

## Socio-economic and Water Contamination Survey in Sonbhadra for 'Fluoride-Mukt' Drinking Water

**W**e conducted a survey in 22 villages of the Sonbhadra district in Uttar Pradesh under the project 'Empowering Tribal Villages of District Sonbhadra for Accessing Fluoride *Mukt* Drinking Water with Integrated Approach Project', funded by the Department of Science and Technology, Government of India from 25 to 29 September, 2022. The objective of this survey was to assess the implications of high fluoride in the groundwater of the region.



Interaction with villagers

The excess amount of fluoride in drinking water may promote dental and skeletal fluorosis. Fluorosis, as a typical side-effect of the intake of high fluoride, results in the mottling of teeth, bone disorder, as well as neurological mischief in serious cases. The survey covered 1003 households and aimed at identifying the socio-economic status of the villagers, their income and its source, and the type of crisis they face in terms of water availability and water contamination along with the health effects of excess fluoride (including dental and skeletal fluorosis).



Dental fluorosis



Skeletal fluorosis

It could be inferred from the findings of the survey that the annual average income of a household is INR 59,775. In terms of education, out of the total population, 17.6% of people never went to a school, whereas 47.2% of people had only primary education. Out of the 22 villages, 16 villages have fluoride concentrations greater than 1 mg/L, which is the upper limit prescribed by the Bureau of Indian Standards for drinking water. It was also found that 56.6% of people are suffering from dental fluorosis and 7.9% are suffering from skeletal fluorosis. Several severe cases of skeletal fluorosis were also seen wherein people could not even sit on their own due to pain in joints and permanent bending of the bones.