

Water sensing from the skies in pipeline

The search for water may be going high tech. The CSIR-National Geophysical Research Institute (NGRI) is working on a plan to map India's groundwater reserves by a helicopter-based electromagnetic survey.

The heliborne transient electromagnetic technique, as it is called, involves sending electromagnetic pulses to the ground — in timed bursts — and analysing the unique pattern that these waves make as they bounce off the freshwater or saline water reserves. It would allow mapping potential water reserves nationwide, Purnachandra Rao, chief scientist, CSIR-NGRI, said, and cost Rs.12,000 crore over 10 years. This approach would be less cumbersome than the manual methods now being used to map the groundwater.

The CSIR leadership said the proposal was still at a preliminary stage. “We could seriously consider this... In Rajasthan, there are excellent water reserves, and such an approach would help in estimating the exact spots,” said Council of Scientific and Industrial Research (CSIR) Director-General Girish Sahni.

According to the estimates from India's groundwater authority, groundwater irrigation has been expanding at a very rapid pace since 1970s and now accounts for over 60 per cent of the total area irrigated. About 85 per cent of the rural drinking water supply is also met from groundwater sources. The most significant change in the groundwater scenario is that the share of bore-well irrigation went up from one per cent during 1960-61 to 60 per cent during 2006-07, according to 2008 statistics. The estimated number of wells and bore-wells is around 27 million, with bore-wells accounting for more than 50 per cent.

The helicopter-based assessment was used for mineral exploration surveys and would require coordination with the Ministry of Water Resources, Mr. Rao said.

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