

IWMI conducts extensive field visits in Gujarat

To assess farmers' perception of the Government of Gujarat's [SKY](#) scheme (Suryashakti Kisan Yojana), IWMI researchers visited various feeders in a host of villages spread across the districts of Anand, Mehsana, Surendranagar and Bharuch in December 2021. The team conducted extensive interviews with farmers enrolled under the SKY scheme and tried to understand the drivers behind enrolment in the scheme and its perceived impact on farmers' cropping patterns, energy use and generation, and net economic returns since their feeders were solarized. The visit also entailed rich discussions with utility officials to gauge the reasons behind the variation in performance of the scheme across the four diverse geographical zones, which yielded valuable insights for the way forward for SKY and other distributive solar programmes across India. The team visited the following feeders:

- Feeders under Madhya Gujarat Vij Company Limited (MGVCL): Ishnav, Petlad, Ashapuri and Trambovad feeders located in Anand district were visited. Tobacco, a water-intensive crop, is predominantly grown in this district in the winter (Rabi) season, while paddy and cotton are the main crops cultivated in the monsoon (Kharif) season. There were mixed reviews about the SKY scheme overall, with the main issue being low awareness surrounding the scheme's financial design and high levels of pumping due to water-intensive crops and the presence of dominant and deeply entrenched informal water markets. Since the implementation of SKY, the rate of selling water to small farmers by larger SKY farmers have increased. This was done in response to the need for farmers to service the loan component of the programme. However, most farmers in this region were aware of the direct relationship between the cleaning of solar panels and power generation and the methods deployed therein to clean these panels.



IWMI researchers in conversation with a farmer, Ishnav feeder, Anand.

Photo: Zeba Ahsan/IWMI

- Feeders under Uttar Gujarat Vij Company Limited (UGVCL): The Mahakali feeder in the Mehsana district of Northern Gujarat was visited. An extremely positive response was observed in this area, and the farmers have earned substantial income by injecting electricity

back into the grid. The primary reason is the high-capacity pumps (> 50 Hp) and increasing contracted load while keeping the actual motor size the same, allowing farmers to generate, evacuate and sell a larger number of units of energy to the grid. The solar panels are cleaned frequently, and the concerned agency responsible for repairing the SPV system is highly responsive to technical issues like voltage fluctuations, SIM card or meter burnout, and inverter shut down. In addition, the utility officials have successfully conveyed the scheme design, promoted strategic behaviour among farmers, and maintained grid stability. Overall, the relevant stakeholders, i.e., DISCOM officials, farmers, and agency officials, have together made this scheme a success with excellent promotion of agri-water management. The main crops grown here are tobacco, cotton, potato and sesame. Sprinkler and drip irrigation uptake is prevalent in this region.



*Potato cultivation at a farm, Mahakali feeder, Mehsana
Photo: Zeba Ahsan/IWMI*

- Feeder under Paschim Gujarat Viji Company Limited (PGVCL): The Akash feeder in the Surendranagar district of the Saurashtra region in Western Gujarat was visited. With castor and pulses like *Arhar* being major crops, the farmers depend on surface and groundwater for irrigation. The solar panels are not cleaned frequently, and significantly less income has been generated overall by selling surplus electricity. Prolonged inverter shutdowns and other system-related issues are prevalent among many connections under this feeder. In the first year of the SKY scheme, the authorized repair and maintenance agency was slow to rectify this, resulting in high feeder level losses and farmers having to pay high bills. However, the second year witnessed an improvement in the quality of the agency's service, which translated into higher returns for farmers. Many farmers may not have access to smartphones or do not know the usage of the SKY app. Therefore, the farmers here require capacity building regarding the Operation and Maintenance (O&M), the scheme's financial aspects, and the usage of the SKY app.



*A farmer cleaning a solar panel, Akash feeder, Surendranagar
Photo: Zeba Ahsan/IWMI*

- Feeder under Dakshin Gujarat Vij Company Limited (DGVCL): The Umargam feeder in the Bharuch district of southern Gujarat was visited. The primary crop grown here is highly water-intensive sugarcane. Farmers were less aware of the relation between solar panel cleaning and energy generation, with the added problems of pollution (which causes panels to become dusty, lowering energy generation), cable theft, broken solar panels and high-water abstraction, to name a few. Overall, there is a lesser understanding of the scheme with minimal knowledge of how the SKY app works.



*Sugarcane cultivation at a farm, Umergram feeder, Bharuch
Photo: Zeba Ahsan/IWMI*

GERMI (Gujarat Energy Research and Management Institute) accompanied IWMI researchers to the Mahakali feeder under UGVCL and Petlad under MGCVCL. This team will train ~ 2200 farmers across 48 feeders in Gujarat, starting early 2022.