.

5. What are the challenges in implementing water recycling in villages?

Challenges in implementing water recycling in villages may include limited infrastructure and funding, lack of awareness and acceptance among the community, the need for technical expertise and skilled operators, ensuring proper treatment processes and quality control, and addressing potential health and environmental concerns.

6. How can Gram Panchayats promote water recycling in villages?
Gram Panchayats can play a crucial role in promoting water recycling by raising awareness about its benefits, providing technical support for setting up treatment infrastructure, facilitating funding or grant opportunities, collaborating with relevant agencies, and enforcing regulations and guidelines related to water recycling.

7. Can individual households or communities adopt water recycling practices?
Yes, individual households or communities can adopt water recycling practices at a smaller scale. They can implement systems like greywater recycling, rainwater harvesting, or decentralized treatment systems to reuse water for purposes like irrigation or toilet flushing. These initiatives can contribute to overall water conservation efforts in the village.

8. How can Gram Panchayats overcome community resistance or concerns regarding water recycling?
Gram Panchayats can address community resistance or concerns through effective communication, education, and awareness programs. They can provide information about the treatment processes involved, the safety of recycled water for specific uses, and the benefits of water recycling in terms of water availability and environmental sustainability. Engaging the community in the decision-making process and addressing specific concerns can also help overcome resistance.

9. What are some successful examples of water recycling initiatives in villages?

There are numerous successful examples of water recycling initiatives in villages. These include the implementation of decentralized wastewater treatment systems, community-level greywater recycling systems, and the use of treated wastewater for irrigation in agriculture. These initiatives have resulted in improved water availability, reduced freshwater demand, and enhanced environmental sustainability in several villages.

10. Why is rainwater harvesting structure necessary?
Rainwater harvesting structures are necessary to capture and store rainwater for later use. They help address water scarcity, reduce dependence on external water sources, recharge groundwater, mitigate flooding, and promote sustainable water management practices.

11. What are the benefits of rainwater harvesting structures?
Rainwater harvesting structures offer several benefits. They provide a supplementary water source for various purposes such as irrigation, household use, and livestock watering. They help reduce strain on freshwater sources, decrease reliance on costly water supply systems, mitigate storm water runoff, and contribute to groundwater recharge, thus enhancing water availability and resilience in villages.

12. How do rainwater harvesting structures work?

Rainwater harvesting structures capture rainwater from rooftops, open spaces, or catchment areas, and channel it into storage systems such as tanks, reservoirs, or underground storage. The collected rainwater can then be used for different purposes after appropriate treatment or directly for non-potable uses.

13. What are the common types of rainwater harvesting structures used in villages?
Common types of rainwater harvesting structures in villages include rooftop rainwater harvesting systems, surface runoff collection systems, check dams, percolation tanks, recharge wells, and farm ponds. The choice of structure depends on factors such as available space, rainfall patterns, and intended uses.

14. Is rainwater suitable for drinking after harvesting?
Rainwater, when harvested and stored properly, can be suitable for drinking. However, it is recommended to treat rainwater before consumption to ensure its quality and safety. Treatment methods may include filtration, disinfection, or using advanced purification systems to remove contaminants and pathogens.

15. How can Gram Panchayats promote the implementation of RWH structures?
Gram Panchayats can play a vital role in promoting rainwater harvesting structures by creating awareness among the community about their benefits, providing technical guidance and support, offering subsidies or incentives, and incorporating rainwater harvesting guidelines in building codes and regulations. They can also organize workshops or training sessions to educate villagers on the construction and maintenance of these structures.

16. Are rainwater harvesting structures cost-effective?
Rainwater harvesting structures can be cost-effective in the long run. While there may be initial investment costs associated with construction and maintenance, rainwater harvesting can significantly reduce water bills, decrease reliance on expensive water supply systems, and mitigate the need for extensive infrastructure development. Over time, the cost savings can outweigh the initial investment.

17. Can individual households implement rainwater harvesting structures?
Yes, individual households can implement rainwater harvesting structures on their properties. They can set up rooftop rainwater harvesting systems or small-scale storage tanks to collect rainwater for household use or irrigation. These individual efforts can collectively contribute to addressing water scarcity in the village.

18. Does rainwater harvesting have any environmental benefits?
Yes, rainwater harvesting has several environmental benefits. It helps reduce soil erosion and prevents surface runoff, which can carry pollutants into water bodies. By recharging groundwater, rainwater harvesting supports ecosystem health, maintains streamflow, and helps combat drought conditions. It also reduces the need for large-scale dam construction, which can have adverse environmental impacts.

19. Can rainwater harvesting structures be integrated with existing water supply systems?

Yes, rainwater harvesting structures can be integrated with existing water supply systems. The harvested rainwater can be used alongside other water sources, reducing the burden on traditional water supply systems during non-potable uses such as gardening, flushing toilets, or washing vehicles. Integration allows for optimal water management and resource utilization.

20. What is greywater management?

Greywater management refers to the collection, treatment, and reuse of wastewater generated from household activities such as bathing, laundry, and dishwashing. It involves implementing systems and practices to recycle and safely utilize greywater for non-potable purposes, reducing the strain on freshwater resources.

21. Why is greywater management important in villages?

Greywater management is important in villages for several reasons. It helps conserve water by reusing it for irrigation, toilet flushing, and other non-potable uses. In areas where freshwater is scarce or unreliable, greywater management provides an additional source of water, reducing dependency on external supplies. It also minimizes the pollution of water bodies by diverting and treating wastewater that would otherwise be discharged untreated.

22. What are the benefits of greywater management in villages?

Greywater management offers various benefits in villages. It helps reduce water demand, conserve freshwater resources, lower water bills, and promote sustainable water use practices. It enhances agricultural productivity by providing water for irrigation, supports landscaping and greening initiatives, reduces the burden on septic systems or sewage treatment plants, and contributes to overall water and environmental sustainability in the village.

23. How can greywater be safely managed and reused in villages?

Greywater can be safely managed and reused in villages through appropriate treatment and reuse systems. This typically involves separating greywater from blackwater (toilet waste), using filtration and disinfection methods to remove contaminants and pathogens, and directing the treated greywater to storage tanks or distribution systems for reuse in irrigation, toilet flushing, or other non-potable applications.

24. Can individual households practice greywater management in villages?

Yes, individual households can practice greywater management in villages. They can implement simple systems such as greywater diversion to separate greywater from blackwater, construct underground or surface infiltration systems for greywater percolation, and use filters or treatment devices to improve greywater quality for reuse. Individual efforts collectively contribute to overall water conservation and sustainability in the village.

25. How can Gram Panchayats promote greywater management in villages?

Gram Panchayats can play a vital role in promoting greywater management in villages. They can raise awareness about the benefits of greywater reuse, provide technical guidance and support to the community, facilitate training programs on greywater treatment and reuse techniques, and incorporate greywater management guidelines in local building codes and regulations. Financial incentives or subsidies can also be provided to encourage adoption of greywater management practices.

26. Can greywater management help address water pollution in villages?

Yes, greywater management can help address water pollution in villages. By treating and reusing greywater, the amount of untreated wastewater discharged into water bodies is significantly reduced. This reduces the pollution load on rivers, lakes, and groundwater, preserving water quality and protecting the environment from the harmful effects of untreated wastewater discharge.

27. What is groundwater recharge, and how can Gram Panchayats facilitate it?

Groundwater recharge involves replenishing underground water sources. Gram Panchayats can facilitate groundwater recharge by constructing recharge wells, promoting the use of percolation tanks and recharge pits, and regulating the extraction of groundwater to maintain a sustainable water balance.

28. What role do check dams play in ensuring water sufficiency?

Check dams are small structures built across rivers or streams to impound water during the monsoon season. These dams help in recharging groundwater, preventing soil erosion, and creating small reservoirs for irrigation purposes. Gram Panchayats can construct check dams strategically to maximize their benefits.

29. Why are water-efficient agricultural practices important?

Water-efficient agricultural practices are important for several reasons:

a) **Water scarcity**: With the increasing demand for water and the effects of climate change, water scarcity has become a significant concern. Implementing water-efficient practices helps conserve water resources for sustainable agriculture.
b) **Environmental impact**: Excessive water use in agriculture can deplete water sources, harm ecosystems, and contribute to water pollution. Water-efficient practices reduce environmental impacts and promote ecological balance.
c) **Economic benefits:** By optimizing water use, farmers can reduce their operational costs, increase crop yields, and enhance profitability in the long run.

30. What are some examples of water-efficient agricultural practices?

Some examples of water-efficient agricultural practices include:

a) **Drip irrigation**: A method that delivers water directly to the plant roots, minimizing evaporation and runoff.

b) **Mulching**: Applying organic or synthetic materials to the soil surface to reduce evaporation, conserve soil moisture, and suppress weed growth.
c) **Crop rotation and diversification**: Alternating different crops in a sequence or growing a variety of crops on the same field to enhance water-use efficiency and reduce water-related diseases.
d) **Soil moisture monitoring**: Using sensors and technology to measure soil moisture levels and optimize irrigation scheduling.
e) **Conservation tillage**: Reducing or eliminating tillage to improve water infiltration, reduce evaporation, and enhance soil water retention.

31. How can farmers determine the most suitable water-efficient practices for their crops?

Determining suitable water-efficient practices depends on factors such as crop type, climate, soil conditions, and available resources. Farmers can consult agricultural experts, extension services, or local agricultural organizations for guidance. Additionally, conducting research, attending workshops or seminars, and learning from experienced farmers in the region can provide valuable insights into effective water-efficient practices.

32. What are the potential challenges associated with water-efficient agricultural practices?

While water-efficient agricultural practices offer numerous benefits, there can be challenges and limitations, including:

a) **Initial investment**: Implementing water-efficient technologies or infrastructure may require a certain level of financial investment, which can be a barrier for some farmers.
b) **Technical knowledge and training**: Proper implementation of water-efficient practices often requires knowledge and training. Farmers may need access to educational resources or expert guidance to ensure effective adoption.
c) **Regional suitability:** Some water-efficient practices may be more effective in certain climates or soil types. Farmers should consider local conditions and adapt practices accordingly.
d) **Behavioural change**: Shifting to water-efficient practices may require farmers to change their traditional approaches. Overcoming resistance to change and ensuring long-term commitment can be challenging.

33. How can farmers measure the impact of water-efficient agricultural practices on their farms?

Farmers can measure the impact of water-efficient agricultural practices by tracking and comparing key metrics before and after implementing the practices. This can include monitoring water consumption, crop yield, soil moisture levels, and irrigation efficiency. Regular data collection and analysis can help farmers assess the effectiveness of the practices and make necessary adjustments for further improvement. Consulting with agricultural experts

or utilizing advanced technologies for data collection and analysis can provide more accurate insights.

34. What is Mission Amrit Sarovar?

Mission Amrit Sarovar was launched by Go on 24th April 2022. Amrit Sarovars will play an important role in increasing the availability of water, both on surface and under-ground The Amrit Sarovar will be constructed on at least 1 acre of land with a water holding capacity of about 10,000 cubic meters. If the district is unable to create as many new Amrit Sarovars, then district may take up rejuvenation of the existing structures for restoring their ecological and productive utility. At least 75 Amrit Sarovars in every district, totaling about 50,000 Amrit Sarovar will be constructed or rejuvenated in the country. For the effective implementation & coordination of Mission at the ground level, Committees will be formed at the State under the chairmanship of Chief Secretary and district level under the chairmanship of DM /DC respectively, with all the stakeholders involved. This Mission would be run with a “Whole of Government” approach in all its aspects, accordingly a wide swath of Ministries/Departments and Organizations would work together to accomplish the goals.

Session 7: Role of Gram Panchayats in making villages with water sufficient

Session Brief: Water is essential for life and every citizen has a right to safe and adequate drinking water. As per the 73rd Amendment of the Constitution, providing drinking water to all rural households is included in the 11th Schedule. Gram Panchayats have the authority to plan, implement, and monitor water management initiatives within their jurisdiction. They can allocate resources, enforce regulations, and coordinate with relevant agencies to address water-related challenges in villages.

1. What is the role of Gram Panchayats in making villages water sufficient?

Gram Panchayats play a crucial role in ensuring water sufficiency in villages. They are responsible for implementing various water conservation and management strategies to meet the water needs of the community.

2. What are some strategies Gram Panchayats can adopt to make villages water sufficient?

Gram Panchayats can adopt several strategies, including rainwater harvesting, groundwater recharge, watershed management, promoting water conservation practices, constructing check dams, and implementing water recycling and reuse systems.

3. How can Gram Panchayats promote water conservation practices in villages?

Gram Panchayats can create awareness campaigns to educate villagers about the importance of water conservation. They can encourage practices like water-efficient agriculture, promoting the use of drip irrigation, repairing leakages in water supply systems, and implementing measures to reduce wastage in households and public spaces.

4. How can Gram Panchayats promote awareness about water conservation?

Gram Panchayats can organize awareness campaigns, workshops, and community meetings to educate villagers about the importance of water conservation. They can disseminate information about sustainable water practices, water-saving techniques, and the need to preserve local water resources.

5. Can Gram Panchayats implement infrastructure projects for water management?

Yes, Gram Panchayats can undertake infrastructure projects related to water management. They can construct rainwater harvesting structures, recharge wells, check dams, and other facilities that contribute to water conservation and availability in villages.

6. How can Gram Panchayats encourage rainwater harvesting in villages?

Gram Panchayats can promote rainwater harvesting by raising awareness, providing technical guidance, and offering incentives to individuals and communities for implementing rainwater harvesting systems. They can also collaborate with local NGOs or government agencies to support the installation of such structures.

7. Can Gram Panchayats regulate groundwater extraction?

Gram Panchayats have the authority to regulate groundwater extraction within their jurisdiction. They can issue permits, set limits on extraction, and promote sustainable use of groundwater resources to prevent overexploitation and depletion.

8. How can Gram Panchayats promote water recycling and reuse in villages?
Gram Panchayats can encourage the establishment of wastewater treatment plants to recycle and reuse water for non-potable purposes like irrigation, gardening, and sanitation. They can facilitate the adoption of water recycling systems and promote the use of treated wastewater as a valuable resource.

9. What steps can Gram Panchayats take to address water pollution in villages?
Gram Panchayats can enforce regulations related to wastewater disposal, ensure proper sanitation practices, and encourage the use of eco-friendly agricultural practices to minimize water pollution. They can collaborate with local authorities to monitor and mitigate pollution sources.

10. How can Gram Panchayats involve the community in water management initiatives?
Gram Panchayats can encourage community participation by forming water committees or task forces that include local residents. They can seek their input, involve them in decision-making processes, and promote collective responsibility for water management through active engagement and collaboration.

11. How can Gram Panchayats ensure the long-term sustainability of water management efforts?
Gram Panchayats can develop long-term plans and policies for water management, monitor the effectiveness of implemented measures, and adapt strategies as per changing needs. They can also encourage capacity building and training programs for local communities to sustain and manage water resources effectively.

12. What is the role of Gram Panchayats in the operation and maintenance of water supply systems in villages?
Gram Panchayats are responsible for the operation and maintenance of water supply systems in villages. They oversee the management, upkeep, and efficient functioning of the infrastructure that provides clean and safe drinking water to the community

13. How can Gram Panchayats ensure the availability of trained personnel for operating the water supply system?
Gram Panchayats can recruit and employ trained personnel with expertise in water supply system management. They can provide training programs or workshops to enhance the skills of existing staff members or collaborate with external agencies to ensure the availability of trained operators.

14. How can Gram Panchayats monitor the quality of water supplied to the villages?
Gram Panchayats can establish a regular water quality testing mechanism by collecting samples from various points in the distribution network. These samples can be sent to accredited laboratories for testing to ensure compliance with quality standards and to identify and address any contamination issues.

15. How can Gram Panchayats address water supply disruptions and leaks in the system?
Gram Panchayats should establish a mechanism to promptly address water supply disruptions and leaks. This can include a dedicated maintenance team that conducts regular inspections, repairs any damages, and responds swiftly to reports of leaks or interruptions in the water supply.

16. How can GP involve the community in the operation and maintenance of the water supply system?
Gram Panchayats can encourage community participation by forming water user committees or involving local residents in decision-making processes. They can also organize awareness campaigns to educate the community about the importance of conserving water, promptly reporting issues, and cooperating with maintenance activities.

17. How can GP ensure the financial sustainability of operating and maintaining the water supply system?
Gram Panchayats can explore various financial models, such as collecting user fees or water tariffs, to generate revenue for the operation and maintenance of the water supply system. They can also seek grants, subsidies, or external funding sources to support ongoing maintenance activities.

18. What should Gram Panchayats do to ensure the long-term sustainability of the water supply system?
Gram Panchayats should develop a comprehensive maintenance plan, including periodic inspections, preventive maintenance activities, and scheduled repairs or replacements of infrastructure components. They should also regularly review and update their plans based on evolving needs, technological advancements, and changing water demand patterns.

19. How can Gram Panchayats address customer complaints and feedback regarding the water supply system?

Gram Panchayats should establish a dedicated mechanism for addressing customer complaints and feedback. This can involve setting up a helpline, establishing grievance redressal mechanisms, and ensuring timely responses to reported issues to maintain transparency and accountability in the water supply system.

Session 8: Planning for Water Sufficient Village

Session Brief: Planning for drinking water supply in the village is important to ensure that residents have access to a reliable and safe water source. It helps identify the water requirements of the village, assess available water sources, design appropriate infrastructure, and allocate resources effectively to meet the water needs of the community.

1. What is Village Action Plan (VAP)?

Every village has to prepare a 5–year Village Action Plan (VAP) co-terminus with the 15 Finance Commission period and dovetailing fund from other flagship schemes to prepare a Village Action Plan under, the guidelines and the format prescribed under JJM can be followed:

2. What are the key steps involved in planning for drinking water supply in the village?

The key steps involved in planning for drinking water supply in the village include:

a) **Assessing water demand**: Determining the water requirements of the village population, including domestic, institutional, and commercial needs.
b) **Identifying water sources**: Identifying potential water sources such as groundwater, surface water bodies, or rainwater harvesting systems available in the village.
c) **Conducting feasibility studies**: Assessing the feasibility and sustainability of different water supply options based on factors like availability, quality, and cost.
d) **Designing infrastructure**: Developing a detailed plan for water supply infrastructure, including source development, treatment facilities, storage tanks, pipelines, and distribution networks.
e) **Allocating resources**: Estimating the financial resources required and identifying potential funding sources for implementing the water supply plan.
f) **Engaging stakeholders**: Involving the village community, local leaders, and relevant government departments in the planning process to ensure inclusiveness and community ownership.
g) **Monitoring and evaluation**: Establishing mechanisms to monitor the implementation progress, evaluate the effectiveness of the plan, and make necessary adjustments if needed.

3. What is the Village Health, Water, and Sanitation Committee or Pani Samiti?

The Village Health, Water, and Sanitation Committee, commonly known as Pani Samiti, is a community-based committee formed at the village level to address health, water supply, and sanitation-related issues. It plays a crucial role in promoting and ensuring access to clean water, hygiene practices, and sanitation facilities in the village.

4. What are the responsibilities of the Village Health, Water, and Sanitation Committee?

The responsibilities of the Village Health, Water, and Sanitation Committee include:

a) Facilitating the planning and implementation of water supply and sanitation projects in the village.

b) Promoting awareness about hygiene practices, safe water storage, and proper sanitation practices.
c) Monitoring the quality of water sources and ensuring their regular testing.
d) Overseeing the maintenance and operation of water supply and sanitation infrastructure.
e) Encouraging community participation and mobilizing resources for water and sanitation initiatives.
f) Collaborating with relevant government departments, NGO

5. How can community participation be encouraged in planning and water management initiatives?

Community participation can be encouraged by:

a) Involving the community in decision-making processes related to water planning and management.
b) Conducting regular community meetings, workshops, or consultations to gather input and feedback from residents.
c) Establishing Water User Committees or Village Water and Sanitation Committees to actively engage community members in water-related initiatives.
d) Encouraging community ownership through the delegation of responsibilities and active involvement in the implementation and monitoring of water management projects.
e) Conducting awareness campaigns to educate and empower community members about water-related issues and the importance.

6. What is water management, and why is it important for making the village water-sufficient?

Water management involves the sustainable and efficient use of water resources to meet the needs of the village while ensuring its long-term availability. It includes practices like water conservation, rainwater harvesting, efficient irrigation methods, and wastewater management. Water management is important for making the village water-sufficient by minimizing water wastage, promoting water reuse, and protecting water sources from depletion or contamination.

7. What is Village Water Security Plan?

The Village Water Security Plan ensure optimum utilization of available water to meet the needs of various users. It will have information about the existing water supply situation, what improvements in the existing system or new system users need, want and can afford, and how the proposed improvements or new infrastructure will be funded, implemented and managed to ensure that drinking water is available at all times in the village for all households. In order to achieve this, the GP/VWSC must plan accordingly and implement appropriate mitigation measures, such as rooftop rainwater harvesting, groundwater recharge, restoration of traditional storage tanks, and conjunctive use of surface water and groundwater.

8. What are the main parts of a village security plan?

To ensure sustainable supply of drinking water, a village water security plan should include the following

a) Village water source sustainability plan
b) Village water safety plan
c) Operating plan; and
d) Service implementing plan.

After completion of surveys and compilation of data, a Gram Sabha meeting is called in which all community members, GP representatives, GPWSC/VWSC members, all facilitators and technical resource persons participate. Technical resource persons from the rural water supply department explain, in detail, all technical and financial aspects of various options in this meeting. After this, based on discussions, the GP may select the most suitable option. The technical facilitator should again explain technical and financial details of the option selected by the GP.

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