

E-PAVAS

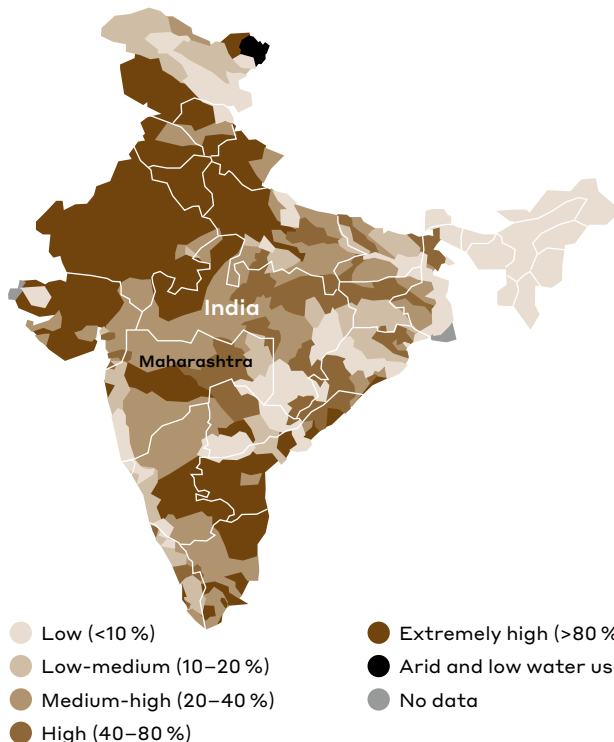
Supporting Water Users' Associations through Digital Solutions



Addressing Maharashtra's Water Crisis

India is severely impacted by climate change, which adversely affects its water resources. With population growth, urbanisation, and climate change as major stressors of water, 54 percent of India is likely to face 'high to extreme high' water stress. According to the Government of India, by 2030, water demand is expected to be twice as much as the supply. This could seriously affect people's lives, health, the economy, and ecosystems, and could also lead to new water conflicts or make existing ones worse.

2030 Water Stress Forecast



The state of Maharashtra has chronically experienced droughts in one-third of its talukas (cluster of villages). Inequitable water distribution from large infrastructure projects has also led to substantial groundwater abstraction, increasing the risk of hydrological droughts. For instance, approximately 1.1 million sugarcane farmers in Maharashtra consume a staggering 70% of available irrigation water, despite farming only 4% of the agricultural land. Such disproportions in water use, especially by the large landholders who claim excessive amounts, have been the primary cause of the deepening water crisis in Maharashtra.

Moreover, geographical location can place farmers at a disadvantage. Typically, farms situated in the head reaches of surface irrigation projects enjoy better access to water compared to those in the tail-end areas. Due to their distance from the water distribution network, farms in tail-end regions may encounter diminished water flow, decreased water pressure, or irregular water supply in contrast to their counterparts nearer to the water source.

Therefore, there is an urgent need to implement a water governance system that is more integrated, equitable, and sustainable.

Note: Figure represents water stress forecast for year 2030 under the Business As Usual scenario.
Source: WRI Aqueduct Water Risk Atlas

Piloting Equitable Water Distribution in Drought-Prone South Maharashtra

Thirteen talukas in South Maharashtra located within the Satara, Sangli, and Solapur districts, are severely drought prone regions. The region receives a meagre rainfall of 350 mm annually, leading to water scarcity in the dry seasons, including severe drinking water shortages. Livelihood insecurities have driven many people from South Maharashtra to migrate, often to large cities to work as manual labourers.

For decades, the grassroots movement Shramik Mukti Dal Samaan Paani Vatap Pani Sangharsh Chalwal (Social Movement for Equitable Water Distribution) has advocated for restructuring the public irrigation system, the Tembhu Lift Irrigation System (TLIS), on equitable lines. After years of struggle and negotiations with the government, the TLIS has been restructured to achieve equitable distribution in three talukas: Atpadi, Sangola, and Tasgaon in the Sangli district. This system ensures that every family will receive 5000 m³ of water (1000 m³ per person) for their livelihood needs. Water Users Associations (WUAs) will manage and govern this water in an integrated, equitable, and participatory manner. Atpadi, Sangola, and Tasgaon have been selected as pilot sites for the implementation of equitable water distribution.



Young community resource person showing a senior farmer the functions of E-PAVAS, © SOPPECOM

E-PAVAS: Digital Solutions for Decision-making in Water Governance

SOPPECOM has collaborated with TMG, a Berlin-based Think Tank for Sustainability, to explore how digital solutions can support equitable and sustainable water governance. Here, digitalization is not understood as an end goal but as a tool to empower farmers, enabling them to make informed decisions on integrated, equitable, and participatory water management.

In this regard, a customized digital application, E-PAVAS (ई-पावस), has been developed to assist WUAs. E-PAVAS, which stands for “Electronic Paani Vaapar Sanstha,” aims to improve transparency within WUAs and ensure integrated, equitable water distribution.



Female WUA board member being shown the functions of E-PAVAS © SOPPECOM

Features and Benefits of E-PAVAS

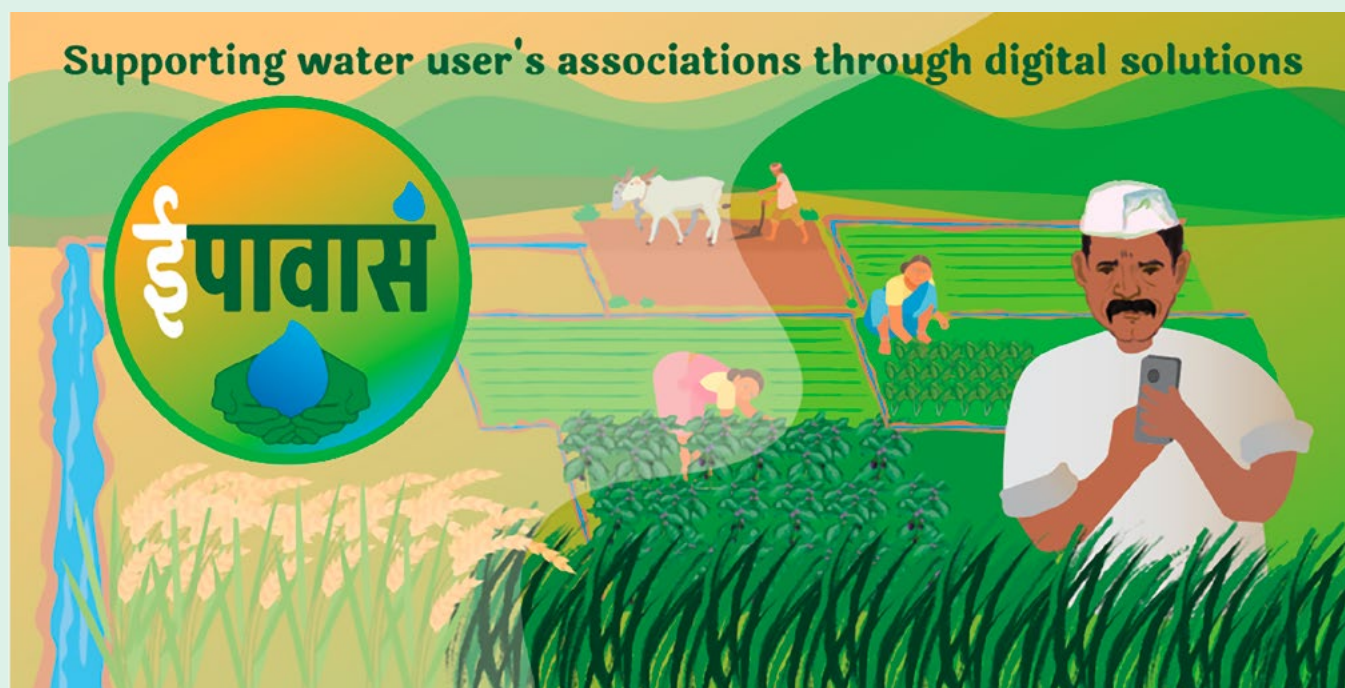
E-Pavas has been designed after extensive consultations with farmers and WUA board members, offering features that include:

► **Monitoring Water Demand:**
Facilitates effective water budgeting and crop planning.

► **Grievance Reporting:**
Addresses issues related to water access and system leakages.

► **Data Visualization:**
Supports evidence-based decision-making and facilitates water entitlement claims with the district-level irrigation department.

The app's data can also support broader advocacy efforts to supply water to drought-prone areas with state government involvement.



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Impact and Future Prospects

Since its launch in December, E-PAVAS has been piloted in two WUAs that are part of a federation of 16 WUAs in the Buddhihal Minor Irrigation Project in Sangola, Solapur. In these two WUAs, 600 farmers have downloaded the app and are using it to make water demands and file grievances. Seeing the utility of E-PAVAS, 13 WUAs from the federation plan to implement the app in their respective associations. E-PAVAS has also been implemented in seven WUAs in Atpadi, bringing the total number of registered users to over 4,000.

E-PAVAS has attracted considerable interest from farmers. They report that requesting water and filing grievances has become much easier than using the conventional pen and paper method. Farmers also view E-PAVAS as a modern tool for managing water, ensuring greater transparency and accountability.

Commitment to Sustainable Water Governance

Sustainable water governance and building resilient agroecosystems are essential for tackling the multifaceted challenges posed by climate change. Digital innovations can facilitate a more integrated approach to water governance, enhancing transparency and accountability. These technologies can also promote water saving practices to protect ecosystems and improve the overall water footprint.

Through E-PAVAS, SOPPECOM and TMG aims to continue supporting WUAs in Atpadi and other regions in Maharashtra, fostering sustainable, effective, and inclusive water governance. We aspire for this initiative to advance climate-resilient agriculture as well as strengthen water management capacities through digital technologies.



Group training on the E-PAVAS app
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Contact

Society For Promoting Participative Ecosystem Management – SOPPECOM
16, Kale Park, Someshwarwadi Road,
Pashan, Pune 411 008
Maharashtra, India.

Phone: +91 8411994051
Email: soppecom@gmail.com
Website: www.soppecom.org

TMG Research
TMG – Think Tank for Sustainability
TMG Research gGmbH
EUREF-Campus 6–9
10829 Berlin, Germany

Phone: +49 30 92 10 74 07 00
Email: info@tmg-thinktank.com
Website: www.tmg-thinktank.com

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