

## Enhancing existing resources utilization through effective irrigation system management by WRD department, Madhya Pradesh

**Problem statement:** During 2009-2011, area under the WRD department in Madhya Pradesh witnessed a sharp decline in irrigation system utilization (i.e. % of irrigation potential utilized against the irrigation potential created) – 32% and 34% utilization were recorded in 2009-10 and 2010-11 respectively. During 2010-11, out of the 2.79 mha area under WRD management in Rabi season, only 0.94 mha (35%) has been utilized.

**Intervention:** In 2011-12, the WRD department set a target to arrest the gap between IPC and IPU and increase the irrigation potential utilized to 1.6 mha in rabi season, which is almost a 70% increase over the preceding years. To bridge the gap between IPC and IPU, emphasis on pre-irrigation maintenance, rehabilitation of old irrigation projects and improved management using target setting and monitoring through conventional and web-based tools were adopted.

Some of the key initiatives adopted by the department are summarized below:

- Real-time measurement and monitoring of the available water resources
  - Web-based monitoring of smaller reservoirs and tanks were established, thus eliminating the need of paper-based reporting
  - To avoid internet connectivity constraints, a SMS based module for major reservoirs water readings was developed which was integrated into the WRD Enterprise Information Management System (EMIS)
  - Web-based monitoring system facilitated in disclosure of real-time data for target and actual irrigated area and thus helped in ensuring accountability and transparency; the public information was also triangulated through ground truthing by tail reach farmers, members of WUAs, etc.
  - Regular monitoring by higher management using ICT and video-conferences were set up; water access at tail-end villages was fixed as one of the key performance metrics
- Timely pre-emptive maintenance was given utmost priority to improve system performance

- Pre-Rabi inspections were made mandatory for WRD staff to ensure FSL at main canal. This was complimented by delegation of additional authority to divisional offices to conduct small maintenance work during the month-long maintenance timeframe between mid-September to mid-October
- Last-mile connectivity were ensured through rehabilitation of 4,000 minor irrigation schemes, lining of old earthen canals which led to a jump in area served from 0.37 mha to 0.76 mha in just 2 years
- The above initiatives were supported by adequate and timely budget support from the state government; annual expenditure per unit area increased from Rs. 112/ ha in 2009-10 to Rs. 820/ ha in 2015-16
- Also, participation of WUAs was ensured through delegation of civil works of less than Rs. 50 lakh each to 50 WUAs under Madhya Pradesh Water Sector Restructuring Project

**Impact:** During 2009-10 to 2015-16, the state succeeded in creating 2.06 mha of which around 64% was achieved through improved management of existing schemes and the remaining through construction of new schemes. The average utilization efficiency increased from 32% in 2009-10 to 85% in 2015-16. All these concerted efforts also resulted in increase in irrigated area from 2.53 mha in 2013-14 to 2.69 mha in 2014-15 and 2.81 mha in 2015-16 and increase in food grain production from 30.07 MT in 2013-14 to 34.09 MT in 2014-15 and 37 MT (expected) in 2015-16.

**Sustainability:** The sustainability of the irrigation management measures undertaken is bolstered to some extent by the adoption of the following practices: real-time public disclosure of system outputs (like irrigated area) and constant feedback from tail reach farmers ensuring proper accountability and performance of the irrigation staff, commitment of additional regular funds for maintenance by state government through shift in approach from build-neglect-rehabilitate model to one of sustainable irrigation development and management and empowerment of the WUAs.

*(Reference: RS Julaniya et al., A Management Approach to Increase Irrigated Area and Production in Madhya Pradesh, India; Dr Tushar Shah (2016) "Har Khet ko Pani?: Madhya Pradesh's irrigation reform as a model")*