

Newsline 001/ 2023

## PARTICIPATORY GROUNDWATER MANAGEMENT TO ADDRESS WATER SCARCITY DUE TO CLIMATE VARIABILITY

In drought-prone regions, water scarcity primarily stems from climate variability. To enhance the resilience of smallholder farmers against these challenges, the proposed project focuses on harnessing seasonal surpluses efficiently. Groundwater plays a pivotal role in bridging the gap between surplus and deficit during different seasons in drought-prone areas. Through participatory groundwater management, the project aims to elevate the resilience of smallholder farmers against climate variability. The strategy involves raising awareness about groundwater and hydrology, empowering farmers to make informed decisions on crop water management post-monsoon. This, in turn, establishes a social mechanism for self-regulating groundwater use among the farming community.

The project, under the “Climate Resilience through Water” initiative by the India Water Partnership, aims to enhance smallholder farmers' resilience in drought-prone areas. Focusing on participatory groundwater management, the strategy involves raising awareness on groundwater and hydrology. This empowers farmers to make informed decisions on crop water management post-monsoon, establishing a social mechanism for self-regulation of groundwater use.







Implemented by Grass-Roots Action for Social Participation (GRASP) in a cluster of five villages in Fulambri Block of Aurangabad District (in Marathwada region of Maharashtra), falling in drought prone semi-arid tropical zone, the initiative mobilises communities, builds awareness on aquifers, and creates Village Water Management Committees (VWMCs). Trained youth serve as barefoot technologists for assessing and monitoring key hydrologic parameters, supporting participatory water use planning to combat climate variability.



The below timeline outlines the project's phased approach, from initial mobilisation and VWMCs establishment to scientific measures for long-term resilience against climate variability.



## Advancing Water Management and Climate-Resilient Agriculture

 <p>VWMCs prepared five water management plans, utilising village-wise water budgets. These plans will undergo upgrading as adaptation plans in early 2024, incorporating aquifer mapping, and will be presented in the Gram Sabha.</p>	 <p>Farmer groups developed water use plans, comprising five for the previous summer season and five for the current winter season.</p>	 <p>A total of 107 farmers adopted climate-smart agricultural practices, with 19 installing new drip units through convergence and personal investment.</p>
 <p>Climate-smart agricultural training was provided to 288 farmers, of whom 220 formed Farmer Field School (FFS) groups.</p>	 <p>Aquifer delineation and mapping were conducted in all five project villages, laying the groundwork for future adaptation plans.</p>	 <p>Ten youth and fifty farmers received training in groundwater assessment and are actively monitoring well water levels on a seasonal basis.</p>

### Addressing water scarcity in drought-prone areas of Maharashtra by enhancing smallholding farmers resilience through participatory groundwater management

#### Hydrogeological Survey

- **Purpose:** Appraise farmers of climate-smart technologies through on-site training and demonstration.
- **Activities:** Comprehensive study by mapping geological formations, aquifer characteristics, and potential recharge zones.
- **Outcomes:** Identification of water-bearing potential, aquifer expanse, and potential recharge zones. Insights for irrigation planning.

#### Hands-on Training of VWMCs

- **Purpose:** Strengthen VWMCs for water governance and stewardship.
- **Activities:** Refresher training, well water level checks, and systematic capacity building.
- **Outcomes:** Capacity building for water budgeting, guiding farmers on sustainable water use, and managing water requirements.

#### Water Use Planning

- **Purpose:** Strengthen VWMCs for scientific adaptation measures and water governance.
- **Activities:** Preparation of village-wise water use plans, crop planning based on available water.
- **Outcomes:** Enhanced skills for assessing water requirements, identifying augmentation and recharge measures.

#### Drought Review (2023)

- **Situation assessment:** Detailed review of drought impact, reduction in crop productivity, and groundwater availability.
- **Mitigation efforts:** Adoption of in-situ moisture conservation and organic manure to cope with moisture stress.

#### Soil Health Interventions

- **Soil testing:** Motivated farmers for soil testing where organic manures were used.
- **Soil health management:** Guidance on integrated crop management practices, including composting methods and organic formulations.

#### Overall Impact

- **Alignment with long-term goal:** Increasing farmers resilience against climate variability through informed water management and sustainable agricultural practices.



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This Newsline has been prepared based on a project supported by India Water Partnership and implemented by GRASP on participatory groundwater management to address water scarcity due to climate variability in drought prone areas of Maharashtra.