



New Water Harvesting Model in Rajasthan

Why in News?

In Rajasthan's arid landscape, a new [water conservation model](#) in **Kukas village, Jaipur**, using **50 climate-resilient farm ponds**, aims to benefit farmers by **conserving 10 crore litres of rainwater**.

Note: **Vipra Goyal**, an IIT Kharagpur alumnus and former [NITI Aayog](#) official, is **leading the initiative** and has **conducted awareness campaigns in Dausa** through local sabhas and rallies.

Key Points

- **About the Rainwater Harvesting Model:**
 - The Kukas village panchayat in Jaipur's Amber block is the second location in Rajasthan chosen for this [rainwater harvesting initiative](#).
 - The project follows the success in Dausa district, where 250 farm ponds helped **farmers grow perennial crops in rainfed lands**.
 - The initiative involves building 10-foot-deep, plastic-lined ponds on 5% of each farmer's land, with secure fencing.
- **Future Plans & Impact:**
 - The initiative, which has already seen the **installation of 50 ponds**, **plans to expand with an additional 25 ponds**. This expansion is expected to benefit around 50,000 villagers in the region over the long term.
- **Significance:**
 - **Sustainability and Crop Diversification:** The initiative focuses on providing year-round water supply, allowing farmers to grow both [rabi](#) and [kharif crops](#) while diversifying into more water-efficient and profitable crops like **groundnuts and chaula (cowpeas)**.
 - **Groundwater Recharge:** The ponds are designed not only to provide [irrigation](#) but also to **help recharge the groundwater**, an essential resource in areas like Amber block, which lacks river or canal networks.
 - **Livelihood Enhancement:** The continuous water supply facilitates [sustainable livestock rearing](#) and high-value [horticulture](#), creating opportunities for [dairy farming](#) and [food processing](#) units in the region.
- **Groundwater Stress in Jaipur District:**
 - 99.4% of Jaipur's cultivable **land depends on groundwater for irrigation**.
 - The district extracts water at 2.22 times the rate of natural recharge, indicating severe groundwater stress.
- **Overexploitation of Groundwater in Rajasthan:**
 - In 2023, Rajasthan extracted 149% of its annual groundwater recharge—second highest in India after Punjab (156%), as per the [Central Ground Water Board \(CGWB\)](#).
 - For every 1 litre recharged by rainfall, 1.49 litres were extracted, leading to severe groundwater depletion.
 - **Jaisalmer: Worst-hit District**
 - **Jaisalmer topped the overexploitation chart**, drawing 3.56 litres of groundwater for every litre recharged, putting its **ancient aquifers at serious**

risk.

- **Jaipur: A Critical Groundwater Zone**

- All 16 blocks in Jaipur district are overexploited; the district extracted 2.22 litres per litre recharged in 2023.
- Despite near-average rainfall, groundwater use in Jaipur rose by 7–10% in 2024, worsening depletion.

- **Groundwater Recharge and Extraction:**

- Rajasthan's annual groundwater recharge has been estimated at **12.58 billion cubic metres (BCM)**.
- However, the total extraction in 2023 reached 17.05 BCM, far exceeding recharge capacity.
- The extractable groundwater resource was assessed at 11.37 BCM, highlighting an unsustainable gap between use and availability.



Which States overexploit groundwater?

Gujarat

54.2

Banaskantha,
Gandhinagar,
Mehsana,
Patan

4

Haryana

136.0

Ambala, Bhiwani, Charkhi Dadri, Faridabad,
Fatehabad, Gurgaon, Jind, Kaithal, Karnal,
Kurukshetra, Mahendragarh, Panipat,
Rewari, Sirsa, Sonipat, Yamuna Nagar

16

Karnataka

68.4

Bengaluru Rural, Bengaluru
Urban, Chikkaballapura,
Chitradurga, Kolar

5

Madhya Pradesh

58.4

Indore, Mandsaur,
Neemuch,
Ratlam, Shajapur,
Ujjain

6

Punjab

156.9

Amritsar, Barnala,
Bathinda, Faridkot,
Fatehgarh Sahib,
Firozpur, Gurdaspur,
Hoshiarpur,
Jalandhar,
Kapurthala,
Ludhiana, Malerkotla,
Mansa, Moga, Patiala,
SAS Nagar, SBS
Nagar, Sangrur,
Tarn Taran

19

Rajasthan

149.9

Ajmer, Alwar, Baran, Barmer, Bharatpur,
Bhilwara, Bikaner, Bundi, Chittaurgarh, Churu,
Dausa, Dhaulpur, Jaipur, Jaisalmer, Jalor,
Jhalawar, Jhunjhunu, Jodhpur, Karauli, Kota,
Nagaur, Pali, Pratapgarh, Rajsamand, Sawai
Madhopur, Sikar, Sirohi, Tonk, Udaipur

29

Tamil Nadu

74.3

Chennai, Dindigul,
Mayiladuthurai, Namakkal,
Perambalur, Salem, Thanjavur,
Tirupathur, Vellore

9

Telangana

45.9

Hyderabad

1

Uttar Pradesh

70.5

Agra, Firozabad,
GB Nagar,
Ghaziabad,
Shamli

5

Dadra and Nagar Haveli and Daman and Diu

142.2

Dadra Nagar Haveli, Daman, Diu

3

Delhi

100.8

New Delhi, North, North
East, Shahdara, South

5

■ Stage of
groundwater
extraction (%)

■ Districts overexploiting
groundwater resources
(where stage of extraction
is more than 100%)

● Number
of districts

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