

Sustainable solutions: Recharging aquifers and solar pumps

Dadamapar, a small village in Abdasa taluka of Kutch district has a population of 70 and the total number of households is 50. The daily water requirement of the village is 5000 liters. The village is connected with the Koniyari water supply scheme, a fairly regular source and an old open well that yields sufficient water of potable quality for drinking purposes also serves as a source of water. Each household is connected with the storage tank. As a common facility, the village has a storage tank of 10,000 liters capacity connected with stand post and cattle trough. The Pani Samiti of the village efficiently manages the distribution system. The present pumping system consists of a 10 HP diesel pump lifting water from dynamic head of 17 meters. The committee collects Rs.40 per month from each household and recovers the expense of fuel, maintenance and salary of the operator through this tariff.

However, in drought years the yield of the source reduces. Given this situation, recharging of the aquifer was taken up under in order to make the source sustainable. A pond, which serves as the recharging area for the well was observed to retain water for only a couple of months. The pit had thick layer of clay, which did not allow water to percolate and most of the rainwater collected in pond used to get evaporated, leaving the well dry. This layer of clay was broken to expose a layer of coarse-grained sandstone below, which allowed rapid percolation of water. After the rains in 2006, although it took only a few days for the pond to dry up, the positive side was that all the water collected got percolated into the aquifer below, recharging it completely.

To overcome the problem of erratic water supply, the village community has also gone in for the installation of solar pump and has made a ten per cent community contribution towards this as per the guidelines of the ERR programme. The system consists of a solar PV of capacity 640 Wp and a submersible pump of 0.75 HP, with a water discharge capacity of 20,000 litres. The system was installed at a total cost of Rs. 4.23 lakhs. The training provided by ISAs to villagers is proving to be effective as the villagers now easily operate the solar water pump, and also find it convenient and time saving as compared to diesel pumps.

Dinesh Bhanushali, a member of Pani Samiti in Dadamapar, says, "Earlier, in summer we had to ensure that some one constantly monitors the pump near the well. Also, running the pump for long meant heavy expenditure. But now, after 271 families in the village contributed to get a solar pump, we will not have to worry about supply of water or rising price of diesel."