Inclusive rural water supply services in Maharashtra

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Introduction

Context:

- Over 70% of Maharashtra's rural population depends on groundwater for drinking.
- Palghar, a predominantly tribal district, faces water accessibility and quality issues.

Key Inclusion Challenges:

- Gender disparity: Women and girls walk long distances for water.
- Social inequities: Marginalized groups have less access to safe drinking water.

Palghar District of Maharashtra selected to improve water services making it inclusive

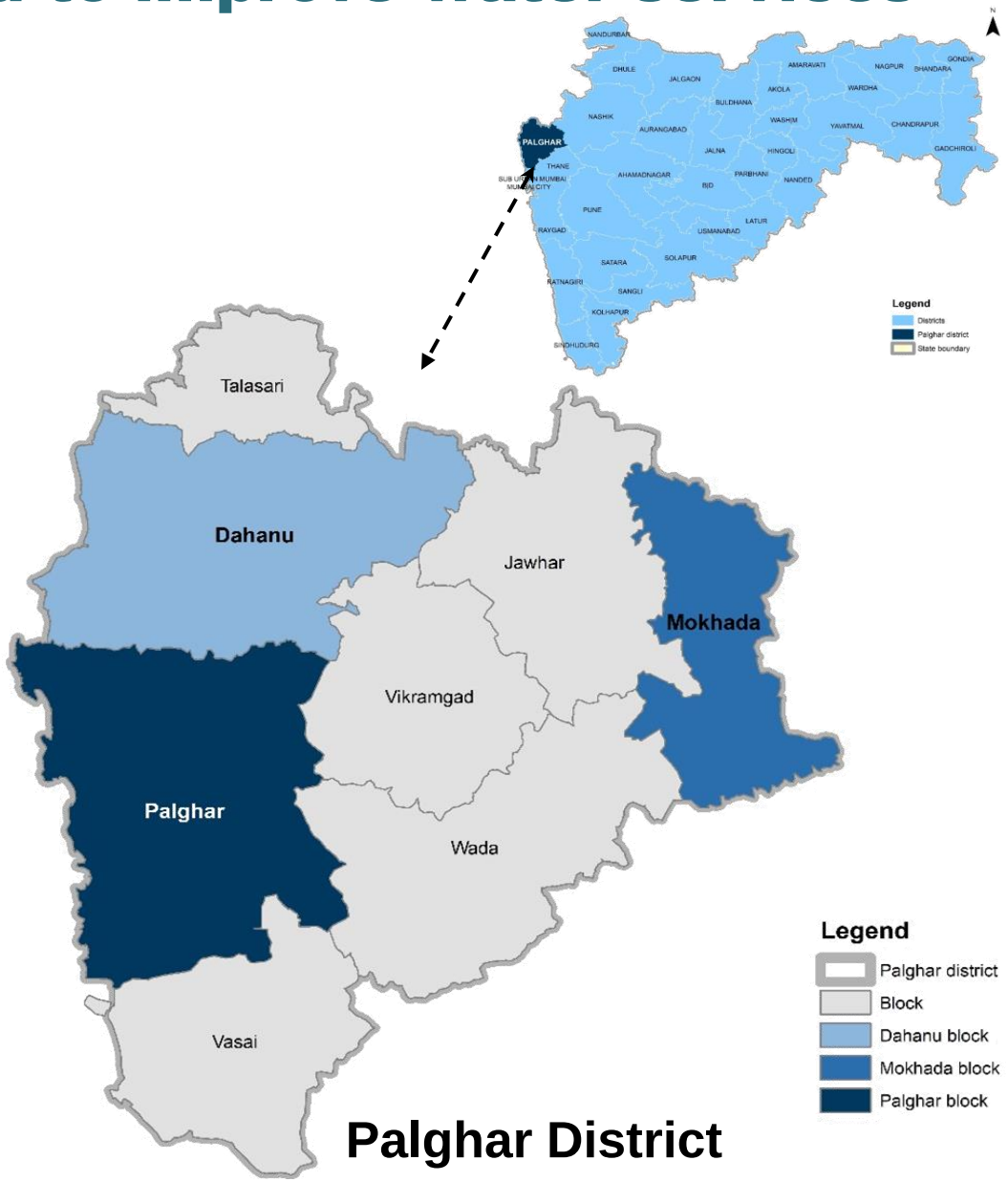
Location: Western Maharashtra, coastal district, tribal-dominated

The project will be carried out in 50 selected villages for the selected three blocks of Palghar district.

1. Palghar- block with high share of rural population
2. Dahanu- tribal dominated block in coastal area
3. Mokhada- tribal dominated block in hilly region

Water Challenges:

- Seasonal water scarcity despite high monsoonal rainfall.
- Limited piped water connections in rural villages.
- Dependence on tanker water during summer months.



Palghar District

Key challenges in rural water supply

Key Challenges in Rural Water Supply

- **Seasonal Water Scarcity**
  - High rainfall ≠ year-round availability
  - Over-reliance on tanker water during dry months.
- **Infrastructure Gaps**
  - JJM is providing infrastructure, but ensuring long-term O&M is crucial
  - Some previously built water systems have failed due to lack of O&M.
- **Climate Vulnerability**
  - High rainfall variability
  - Depleting groundwater levels
- **Equity Gaps**
  - Women & girls: Time-consuming water collection
  - SC/ST communities: Often get water last in shared sources

Based on assessment of existing situation prepared Village Action Plan for drinking water security

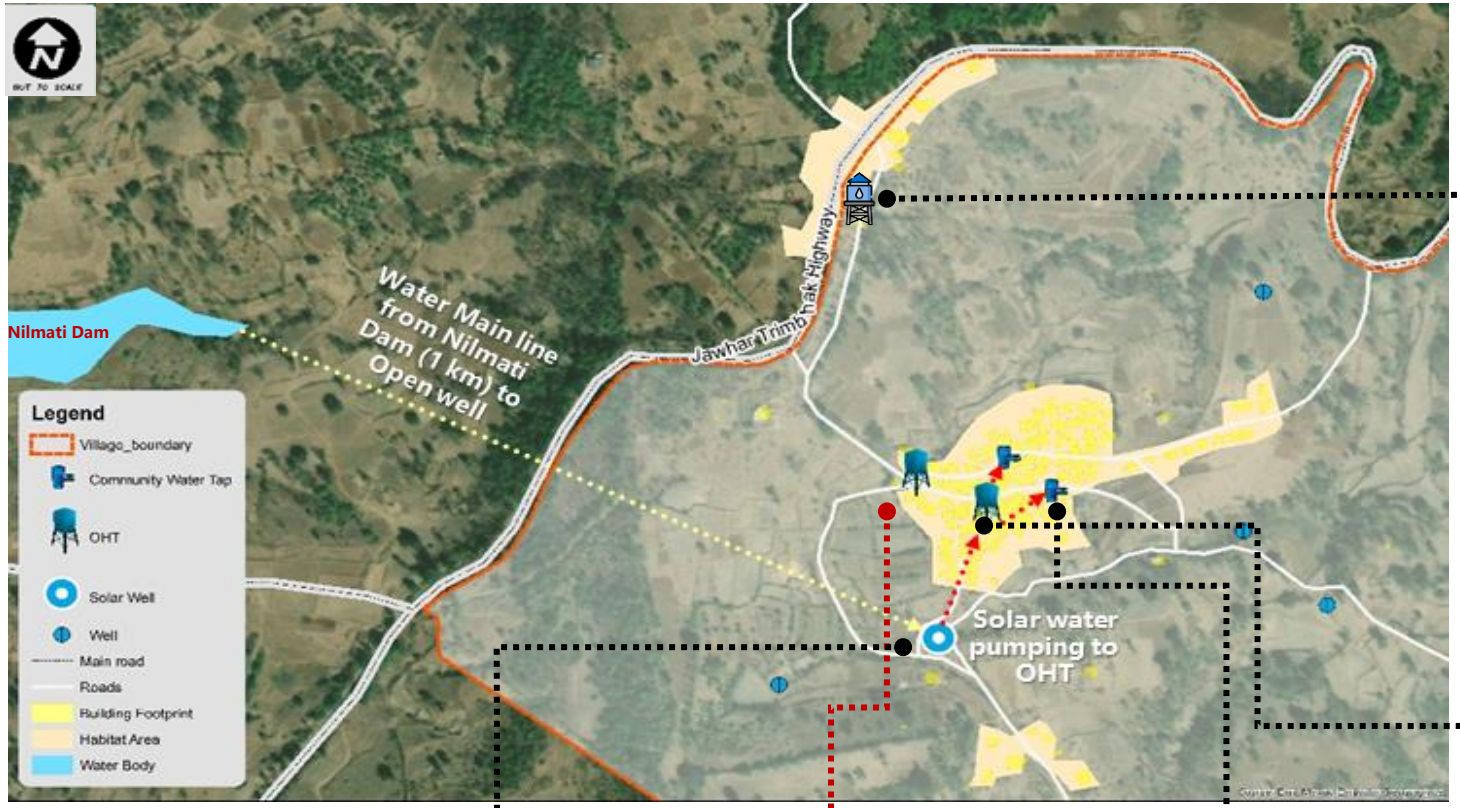
Assessment of complete water service chain- based on 3 village study

1	2	3	4	5
Surface water source (lakes/river) and groundwater (wells)	Water quality assessment and treatment systems	Water Distribution systems and ESR	Water supply reliability	User end water supply
• **Dependency** on **dug wells** for water supply • Water scarcity issues after February due to **lack of groundwater availability-** dependency on tanker supply- **Source sustainability major issue**	TCL dosing in open well- **No filtration unit** available Water **quality** surveillance through **Field testing kits**	Small overhead tanks with **solar pumping** available **Solar systems not working** during **monsoon- Villagers** to **walk** till source	• **Community tap connections** are present. • People **walk long distance** to fetch water. • **No household tap connections** observed in the village- planned under JJM • Some **storage infrastructures** built by development partners but are **not functional** due to **lack of O&M** • Few RWH measures seen in villages- mainly for water needs during monsoon	

Infrastructure under Jal Jeevan Mission in progress- Single village/Multi village schemes

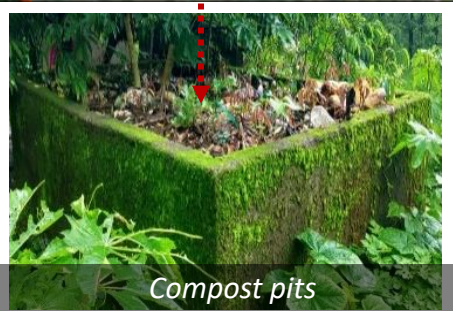
Resources and infrastructure mapping for preparing efficient asset management plan

- Habitation area mapping
- Mapping of assets of Gram Panchayat
- Infrastructure mapping across the water supply and solid waste management
- Road network mapping
- Enable spatial analysis and gap assessment for unserved area
- Resource mapping will help developing Village Action Plan as well as for developing asset management plan.




JJM ESR under construction


Source of water supply open well


Compost pits

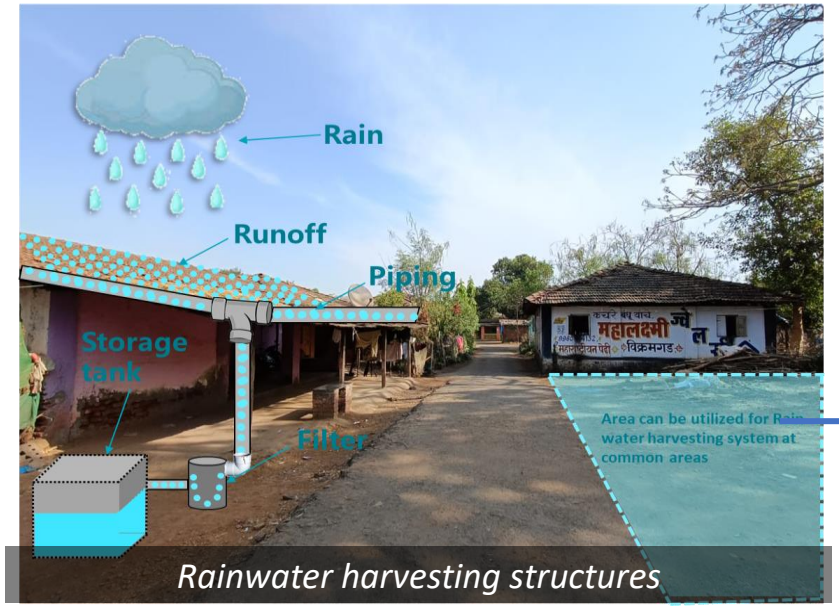

Community taps


Community ESR

RWH at community and institutional level, focusing on source sustainability at local level (1/3)

Rainwater harvesting at community and institution level

- Focus on enhancing rainwater storage capacity at local level
- Design of Simple, Low-Cost Prototype Models
- Alignment with Jal Jeevan Mission “Catch the rain, where it falls and when it falls”.
- Strengthen and refurbish existing infrastructure, new pilot projects for source sustainability.
- Capacity building and training for operation and maintenance of infrastructure.
- Convergence with PMAY and MGNREGA schemes for scaling up across all households.
- Explore access to credit to promote Rooftop RWH structure at household level in partnership with MAVIM



Rainwater harvesting structures

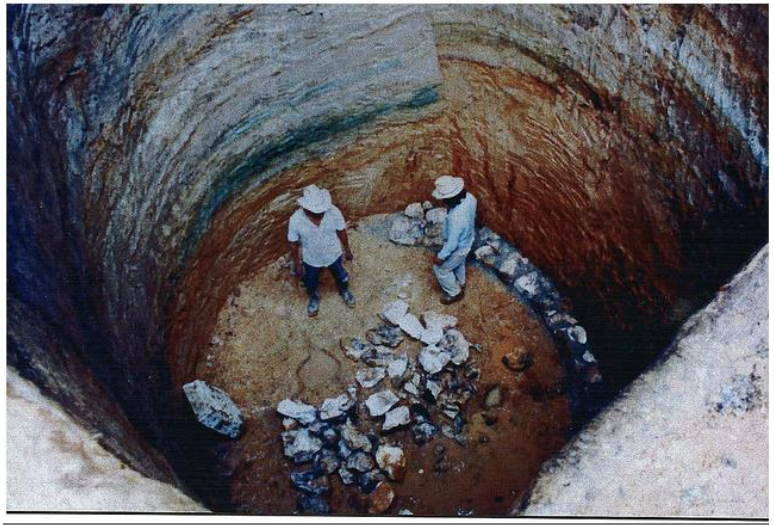
Alignment with JJM “Catch the rain”


Above ground rainwater storage structure


Underground rainwater storage structure

Revival of dysfunctional wells, demonstrating recharge structures as a part of water source security (2/3)

Revival of dysfunctional wells and demonstrate recharge structures



Refurbishment or deepening of existing dug wells

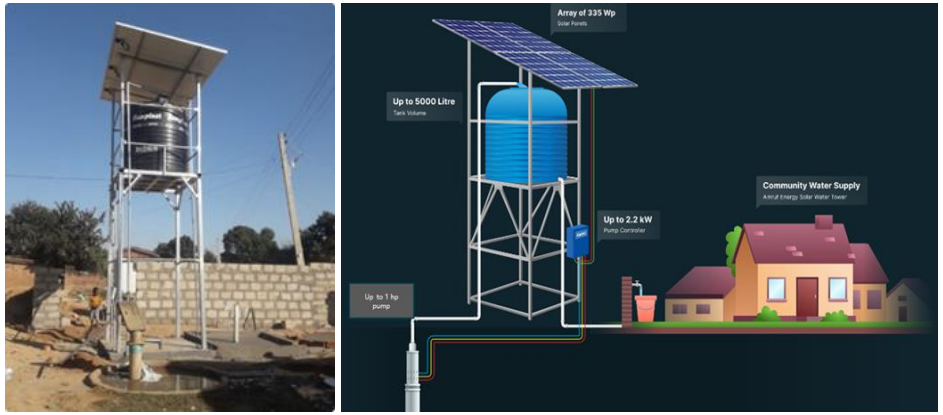
New storage wells and connecting with roof and surface rainwater

Ground water recharge structures based on local geology

- Identify potential locations for storage and recharge structures
- Demonstrate innovative solutions that can be replicated across villages in the district
- Scale up at district level in consultation with GSDA, Maharashtra

Service to vulnerable areas by ensuring water accessibility and improved drinking water quality (3/3)

Access to water for vulnerable areas and drinking water quality improvement

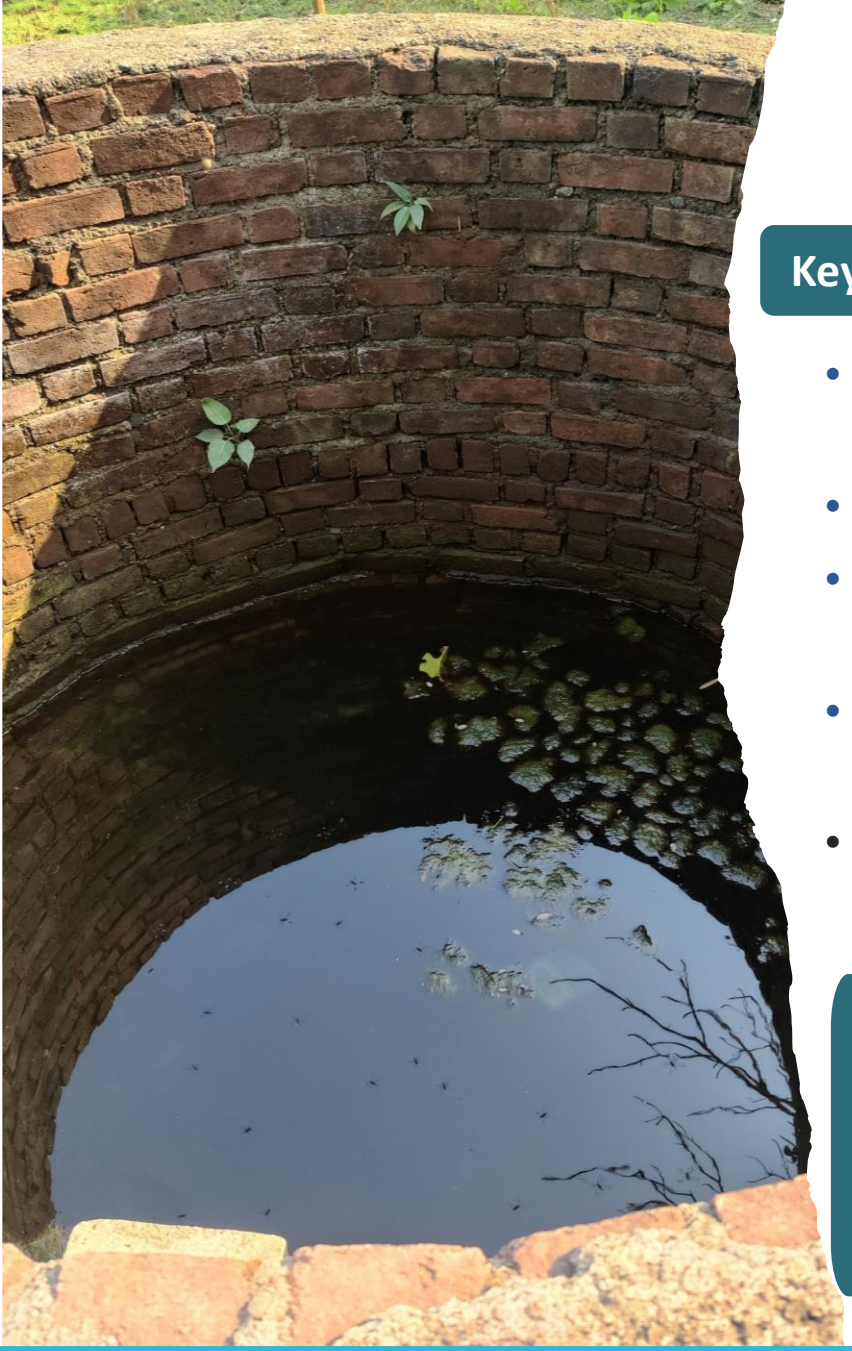


Mini piped water scheme based on solar energy

Water purification system

Digital Monitoring system and Drinking water quality testing kits

- Demonstration of water purification systems and digital monitoring systems to ensure drinking water quality.
- Capacity building and training of water user group for monitoring water quality through field testing kits.
- Capacity building and involvement of SHGs/water user group for the operation and maintenance of water supply infrastructure.



Climate Resilience in Rural Water Supply

Key Climate Adaptation Strategies:

- Rainwater harvesting structures in public buildings
- Groundwater recharge
- Rainwater harvesting systems in schools to store water for non-monsoon months.
- Underground storage tanks with filtration systems to ensure safe drinking water.
- Community-based monitoring to ensure **water quality and regular maintenance**.

Impact:

- Improved water availability during dry months
- Reduction in tanker water dependency

Involvement of SHG in assessment and awareness, IEC activities. Awareness drives in schools for water security

Community engagement in assessment and awareness activities

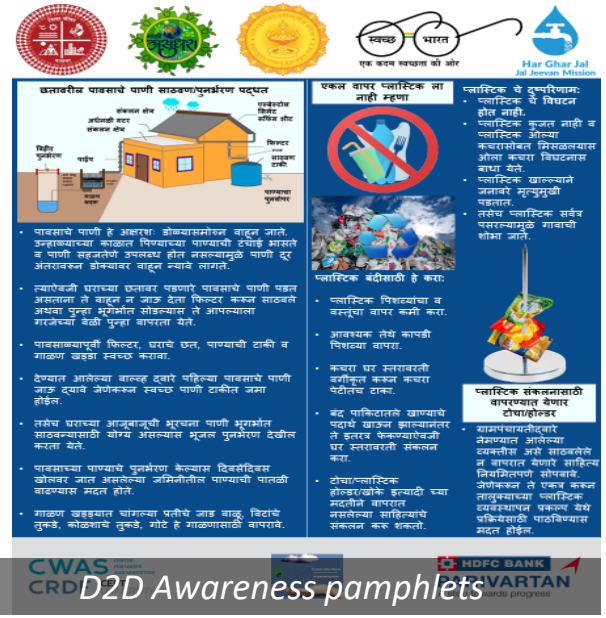
Empowering Women SHGs, Jalsurakshaks, water user groups:

- Utilize existing Jalsurakshaks by Govt. for water quality assessment.
- Capacity building and training of all the groups in using Field Test Kits (FTKs).
- D2D awareness for improving water security at HH level. Pamphlets prepared to spread awareness
- Further engaging them for regular O&M of water structures

Student engagement through drives:

- Simple activities and posters demonstrating about water conservation, RWH, SWM, reusable plastic, etc.
- Students also pledged to celebrate festivals in an eco friendly manner.
- Inclusion of such sessions in the ongoing timetable as an extra curricular activity.

Training SHG for water quality testing



D2D Awareness pamphlets

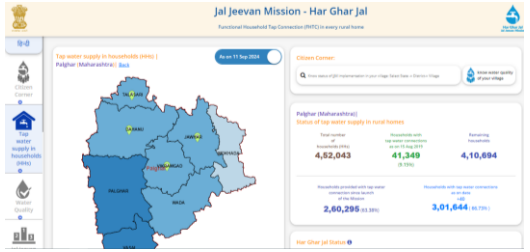
IEC campaigns across different schools focusing on water conservation

District & State-Level Support for Scaling Up

Action-research projects at local level with pilot demonstrations → Developing tools, training/resource materials, demonstrations → Institutionalizing lessons from local experiences at District/State level → Leveraging existing MoUs with State government for scaling up activities

- ✓ Support to Zilla Parishad office for achieving and improving Majhi Vasundhara activities related to water and SWM.
- ✓ Alignment with government programs and policies (SBM-G, JJM, MGNREGA, PMAY-G)
- ✓ Capacity building at scale- District and State level engagements
- ✓ Inputs in policies and guidelines
- ✓ Resource materials- developing videos, SoPs, and good practice documentation
- ✓ Strengthening existing monitoring systems and moving towards Digital monitoring.

Strategic support for programme implementation at district and block level



Support strengthening monitoring system at district level

Organize district and state level workshop to disseminate learnings

Ensuring sustainability of the project with support at different levels

Key Sustainability Issues:	Infrastructure alone is not enough
	Lack of funds and local ownership.
	Dependency on government or external funding
	Village Water & Sanitation Committees (VWSCs) exist but often lack financial autonomy & technical capacity.
	Limited convergence
Way Forward:	Strengthening Gram Panchayats' role in financial planning & management.
	Strengthening Village Water & Sanitation Committees (VWSCs) to oversee sustainability.
	Local governance & financial sustainability are crucial for long-term impact.
	Convergence with Government Schemes
	Climate resilience must be integrated into rural water planning.

Thank You

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