

Scientific water conservation system boosts greenery at IIT-I

TIMES NEWS NETWORK

Indore: Indian Institute of Technology, Indore (IIT-I), is implementing a science-driven water conservation and management system on its campus. The system combines recycled water use, smart monitoring and sustainable landscaping practices as institutions increasingly focus on climate-resilient infrastructure.

The institute has developed water ponds, check dams and rainwater harvesting systems across the campus to improve groundwater recharge, retain soil moisture and reduce rainwater runoff.

"At IIT-I, sustainability is not an abstract goal but a lived commitment reflected in every aspect of our campus development. The visible transformation in our greenery is a powerful validation of what can be achieved when scientific insight is translated into purposeful action," IIT-I director Suhas Joshi said.

According to institute, observations of the Normalized Difference Vegetation In-

HOW IT HAPPENED



► IIT-I developed water ponds, check dams and rainwater harvesting systems across the campus to improve groundwater recharge, retain soil moisture and reduce rainwater runoff

“By integrating satellite-based monitoring with on-ground conservation measures, we have been able to sustain soil moisture and recharge groundwater effectively

Manish Kumar Goyal

PROJECT PRINCIPAL INVESTIGATOR

dex (NDVI) between 2021 and 2025 showed a steady rise in vegetation density and health since 2022, indicating improved groundwater recharge and soil moisture retention.

NDVI is a remote sensing metric used to measure plant health and density by analysing reflected near-infrared and red light. Higher NDVI values indicate healthier vegetation, and lower values indicate stressed vegetation or barren areas.

The institute said the campus earlier witnessed seasonal vegetation decline during peak summer months. However, satellite data now shows that greenery levels are being sustained even during dry periods, which the

institute attributed to improved groundwater availability and moisture retention.

"The NDVI trends from 2022 to 2025 clearly demonstrate the positive impact of water harvesting interventions on vegetation growth at IIT-I," principal investigator of the project professor Manish Kumar Goyal said.

"By integrating satellite-based monitoring with on-ground conservation measures, we have been able to sustain soil moisture and recharge groundwater effectively," he said.

The institute said that the conservation initiatives were also helping reduce soil erosion, support biodiversity and moderate local temperature on the campus.