

RAJASTHAN GROUNDWATER RECHARGE AND SUSTAINABILITY POLICY 2026 “Constituency Accountability for Water Security” (CAWS-Rajasthan)

Executor to the issue : Government of Rajasthan Department of Groundwater & Water Resources Effective

Prepared By : Vijay Singh Bainsla (9953786123 | bainsla@gmail.com)

1. PREAMBLE

Rajasthan is the most arid state in India, with 70 % of its blocks classified as over-exploited or critical as per the latest Central Ground Water Board (CGWB) Dynamic Groundwater Resources Assessment. Annual groundwater extraction exceeds recharge by more than 2.5 billion cubic metres in several regions.

To reverse this crisis, the State Government should adopt a **prudent and decisive approach: direct accountability on elected representatives (MLAs and MPs)** for measurable groundwater recharge in their respective constituencies.

This policy tasks every MLA and MP with **specific, time-bound recharge targets** for their constituency, backed by a transparent, quarterly, publicly accessible performance reporting system. The world will now be able to see and judge the efficiency of every elected representative on this life-critical deliverable.

2. VISION

Every constituency in Rajasthan becomes groundwater-positive by 2035, with elected representatives as the primary drivers of recharge works. This is in line with the Viksit Bharat agenda of 2047 set by the **Hon’ble Prime Minister of India – Shri Narendra Modi Ji**.

3. OBJECTIVES

1. Assign **legally notified annual recharge targets** to every MLA and MP in Rajasthan.
 2. Establish **scientific, verifiable metrics and measurement protocols** at constituency level.
 3. Create a **real-time, quarterly public dashboard** for performance ranking.
 4. Link performance to **incentives, additional funding and public recognition**.
 5. Ensure **third-party verification** and zero tolerance for data manipulation.
-

4. COVERAGE

- **200 Assembly Constituencies** (MLAs)
- **25 Parliamentary Constituencies** (MPs)
- Overlapping targets: MP targets = aggregate of all Assembly constituencies falling in their Lok Sabha seat (with 30 % weightage on MP-led initiatives).

5. TARGET SETTING & METRICS (Scientific & Constituency-Specific)

Baseline (2025-26) will be established using:

- CGWB 2024 assessment + Rajasthan Groundwater Department piezometer data (as on 31 March 2026).
- Satellite-based GRACE/GRACE-FO data + GIS mapping of each constituency.

Annual Recharge Target for each constituency

Target Volume (Million Cubic Metres – MCM) = Area (sq km) x Deficit Factor x 0.15
(where Deficit Factor is derived from stage of development % as per CGWB).

Key Performance Metrics (KPMs) – Weighted Score (100 points)

Metric	Weight	Measurement Unit	Data Source	Frequency
Volume of water recharged	40 %	MCM	Recharge structures + inflow-outflow calculation	Quarterly
Rise in groundwater table	25 %	Metres (pre- & post-monsoon average of 5+ piezometers)	State Groundwater Dept + CGWB	Quarterly
Number & capacity of new recharge structures	15 %	Structures & capacity in lakh cubic metres	Geo-tagged photos + DPRs	Monthly
Area brought under rainwater harvesting / watershed works	10 %	Hectares	Satellite + field verification	Quarterly
Reduction in over-exploited blocks within constituency	10 %	% Reduction	CGWB classification	Annual

Minimum Mandatory Target: Every constituency must achieve **at least 15 % improvement** in recharge over its 2025-26 baseline every financial year.

Note : GRACE and GRACE-FO data for Rajasthan provides monthly measurements of gravity anomalies to map total terrestrial water storage (TWS) changes, highlighting significant groundwater depletion in the region. The data, covering March 2002 to present, helps track groundwater levels, soil moisture, and surface water, identifying substantial declines (up to -1.22 cm/year in some analysis) often linked to intense agricultural irrigation and climatic factors.

6. ROLES & RESPONSIBILITIES

MLAs & MPs

- Personally responsible for achieving the notified target.
- Will chair **Constituency Groundwater Recharge Committee** (including District Collector, CEO Zila Parishad, Superintending Engineer – Groundwater, and 3 local NGOs).
- Must spend at least 30 % of their MPLAD/MLALAD funds on approved recharge works in the first two years.

District Administration

- Executive implementation arm.
- Monthly physical verification and geo-tagging of all works.

Rajasthan Groundwater Department

- Scientific target calculation, monitoring, and third-party audit coordination.

Independent Third-Party Agency (selected through transparent tender)

- Quarterly audit of reported data with random 20 % field checks.
-

7. MONITORING & QUARTERLY PERFORMANCE REPORTING (PUBLIC & TRANSPARENT)

Quarterly Performance Report (QPR) will be published **within 15 days** of the end of every quarter (June, September, December, March) on a dedicated public portal: it could be <https://rajasthanwater.gov.in/caws-dashboard> (sample link open ended)

Contents of QPR (for every constituency):

- Target vs Achievement (MCM & %)
- Scorecard (out of 100) with colour coding (Green ≥ 80 , Yellow 60-79, Red < 60)
- Ranking of all 200 MLAs + 25 MPs (State + District level)
- Geo-tagged photos of major works
- Independent auditor remarks

- Funds utilised vs sanctioned

The dashboard will be live 24x7 and accessible to citizens, media, researchers, and international agencies.

8. INCENTIVES & ACCOUNTABILITY

Positive Incentives (for top performers):

- Additional ₹5 crore constituency development grant (for Green category).
- State-level “Jal Puraskar” award with ₹10 lakh cash prize to MLA/MP.
- Priority in Central scheme funding (Jal Jeevan Mission, AMRUT, etc.).

Negative Measures (for consistent under-performance):

- Red category for two consecutive quarters → mandatory public explanation in Assembly/Parliament.
 - Red category for four consecutive quarters → 10-20% cut in next year’s MPLAD/MLALAD funds.
 - Persistent failure → name and performance placed before the Governor and Chief Minister for review.
-

9. IMPLEMENTATION TIMELINE (Back of the envelope timelines if implemented)

- **1 April – 30 June 2026:** Baseline notification & target letters issued to every MLA/MP.
 - **1 July 2026:** Policy goes live.
 - **Q1 2026-27:** First public dashboard launch.
 - **Annual Review:** By Chief Minister in July every year.
-

10. FUNDING

- ₹1,500 crore initial corpus (2026-27) from State Budget + convergence with VBGRAMG (MGNREGA), PMKSY, RIDF, and CSR. (*a negligible outlay for an extremely serious ground water recharge situation*)
 - Additional funds linked to performance (top 50 constituencies get bonus allocation).
-

11. LEGAL BACKING

This policy will be notified under the Rajasthan Groundwater (Conservation & Management) Act (amended) and will have the force of law. Non-compliance by elected representatives will be treated as dereliction of duty under the Representation of the People Act and relevant service rules.

Let the world watch. Let the people judge.

Every drop recharged will now carry the name of the MLA/MP who made it possible.

Designed By: **Vijay Singh Bainsla** : FY 2026–27.

9953786123 | bainsla@gmail.com

ANNEXURE – A

Logic for Annual Recharge Target Calculation (As per Rajasthan Groundwater Recharge and Sustainability Policy 2026 – Section 5)

The annual recharge target is designed to be **simple, transparent, scientifically grounded, scalable, and directly proportional** to two realities on the ground:

- The physical size of the constituency (larger area = larger target).
- The severity of the existing groundwater deficit (higher stress = higher target).

This ensures that every MLA and MP receives a **fair yet ambitious** target that reflects the actual hydrological condition of their constituency.

The Core Formula

Target Volume (Million Cubic Metres – MCM per year) = $A \times Df \times 0.15$

Where:

- A = Area of the constituency in square kilometres (sq km)
- Df = Deficit Factor (dimensionless, derived from CGWB data)
- 0.15 = Target Recharge Coefficient (equivalent to **150 mm** of additional recharge depth across the entire constituency area)

Why this formula is physically consistent (unit check)

- 1 sq km × 1 metre depth of water = **exactly 1 MCM**.
- Therefore, multiplying area (sq km) by 0.15 (metres) directly gives volume in MCM. Hence the formula is dimensionally perfect and requires no conversion factors.

Step-by-Step Derivation of Each Component

1. Area (A)

- Delineated using official GIS boundaries of all 200 Assembly Constituencies and 25 Parliamentary Constituencies (published by Election Commission of India and Rajasthan State Remote Sensing Application Centre).
- Boundaries are overlaid on the latest Rajasthan groundwater assessment maps to compute exact area in sq km.

2. Deficit Factor (Df) –

- The scientific heart of the target Deficit Factor is calculated strictly from the latest Central Ground Water Board (CGWB) Dynamic Groundwater

Resources Assessment (2024 data, updated annually). It is based on the Stage of Groundwater Development (SoD %), which is the standard national metric:

$$\text{SoD \%} = (\text{Annual Groundwater Extraction} / \text{Annual Extractable Groundwater Resource}) \times 100$$

Df is then derived as follows (weighted average across all blocks falling inside the constituency):

Category (as per CGWB)	SoD Range	Deficit Factor (Df) Formula	Rationale
Safe	≤ 70%	Df=0.10 (minimum floor)	Maintain sustainability even in good areas
Semi-critical / Critical	70% – 100%	Df = (SoD–70) / 100	Proportional to emerging stress
Over-exploited	> 100%	Df = {(SoD–70) / 100} + 0.20	Extra 20% weight for already critical zones

This structure ensures:

- Zero penalty for safe areas (only baseline effort required).
- Automatic escalation for stressed areas.
- Highest urgency for over-exploited constituencies (which cover ~70% of Rajasthan).

3. Target Recharge Coefficient (0.15)

- Represents **150 mm** (0.15 m) of additional recharge depth per year across the constituency.
- Why 150 mm?
 - It is **ambitious yet achievable** based on proven performance of existing schemes VBGRAMG (MGNREGA) watershed works, PMKSY-Har Khet Ko Pani, RIDF, check dams, percolation tanks, rooftop harvesting, etc.).
 - Typical recharge structures in Rajasthan deliver estimated average 100–200 mm equivalent recharge when implemented at scale.
 - A 150 mm annual target, sustained for 6–7 years, is sufficient to close most deficits and bring SoD below 70% in most blocks by 2032–33.
- The coefficient remains fixed at 0.15 for the entire policy period (unless revised by the State Groundwater Department on the basis of new CGWB data).

Additional Safeguards in Target Setting

- **Minimum 15% annual improvement rule** (mentioned in the policy): Irrespective of the formula, every constituency must show **at least 15% improvement** in actual recharged volume over its own previous year’s achievement (or 2025-26 baseline, whichever is higher). This acts as a performance floor.

- **Baseline year:** 2025-26 recharge volume is calculated using:
 - CGWB 2024 assessment (or whatever is relevant and measurable data available)
 - Rajasthan Groundwater Department's piezometer network (pre- and post-monsoon levels)
 - GRACE-FO satellite data for regional validation
 - GIS-weighted average for each constituency
- **Final notified target** for each MLA/MP will be issued in a single Government Order by beginning of July of 2026 (if agreed for implementation), with full transparency (formula inputs and outputs published on the CAWS dashboard).

Example Calculation (Hypothetical Constituency)

- Constituency area A = 4,200 sq km
- SoD = 142% (over-exploited)
- $Df = (142 - 70) / 100 + 0.20 = 0.92$
- Target Volume = $4,200 \times 0.92 \times 0.15 = 579.6 \text{ MCM per year}$

This target would be publicly displayed on the dashboard along with the exact SoD value and data sources used.

This methodology is **objective, verifiable, and non-manipulable** because every input (area, SoD %, piezometer data) comes from independent government or satellite sources. No subjective judgment is involved.

Another Quick Example (for comparison)

Constituency: Sadulshahar (Sri Ganganagar district – relatively better groundwater zone)

- Area (A) $\approx 2,400$ sq km
- SoD = 65% (Safe category) hence (Df floored at 0.10)
- Target = $2,400 \times 0.10 \times 0.15 = 36 \text{ MCM per year}$

Observation: Safe zones get lower (baseline) targets, while over-exploited zones get significantly higher targets - ensuring equity and urgency.

How Targets Will Be Notified for All 200+25 Constituencies

1. Rajasthan Groundwater Department will run the same formula for every assembly and parliamentary constituency using:
 - Exact GIS area
 - Block-wise SoD % (CGWB 2024/2025 data) → weighted average for the constituency
2. Final list with exact targets, SoD value, and data sources will be published on the **CAWS Dashboard** by 30 June 2026.

3. MP targets = Sum of all assembly constituencies in their Lok Sabha seat, with 30% additional weight for MP-led initiatives.

Why This Logic is Robust

- **Transparent & Objective:** Every number comes from official CGWB + GIS data. No discretion.
- **Fair:** Bigger + more stressed constituencies get higher targets.
- **Physically Sound:** 0.15 coefficient = 150 mm additional recharge depth (proven feasible in Rajasthan through large-scale watershed projects).
- **Motivating:** Combined with the mandatory **15% year-on-year improvement** rule.

Sample Ready-to-use Excel template for calculating the **Annual Groundwater Recharge Targets** as per the Rajasthan Groundwater Recharge and Sustainability Policy 2026.

Excel Template Structure

Column	Column Header	Description
A	Constituency_Name	Name of Assembly or Parliamentary Constituency
B	Type	MLA or MP
C	Area_sq_km	Area in square kilometres (from GIS)
D	SoD_Percent	Stage of Groundwater Development (%) from CGWB
E	Category	Safe / Semi-critical / Critical / Over-exploited
F	Deficit_Factor	Formula (auto-calculated)
G	Target_MCM	Annual Recharge Target in Million Cubic Metres (Formula)
H	Baseline_2025_26_MCM	Existing recharge volume in 2025-26 (for reference)
I	Min_15pct_Improvement_Target	Minimum target for next year (Formula)
J	Notes_Data_Source	CGWB year, remarks, etc.
K	GIS_Boundary_Year	Year of boundary data used
L	Calculated_On	Date of calculation

Sample Data

Constituency_Name	Type	Area_sq_km	SoD_Percent	Category	Deficit_Factor	Target_MCM	Baseline_2025_26_MCM	Min_15pct_Improvement_Target
Phulera	MLA	1850	118	Over-exploited	0.68	188.7	120	217
Sadulshahar	MLA	2400	65	Safe	0.1	36	25	41.4
Jodhpur Rural	MLA	3200	165	Over-exploited	1.15	552	380	634.8
Bikaner West	MLA	2800	92	Semi-critical	0.22	92.4	65	106.3