

### Categorization of Assessment Units based on the 'Stage of Ground Water Extraction'

Sl. No	Category	GWRA-2017		GWRA-2020		GWRA-2022		GWRA-2023	
		Number of AUs	% of AUs	Number of AUs	% of AUs	Number of AUs	% of AUs	Number of AUs	% of AUs
1	Safe	122	84	110	75	116	80	119	81.51
2	Semi-critical	22	15	27	18	24	16	22	15.07
3	Critical	2	1	9	6	6	4	5	3.42
4	Over-exploited								
5	Saline								
<b>Total number of AUs</b>		146		146		146		146	

#### Recommendations: -

The State is underlain by diverse rock types of different geological ages from Pre-Cambrian to Recent. 87% area of the State is underlain by hard rock. The Total Annual Ground Water Recharge of the State has been assessed as 13.34 bcm and Annual Extractable Ground Water Resource is 12.18 bcm. The Total Current Annual Ground Water Extraction is 5.75 bcm and Stage of Ground Water Extraction is 47.17 %. Out of 146 assessment units (blocks), 5 units (3.42 %) as 'Critical', 22 units (15.07 %) have been categorized as 'Semi-critical' and 119 units (81.51 %) as 'Safe' categories of assessment units.

More numbers of Water Harvesting and Conservation Structures may be constructed to catch the rain as the State is blessed with more than 1300 mm annual rainfall particularly in the hard rock terrain. State may also effectively use "Master plan for Artificial Recharge" prepared by CGWB in consultation with State Government. (<http://cgwb.gov.in/Master%20Plan%20to%20GW%20Recharge%202020.pdf>)

Development of springs and their catchment in hilly areas for their sustainability.

Restoration/rejuvenation of all the existing tanks should be taken up with the view of accommodating the available surface run off and thus augmentation of the ground water resources by artificial recharge. Periodical maintenance of these tanks is to be ensured. The "Manual on Artificial Recharge Techniques for augmentation of ground water" prepared by CGWB may be used for planning. (<http://cgwb.gov.in/documents/Manual%20on%20Artificial%20Recharge%20of%20Ground%20Water.pdf>).

National Aquifer Mapping & Management Programme (NAQUIM) Reports prepared by CGWB (<http://cgwb.gov.in/AQM/AQM-Reports.html>) which are also being shared with State/District Authorities and Ground Water Year Book published by CGWB having water level & water quality data may be used in Ground water management. ([http://cgwb.gov.in/Ground-Water/GW%20YEAR%20BOOK%202019-0%20ALL%20INDIA%20FINAL%20752021%20\(1\).pdf](http://cgwb.gov.in/Ground-Water/GW%20YEAR%20BOOK%202019-0%20ALL%20INDIA%20FINAL%20752021%20(1).pdf)).

Increase in irrigation efficiency through adopting of micro—irrigation techniques in more areas.

In the safe category areas of Chhattisgarh, State Government can judiciously develop the ground water resource mainly for agricultural use, however, at no point of time the extraction level should exceed 70%.

State may review their free/subsidized electricity policy to farmers (if applicable), bring suitable water pricing policy and may work further towards crop rotation/diversification/other initiatives to reduce overdependence on groundwater.

Creating awareness (Mass Awareness Campaign for public and farmers, slideshows, display boards on water conservation, Water Management Training Programme for personnel related with water sector, painting/elocution competition for school students etc.) regarding water conservation etc. may be organized at appropriate level.

Regulation & control of Ground water Extraction: Ministry of Jal Shakti has issued the guidelines for control and regulations of ground water extraction vide notification dated 24.09.2020 which has further been amended in March 2023. Concerned departments may ensure implementations of the guidelines.

For Further Information, Contact to :

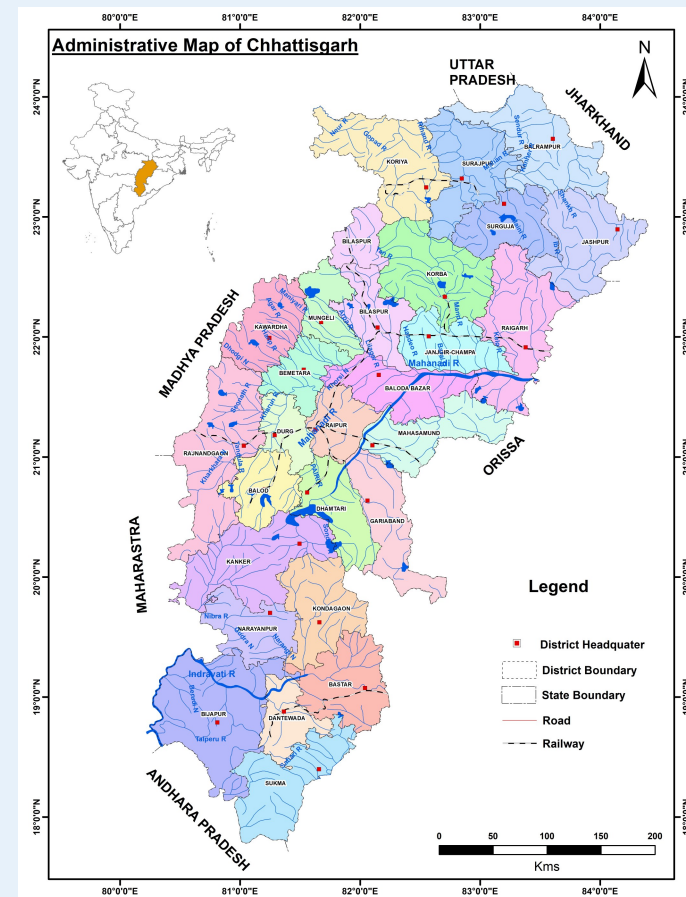
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## Central Ground Water Board Department of Water Resources, RD & GR Ministry of Jal Shakti, Government of India



## Dynamic Ground Water Resources, 2023 Chhattisgarh

January, 2024

## Background

- ◆ Ground Water Resources Assessment (GWRA)- jointly carried out by Central Ground Water Board and State Nodal/Ground Water Department periodically as per the Ground Water Resource Estimation Committee (GEC) methodology.
- ◆ Carried out under the guidance of the respective State/UT Level Committees (SLCs) and overall supervision of Central Level Expert Group (CLEG).
- ◆ As part of the assessment, 'Annual Extractable Ground Water Resource' as well as 'Annual Ground Water Extraction' are assessed for each assessment unit (Block).
- ◆ The 'Stage of Ground Water Extraction' is computed as the ratio of 'Annual Ground Water Extraction' with respect to 'Annual Extractable Ground Water Resource' and is usually expressed in percentage. Based on the stage of extraction, the assessment units are categorized as Safe ( $\leq 70\%$ ), Semi-Critical ( $>70\%$  and  $\leq 90\%$ ), Critical ( $>90\%$  and  $\leq 100\%$ ) and Over-Exploited ( $>100\%$ ).
- ◆ GWRA-2023, 2022 and 2020 has been carried out through a software/web-based application "INDIA-GROUNDWATER RESOURCE ESTIMATION SYSTEM (IN-GRES)" developed by CGWB through IIT-Hyderabad.

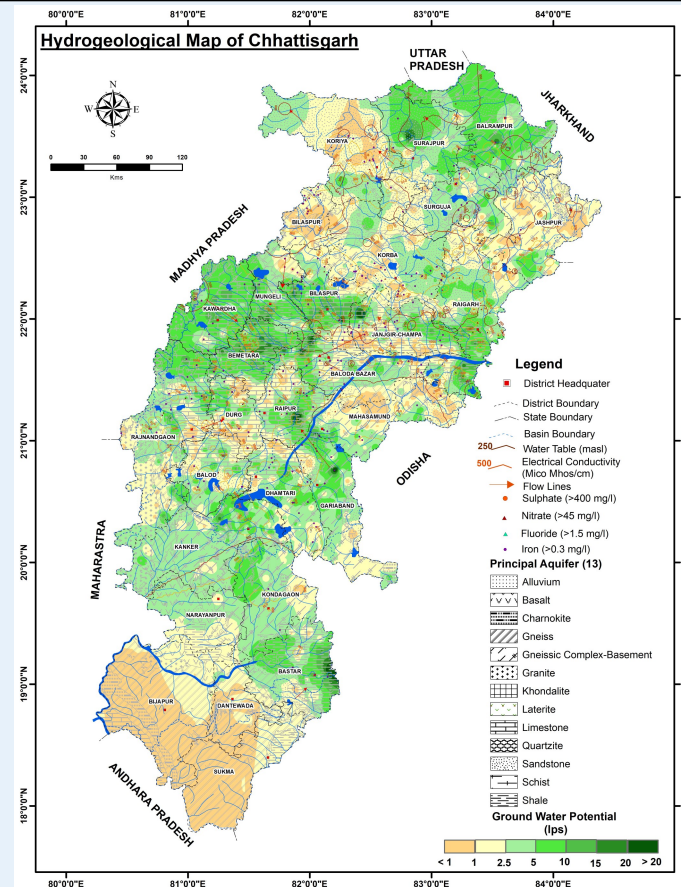
## Salient Features

1	Average Annual Rainfall	1309.6 mm
2	Hydrogeology	Nearly 87 % of the State is underlain by hard rocks. Rest of the State is underlain by semi-consolidated sedimentary formations.
3	Recharge Worthy Area of the State	106.08 Thousand Sq. Km
4	Assessment Unit (AU) Type / Number	Block / 146 Numbers
5	Average area of Assessment Unit	727 Sq. Km

## Findings

	Attribute	GWRA-2017	GWRA-2020	GWRA-2022	GWRA-2023
1	Total Annual Ground Water Recharge (in bcm)	11.57	12.65	12.04	13.34
2	Annual Extractable Ground Water Resources (in bcm)	10.57	11.55	11.01	12.18
3	Annual Ground Water Extraction (in bcm)	4.7	5.35	5.46	5.75
4	Stage of Ground Water Extraction (in %)	44.43	46.34	49.58	47.17

bcm: Billion Cubic Meters



Assessment year: 2022-2023

## CATEGORIZATION MAP OF CHHATTISGARH

