WHY RAJASTHAN NEEDS TO FOCUS ON REJUVENATING ITS LOCAL WATER SOURCES

Sustainability of Ground Water Sources - (A Case Study)

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30.01.2026

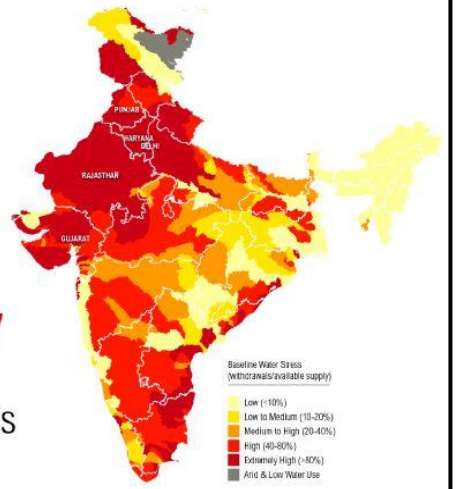
WHY RAJASTHAN NEEDS TO FOCUS ON REJUVENATING ITS LOCAL WATER SOURCES ?

Water Stress

Area of the country as % of world area	2.4%
Population as % of world population (Census, 2011)	17.1%
Water as % of world water	4%
Average annual rainfall (India Meteorological Dept.)	1160 mm (world average 1110 mm)
Range of distribution	150-11690 mm
Range Rainy days	5-150 days

Source: Water Resources Information System of India

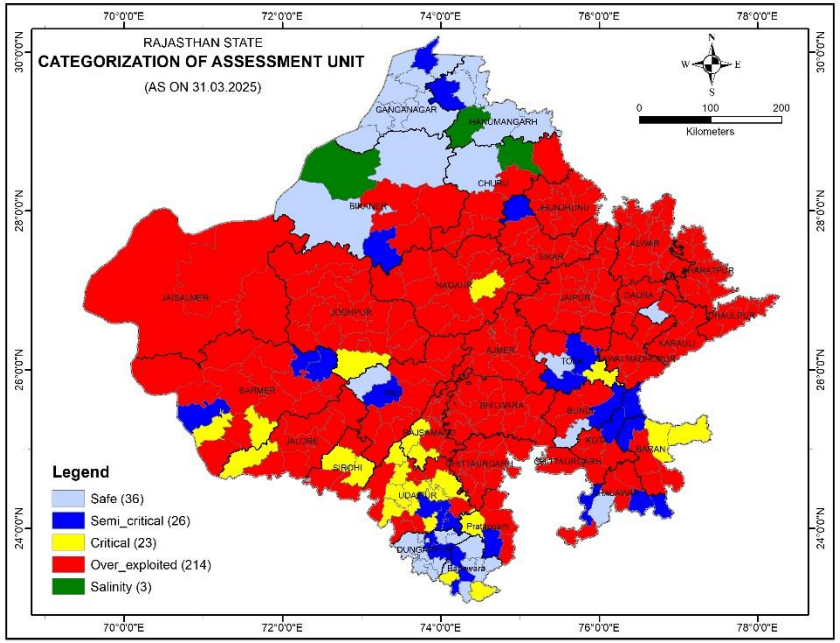
54% of India Faces **High** to **Extremely High** Water Stress



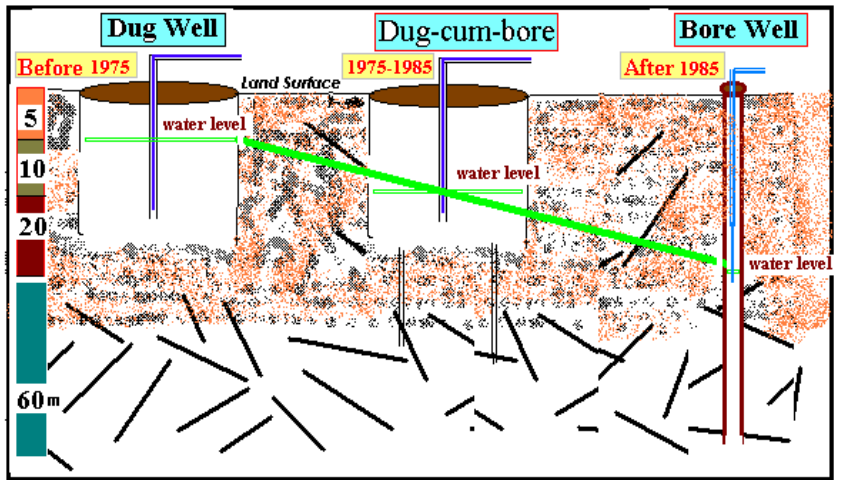
www.indiawatertool.in

WORLD RESOURCES INSTITUTE

Source: World Resources Institute, 2016



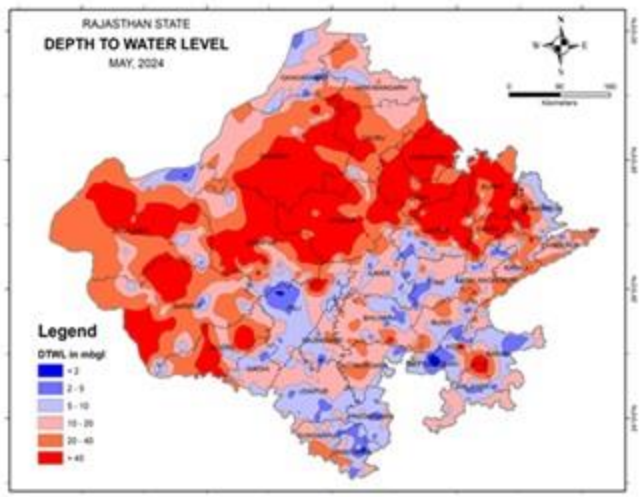
GWRE	2022	2023	2024	2025
OE	219	216	214	213 (70.53%)
Critical	22	23	27	23 (7.62%)
Semi Critical	20	22	21	27 (8.94%)
Safe	38	38	37	36 (11.92%)
Saline	03	03	03	03 (0.99%)
SOE	**151.06%**	**148.77%**	**149.86%**	**147.11%**



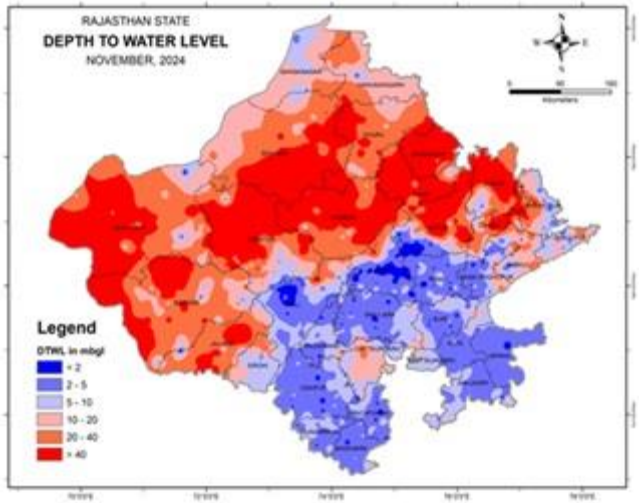
✓ **Rajasthan depends heavily on groundwater—providing 60–90% of drinking supply and nearly 70% of irrigation needs.**

DEPTH TO GROUNDWATER LEVEL

DTWL – MAY 2024



DTWL – NOV 2024



May 2024 (Pre-Monsoon)

- **Western Rajasthan :** Predominantly **deep water levels (>40 m bgl)**, indicating severe stress.
- **Eastern & South-eastern districts :** Mostly **10–20 m bgl.**
- **Central & Northern Rajasthan** Water levels mixed but largely **20–40 m bgl**, with pockets of shallower zones.

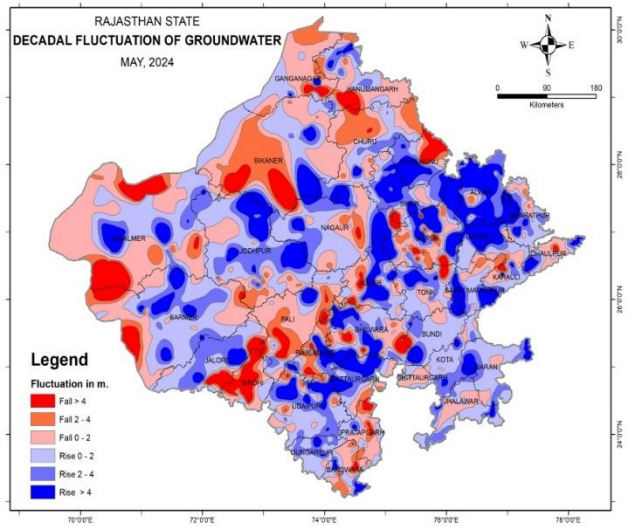
Pre-monsoon → deeper water levels dominate.

November 2024 (Post monsoon)

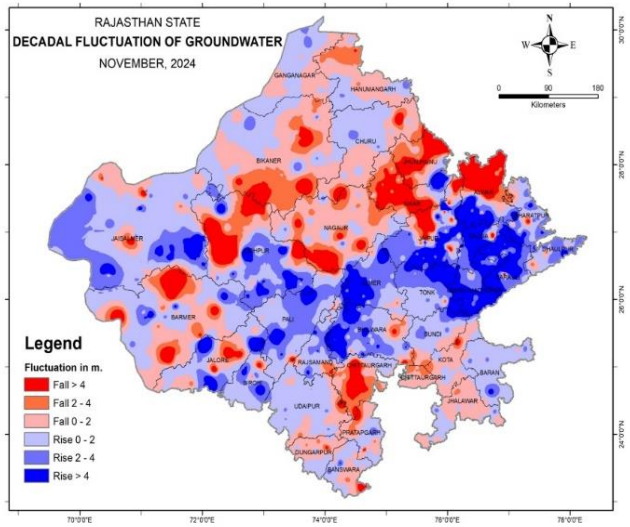
- **South & Southeast:** Shallow water (<5 m) persists
- **Eastern Rajasthan :**Still showing recharge effect, with water level at **5–10 m bgl** in most of the areas.
- **Western Rajasthan:** Depth to water level >40 m bgl depths.

Post-monsoon recharge sustains shallow aquifer in Eastern Rajasthan.

Decadal Fluctuation MAY 2024



Decadal Fluctuation NOV 2024



- **Decadal Comparison of Ground Water Level of Pre-monsoon 2024 with the Mean of Pre-monsoon 2014-2023 indicates:**

- **Pre monsoon:- 60 % wells shows rising trend and 40% wells shows declining trend**

- **Post monsoon:- 63 % wells shows rising trend and 37% wells shows declining trend**

SCHEMES AND INITIATIVES OF MINISTRY OF JAL SHAKTI

Jal Jeevan Mission
Vision – Aligned with SDGs

- **Adequate Quantity** – 55 Litres per capita/ day
- **Sustainability** – Source, system and financial
- **Reliability** – Regular and Safe
- **Affordability** – Reasonable user charges
- **Equity & Inclusivity** – No one should be left behind
- **Quality** – BIS:10500

SUSTAINABLE DEVELOPMENT GOALS

JJM is perhaps the world's largest programme to achieve SDG-6 targets ahead of time with 'speed and scale'

Jal Jeevan Mission, India | @jaljeevan_ | Jal Jeevan Mission | @jaljeevanmission | jjm.gov.in | Jal Jeevan Mission

Jal Shakti Abhiyan: Catch The Rain

Key Focus Areas

Water Conservation and Rainwater Harvesting works

Enumerating, geo- tagging, making inventory of all water bodies – 25 lakh geo-tagged on Jal Dharohar Portal under INDIA-WRIS (https://indiawris.gov.in/wris/#/jalitihaas)

District Water Conservation Plan

Setting up of Jal Shakti Kendras

Intensive Afforestation

Awareness Generation – 4.29 crore youth engaged through NYKS, thousands of Women SHGs, School Students , Farmers mobilized for water literacy by Partner Ministries, States, Municipal Corporations, DMs, Zilla Panchayats, ULBs

ATAL BHUJAL YOJANA [ATAL JAL]

KEY FEATURES

- Sustainable Ground Water Management with community participation
- Inculcation of behavioral changes to promote judicious water use
- Implementation in identified water-stressed areas.
- Convergence with ongoing Central & State Program

EXPECTED BENEFITS

- Improve ground water sustainability in the target areas
- Contribution to goal of doubling of farmers' income
- Source sustainability for interventions under Jal Jeevan Mission
- Inculcation of behavioral changes to promote judicious water use

Jal Sanchay Jan Bhagidari: Progress

- *Target is set to constructing at least 1 million* recharge structures to enhance groundwater replenishment by *31.05.2025*
- A dashboard launched to monitor the works in JSJB under the JSA:CTR which can be accessed via the following link: https://jsactr.mowr.gov.in/jsjb.aspx in public domain

14.15 lakh artificial recharge structures on-boarded	***11.56 lakh*** artificial recharge structures completed	***2.59 lakh*** artificial recharge structures on-going

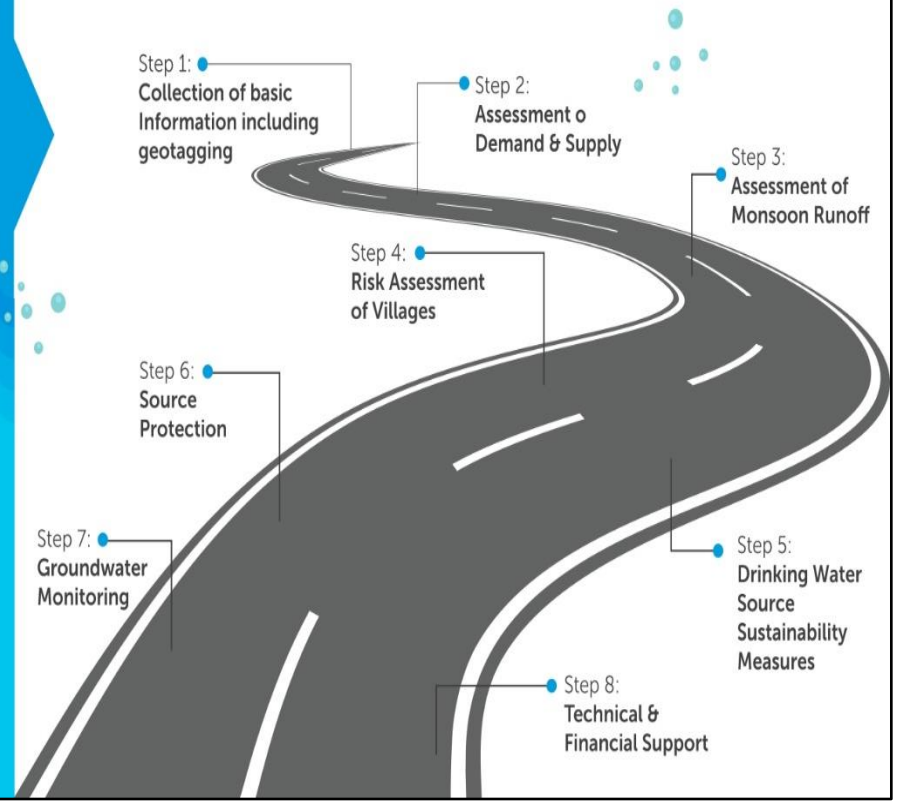
SOP ON SUSTAINABILITY OF GROUND WATER SOURCES

BACKGROUND

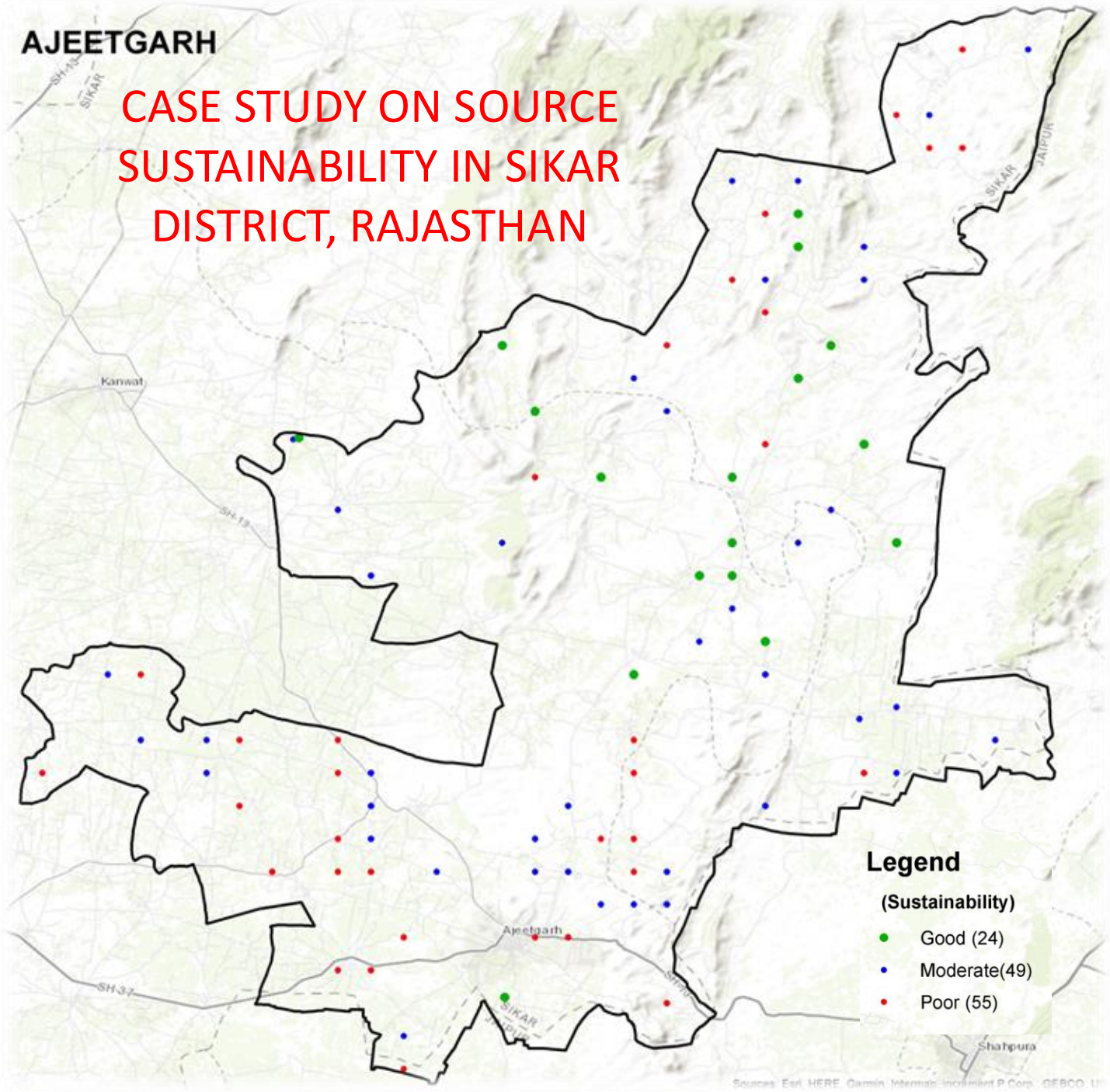
To improve the 'ease of living' of rural population, Jal Jeevan Mission (JJM) is under implementation in partnership with States to provide a functional household tap connection (FHTC) to every rural household by 2024. JJM aims at providing drinking water of prescribed quality (BIS 10500 water quality standards), in adequate quantity (55 lpcd), on long-term and regular basis. With same aquifer catering to the needs of agriculture and drinking water, it is necessary to sustain drinking water sources and springs so that norms of water supply prescribed by JJM can be ensured over the years.

SOP ON SUSTAINABILITY OF GROUNDWATER SOURCES

Sustaining groundwater sources need large scale water conservation measures and recharge in the villages where JJM schemes are GW based. To have a scientific approach in various terrain there is a need to have manual on Standard Operating Procedure (SOP) for Ground Water Source Sustainability. The present SOP is a step-by-step guide providing a broad framework to the water supply agencies and field workers which has following steps:



Check Dam	
Gabbion Structures/Gully Plug /Nalah Bunds	
Percolation Ponds	
Contour Bunds and Contour Trenches	



FIELD OBSERVATIONS

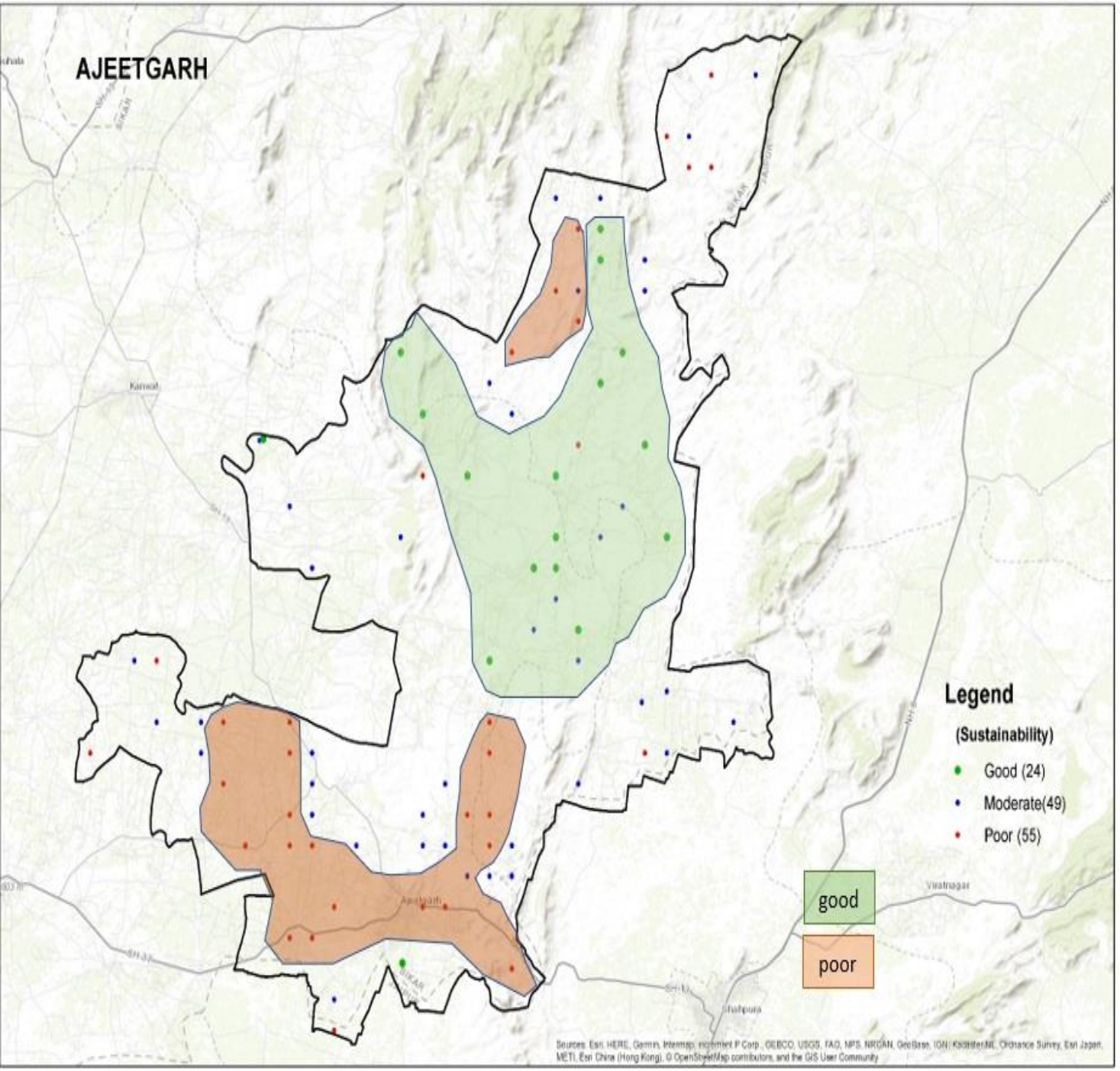
- Block Name: **Ajeetgarh, District – Sikar, Rajasthan**

  - Total Number of villages surveyed: 68
  - Total Number of sources surveyed: 442 (total: 598)

- **Observations:**

  - Wells mostly tap **deeper hard rock aquifers** ranging in depth 50 to 350 m bgl.
  - NAQUIM studies show that the hard rocks have only limited Ground Water potential.
  - The existing water harvesting interventions are widely distributed in the block, but due to availability of limited surface run off, most of them remain dry all along the year.

SUSTAINABILITY ASSESSMENT



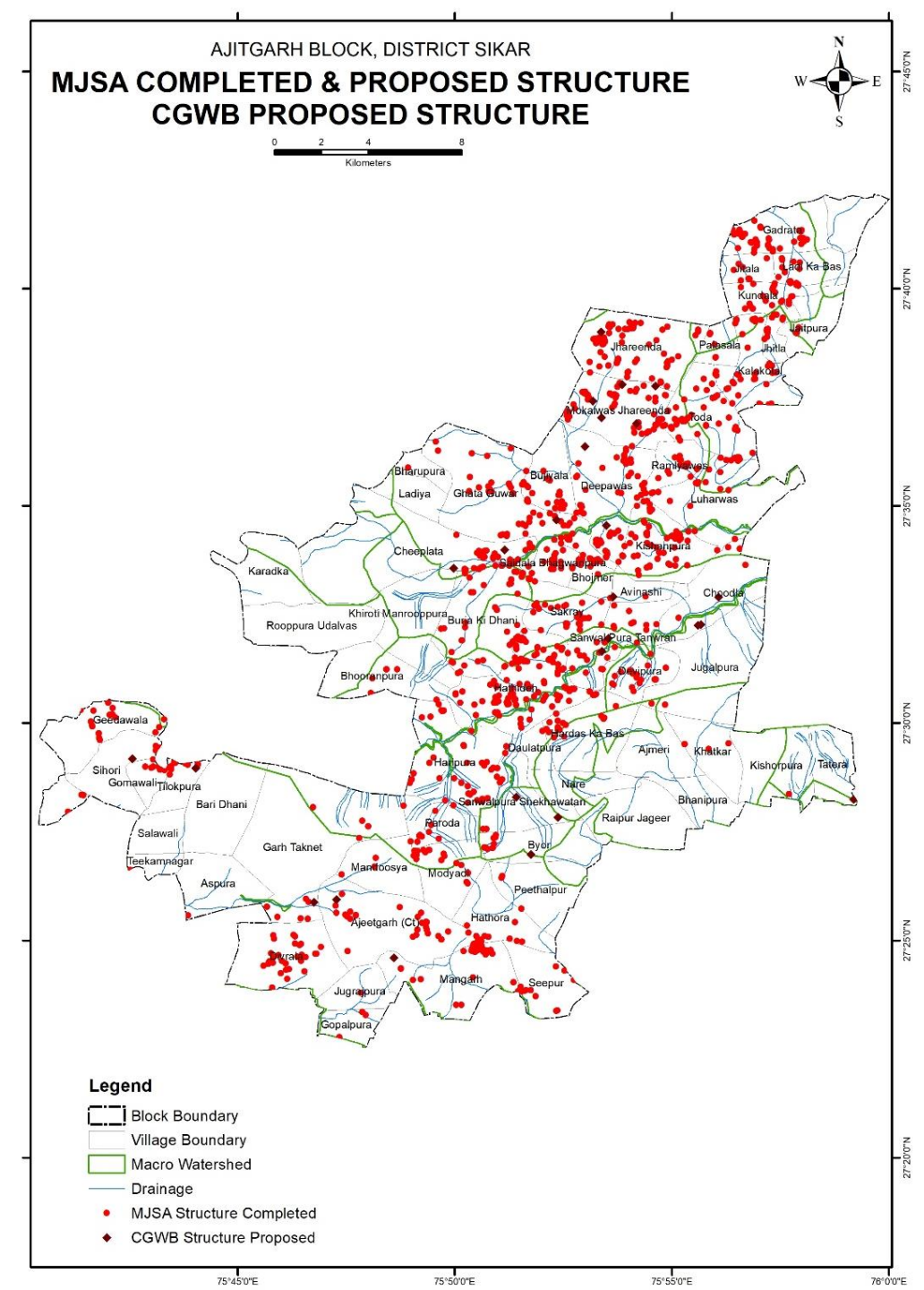
- **Sustainability :**

Wells were categorised (good, moderate and poor) based on

- yield (litres per day)
- depth to water level,
- depth to bedrock
- available saturated thickness

Based on distribution of wells, villages were categorised as good, moderate and poor

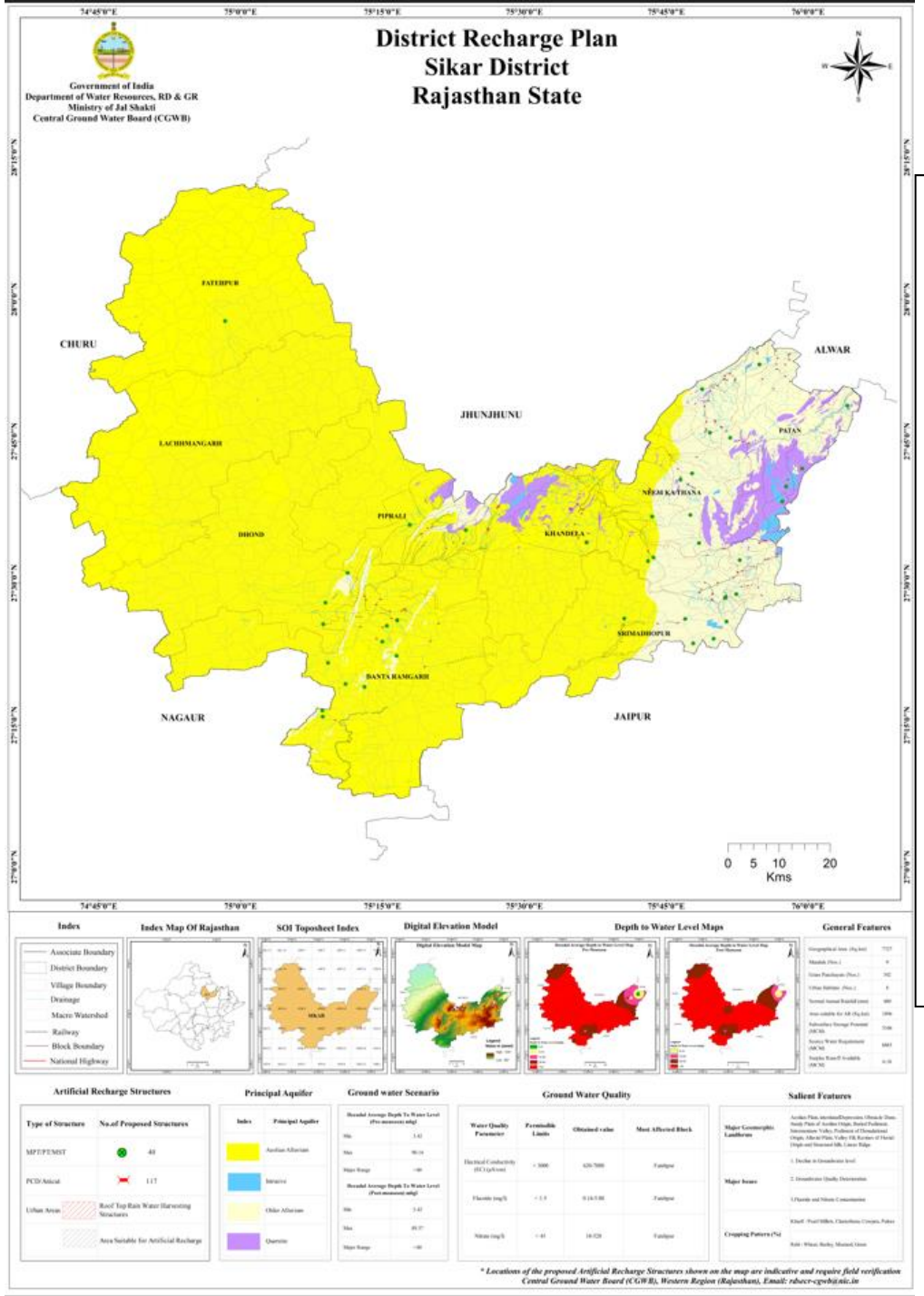
Sustainability	wells	villages
Good (sustainable, but interventions are required to ensure long term sustainability)	24	24
Moderate Moderate (sustainable with adequate interventions):	49	29
Poor (not sustainable, aquifer is of low potential)	55	15

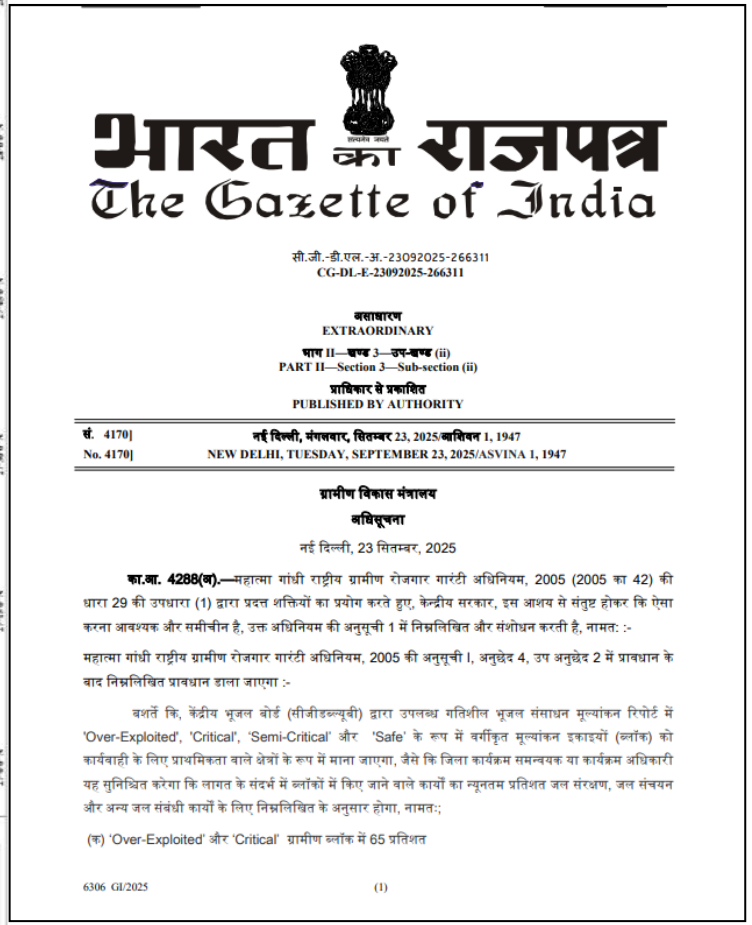


Recommended Interventions

- Non-committed run off available: 1.16 MCM (while the volume of unsaturated part is 428 MCM)
- Number of Existing Structures: - 1840
- New Structures proposed by State: 447
- New structures proposed by CGWB: 32 (28 field study, 4 heliborne surveys)- two are already constructed at Hathideh and Garh Taknet village under AR project Rajasthan Phase-II of Govt. of India.
- There is only limited scope for future artificial recharge intervention.
- **However, the traditional water bodies in the area are to be rejuvenated / renovated so as to achieve improved water storage capacity, ecological balance, sustainable management of local water resources and socio-economic benefits for the local community.**

CGWB's Recent Initiatives for Sustainable Management of Ground Water Resources





भारत का राजपत्र
The Gazette of India

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असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

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अधिसूचना

नई दिल्ली, 23 सितम्बर, 2025

का.आ. 4288(अ).—महात्मा गांधी राष्ट्रीय ग्रामीण रोजगार गारंटी अधिनियम, 2005 (2005 का 42) की धारा 29 की उपधारा (1) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, केन्द्रीय सरकार, इस आशय से संतुष्ट होकर कि ऐसा करना आवश्यक और समीचीन है, उक्त अधिनियम की अनुसूची 1 में निम्नलिखित और संशोधन करती है, नामत: :-

महात्मा गांधी राष्ट्रीय ग्रामीण रोजगार गारंटी अधिनियम, 2005 की अनुसूची I, अनुछेद 4, उप अनुछेद 2 में प्रावधान के बाद निम्नलिखित प्रावधान डाला जाएगा :-

बशर्ते कि, केंद्रीय भूजल बोर्ड (सीजीडब्ल्यूबी) द्वारा उपलब्ध गतिशील भूजल संसाधन मूल्यांकन रिपोर्ट में 'Over-Exploited', 'Critical', 'Semi-Critical' और 'Safe' के रूप में वर्गीकृत मूल्यांकन इकाइयों (ब्लॉक) को कार्यवाही के लिए प्राथमिकता वाले क्षेत्रों के रूप में माना जाएगा, जैसे कि जिला कार्यक्रम समन्वयक या कार्यक्रम अधिकारी यह सुनिश्चित करेगा कि लागत के संदर्भ में ब्लॉकों में किए जाने वाले कार्यों का न्यूनतम प्रतिशत जल संरक्षण, जल संचयन और अन्य जल संबंधी कार्यों के लिए निम्नलिखित के अनुसार होगा, नामत:;

(क) 'Over-Exploited' और 'Critical' ग्रामीण ब्लॉक में 65 प्रतिशत

6306 GI/2025 (1)

- **03 nos. of tailor made Trainings on Sources Sustainability have been organized for PHED officers in 2024.**
- **District recharge plan & Village level Aquifer recharge maps have been shared to DC/DM 29 nos. of OCS districts of the State.**

HOW A COMMUNITY CAN CONTRIBUTE?

Limit water consumption

- Use of sprinkler/drip irrigation.
- Choosing of water efficient equipment.

Maximise the use of sustainable water sources

- Use of grey water for flushing and gardening etc.
- Installation of RWH structures.

Cost-effective water infrastructure

- Increase Water Reuse through Wastewater Treatment Plant etc.

THANK YOU