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Underground rainwater harvesting must: Expert

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Aurangabad: Jalmitra Vijay Kedia said that the only solution to water scarcity is to store rainwater underground, as the water stored above surface will get lost through evaporation.

A resident of Aurangabad and an IITian from Bits Pillani, Kedia was making a presentation to the R A Mashelkar Committee on innovative technologies for water and sanitation in New Delhi on Thursday. His presentation was on drinking water security in villages through the Kedia Farm Pattern (KFP).

Over 25 experts from the fields of innovative technologies for water and sanitation were invited by the Union ministry of drinking water and sanitation to share their expertise.

"Drought or no drought, underground rainwater harvesting is a secured and low cost alternative, which will prevent farmer suicides by ensuring permanent water security in farms. It would not only solve drinking water scarcity but also reduce the load of water demand by agriculture on existing water resources like dams," said Kedia, the brain behind the Kedia Farm Pattern patented by the Government of India.

Kedia said, "We have to accept that above-ground water conservation has failed and time has come to adopt underground rain water harvesting (RWH) for water security."

Rainwater harvesting can save 80% rainwater in the ground and increase soil moisture at a one-time investment of Rs 80,000 per hectare. In the past four years, the government has spent about Rs 18,000 crore to tackle drought in Maharashtra. With the same amount, underground rainwater harvesting can achieve permanent drought proofing of 25 lakh hectare agriculture land, he said.

It will also increase well water and groundwater levels, he added.

Kedia has installed more than 1,400 underground RWH structures in 12 states, which annually harvests more than 850 crore litres of rainwater.

Where does rainwater go?

As per the Ground water Survey & Development Agency of Maharashtra, 50-55% of rainwater is lost as surface run-off, 30-35% evaporates and only 3-5% enters the ground which replenishes groundwater. This means, from 1 crore litre rainwater, 80 to 90 lakh litre is wasted. We cannot store this much water above ground, because of land submergence and evaporation losses, besides displacement of people.

About 10% of is stored in the top 2ft as soil moisture, utilised by crops or lost within a week

Kedia Farm Pattern

- * A village of 1,000 population needs 1.5 crore litre water annually at the rate of 40 litre/person/day
- * If underground rainwater harvesting project is implemented in 30 hectare or more land near community well (for making series of structures) it can create harvesting capacity of 15 crore litres
- * One-time investment: Rs 24 lakh, excluding contingency/overheads by government or other agencies

Benefits of recharging the earth

- * Water security round the year and permanent solution to drought
- * Soil moisture retained in top 2 to 10 feet and provides natural irrigation to crops

- * Increases pure and filtered drinking water in wells
- * Ample rainwater harvesting dilutes total dissolved solids of groundwater
- * Low one-time investment
- * No permanent land submergence
- * Eco-friendly solution for villages and farms