

## Study on Seasonal Variations in Drinking Water Quality in Bundelkhand

Under our Photo-irradiation and Adsorption based Novel Innovations for Water-treatment (PANI -Water) Project, a study on seasonal variations in the potable water quality in six villages of Bundelkhand was carried out. The water samples were collected from the source points in all six villages (Rajpura, Ladpura, Majra, Bagan, Mador East, and Chandrawan) in April (summer season) and July (rainy season), 2022. The major source of drinking water in the villages was found to be hand pumps. The physico-chemical testing and its analysis was performed with the help of Jal TARA Water Testing Kit, wherein nine important parameters including pH, TDS, turbidity, hardness, alkalinity, fluoride, chloride, nitrate, and bacterial contamination were included to understand the water quality in the villages in both summer and rainy seasons.



*Interacting with the residents of Mador Eas*



*Water sample collection from a hand pump*

In addition, a round of interaction with the villagers was carried out in all six villages, wherein basic water availability and contamination issues were discussed. It was observed that for the rainy seasons, people have sufficient water available, but many villages reported a greater number of positive bacterial contamination in the rainy season as compared to the summer season. Altogether, high TDS, turbidity, and nitrate values were reported for both the months, along with strong bacterial contamination. Thus, it can be concluded based on the study that physico-chemical characteristics of water samples was influenced by seasonal variations.