Climate resilient water security for rural Maharashtra

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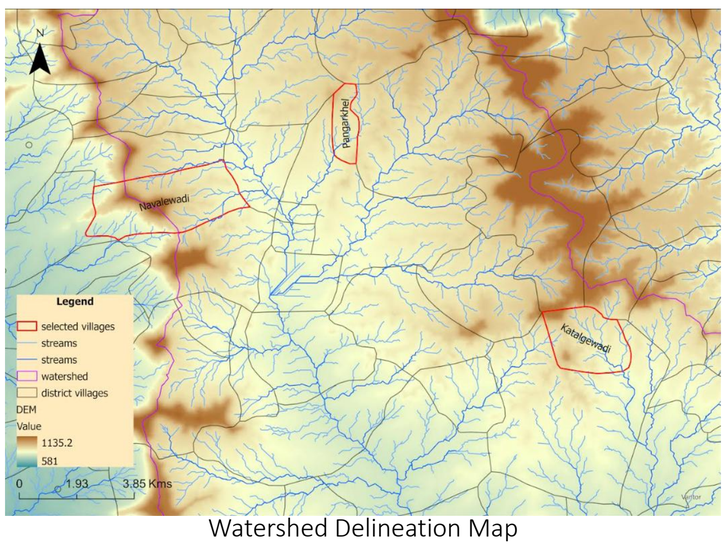
Water situation in Khatav Taluka of Satara District

Geographic variations and Climatic Extremes

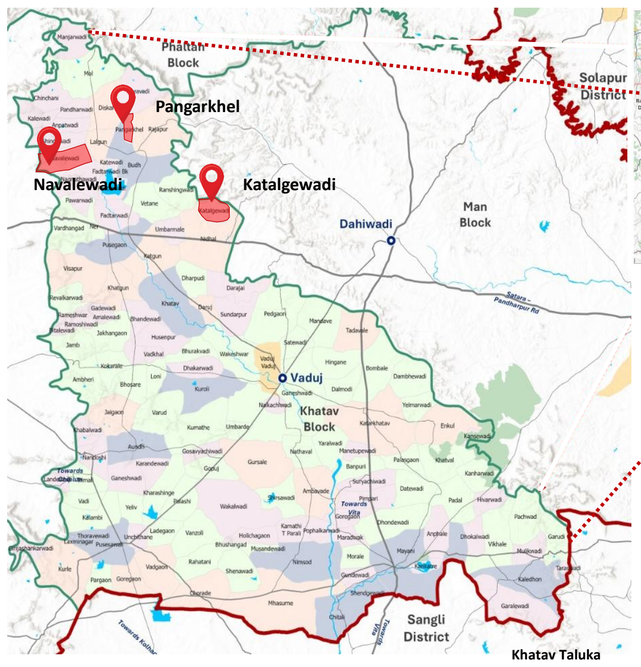
- **Rain shadow region**, receives less than **500 mm** of annual **rainfall**
- Prominent hill ranges, isolated hillocks and **undulating topography**
- **High surface run-off** and **poor** storage and **transmission capability** of **aquifers**

Severe Water Stress

- Recurring **water scarcity**, especially during the **summer** months
- **Drying wells, high runoff, poor groundwater recharge** and heavy **dependence** on **tanker-based** water supply have made water security a critical challenge for rural communities



Watershed Delineation Map



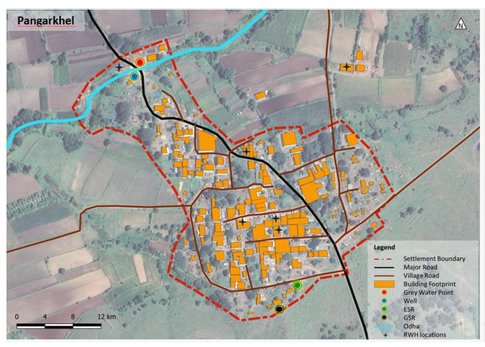
Location map for project

The project aims to enhance water availability, reduce tanker dependency, and demonstrate sustainable village-level water conservation solutions, strengthen community ownership, which is being implemented by CWAS in partnership with ICICI Foundation.

Selection of villages for project implementation

Village selection Criteria:

- ✓ Need
- ✓ Willingness of local government
- ✓ Availability of space for RWH demonstration at household level and institutional level
- ✓ No immediate major government project planned

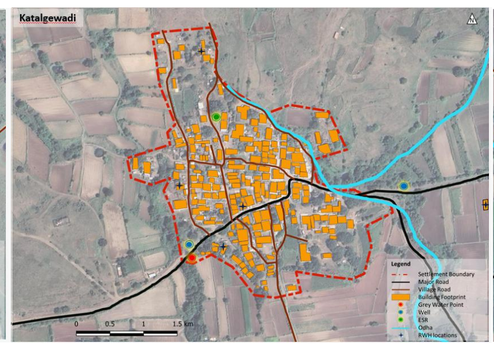


Pangarkhel

Population - **500**; HHs - **114**

Water Source - Groundwater (well)

Issues: Scarcity from Feb, Dependency on private borewell, High percolation in pond

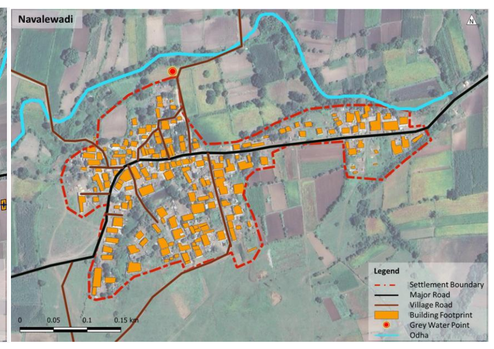


Katalgewadi

Population - **571**; HHs - **181**

Water Source - Groundwater (well)

Issues: Scarcity from April, Lake has low storage capacity and high leakages



Navalewadi

Population - **800**; HHs - **140**

Water Source - Private well

Issues: Scarcity from Feb, No GP owned well, high water runoff as surrounded by hills on 3 sides and poor percolation.

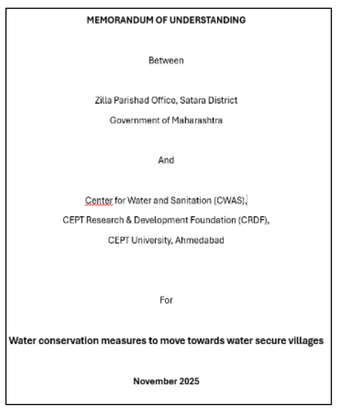
Phase 1 villages

Water budget indicates water shortage in the villages; need for more conservation measures

Sr. No	Indicator	Pangarkhel	Katalgewadi
1	Total Population	356	571
2	Rainfall (mm)	566.6	400
3	Area of village (ha)	617	714
4	Water percolated in the soil (Cr. Lit)	34.96	28.56
5	Water available on the surface (Cr. Lit)	17.48	14.28
6	Water conserved through recent conservation measures (Cr. Lit)	26.85	86.24
7	Water required for human consumption (Cr. Lit)	0.52	0.83
8	Water required for livestock (Cr. Lit)	2.92	0.64
9	Agriculture water needs (Cr. Lit)	89	154.25
10	**Total water required (Cr. Lit)**	**92.44**	**155.72**
11	**Total water available (Cr. Lit)**	**79.28**	**129.08**
12	**Water shortage (Cr. Lit)**	**-13.15**	**-26.64**

Project implementation activities

- Field visits and baseline surveys
- Discussion with GP and Rural officials
- Preparation of Village-assessment profile
- GP resolution for project activities
- Identification of location for implementation of project activities
- Vendor selection and Implementation of project activities (Ongoing)
- Awareness Campaigns & Community Trainings
- Operation and Maintenance trainings and handover to GP
- Scaling up efforts at district level and state level



MEMORANDUM OF UNDERSTANDING

Between

Zilla Parishad Office, Satara District

Government of Maharashtra

And

Center for Water and Sanitation (CWAS),

CEPT Research & Development Foundation (CRDF),

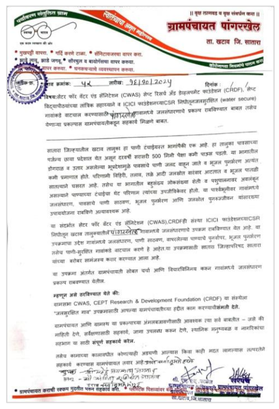
CEPT University, Ahmedabad

For

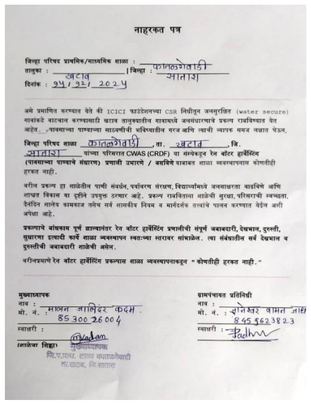
Water conservation measures to move towards water secure villages

November 2025

MoU with ZP, Satara



GP resolutions for support



NOC from school

Consultation with Gram Panchayat and Panchayat Samiti officials

Discussions with citizens

Detailed project activities

	Activities	Numbers
	Community level storage structure for rainwater harvesting	45
	Rainwater harvesting **at institution level**	9
	Groundwater recharge structure	9
	Surface storage (Bandhara, small lakes, bunds etc)	3
	Used water small scale **treatment** plant and **reuse** for meeting livestock requirements	3
	Awareness Drive + Technical **trainings** + Strengthening Gram Panchayats	18

Implementation of Rain Water Harvesting storage structure

RWH for institutional structure
30,000 lit

The facility serves **20-25 people daily**
Avg daily demand of **200 - 400 liters** *(drinking, handwashing, and sanitation)*
The **30,000-liter** capacity provides **75-150 days of water supply**

- ✓ Selection based on **roof condition, structural safety, available space, and accessibility**
- ✓ Maximizing **monsoon rain capture**
- ✓ **Gram Panchayat and institution consent** obtained for long-term operation and maintenance

RWH for household structure
5,000 lit

Village household **4-5 members**
Avg daily demand of **200 - 250 liters** *(drinking, cooking, bathing, and cleaning)*
The **5,000-liter** capacity structure can sustain a family through **one summer month**, directly cutting tanker dependency.

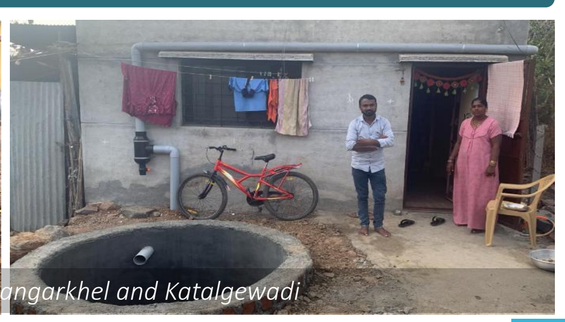
- ✓ Selection based on **roof catchment area, availability of own space, and site accessibility**
- ✓ Prioritized **HHs** with **high** summer **water stress**
- ✓ **No existing storage** facility
- ✓ **Willingness** of households to use and **maintain** the **system**

The project will create 1.65 lakh litres of water storage at the village level, catalysing household-led water security initiatives.

RWH structures for institutions and households

Bhoomi pujan at school in Pangarkhel

Ongoing work at Pangarkhel and Katalgewadi



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