Free Press (Indore), 24th April 2026, Page – 02

IIT-I water plan turns campus green year-round

Our Staff Reporter
INDORE

Indian Institute of Technology Indore has emerged as a leading example of how science-driven water conservation practices can significantly enhance ecological sustainability. Over the past few years, the institute has undertaken a series of strategic interventions, including

FROM GREY TO GREEN

the construction of water ponds, check dams and rainwater harvesting systems, to capture, store and efficiently utilise rainwater across its campus.

These initiatives were designed not only to conserve water but also to recharge groundwater, maintain soil moisture and support long-term vegetation growth. By preventing rainwater runoff and enabling gradual percolation into the ground, the institute has created a resilient ecosystem where plant life can thrive even during extended dry periods.

Satellite-based observations of the Normalized Difference Vegetation Index (NDVI) between 2021 and 2025 now provide compelling evidence of the success of these efforts. NDVI, a widely recognised indicator of vegetation health, reveals a clear transformation in campus greenery. While seasonal fluctuations persist, with lower values during the hot, dry months (March to May) and peaks during the monsoon and post-monsoon period (August to October), a steady improvement has been observed since 2022.

What is particularly significant is that vegetation has not only become denser and healthier during the monsoon but has also maintained higher levels of greenness during traditionally water-stressed months. This shift indicates improved soil moisture retention and sustained groundwater availability, an uncommon achievement in the central Indian climatic context.

Commenting on this transformation, IIT Indore Director Suhas Joshi said, At IIT Indore, 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.

Principal investigator Manish Kumar Goyal added, The NDVI trends from 2022 to 2025 clearly demonstrate the positive impact of water harvesting interventions on vegetation growth at IIT Indore. By integrating satellite-based monitoring with on-ground conservation measures, we have been able to sustain soil moisture and recharge groundwater effectively.

Water Conservation Techniques

CHECK DAMS: Small, temporary or permanent barriers constructed across a swale or drainage ditch to reduce the velocity of water flow and prevent soil erosion.

RAINWATER HARVESTING: The collection and storage of rain, rather than allowing it to run off, which can be used for irrigation or to recharge underground aquifers.

GROUNDWATER RECHARGE: A hydrologic process where water moves downward from surface water to groundwater, helping maintain the water table.

What is NDVI?

Definition: The Normalized Difference Vegetation Index (NDVI) is a remote sensing tool used to estimate the density and health of vegetation.

How it Works: It measures the difference between near-infrared (which vegetation strongly reflects) and red light (which vegetation absorbs).

Values: High NDVI values indicate dense, healthy green leaves, while low values represent sparse vegetation or stressed plants.