

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.

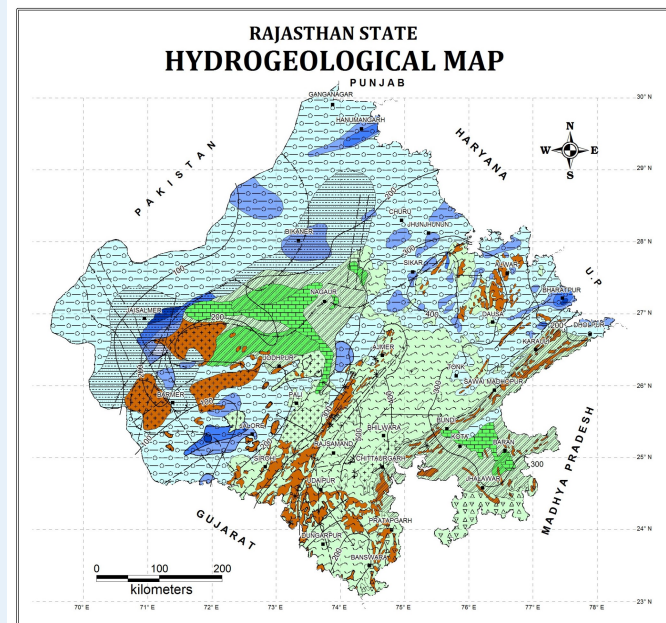
Salient Features

1	Average Annual Rainfall	587 mm
2	Hydrogeology	Diversified geology ranging from Archean metamorphic to recent alluvial sediments. Large part of the State is underlain by Quaternary sediments (Thar desert).
3	Recharge Worthy Area of the State	317.01 Thousand Sq. Km
4	Assessment Unit (AU) Type / Number	Block / 302 Numbers
5	Average area of Assessment Unit	1050 Sq. Km

Findings

	Attribute	GWRA-2017	GWRA-2020	GWRA-2022	GWRA-2023
1	Total Annual Ground Water Recharge (in bcm)	13.21	12.24	12.13	12.45
2	Annual Extractable Ground Water Resources (in bcm)	11.99	11.07	10.96	11.25
3	Annual Ground Water Extraction (in bcm)	16.77	16.63	16.56	16.74
4	Stage of Ground Water Extraction (in %)	139.88	150.22	151.07	148.77

bcm: Billion Cubic Meters



AGE	FORMATION	LITHOLOGY	AQUIFER DISPOSITION	GROUND WATER YIELD (L/HR)
QUATERNARY	UNCONSOLIDATED	Recent and Older Alluvium: Gravel, Sand, Silty, Clayey, concretions and Lithomarge clay	Fairly thick and discontinuous, regionally extensive, unconfined to confined aquifer down to 100 mgl	> 40
CENOZOIC, MESOZOIC	SEM-CONSOLIDATED	Sandstone, Shale with interstratified Limestone, Shale and Claystone, Lathi Formation, Sandstone, Shale	Thick discontinuous, unconfined to confined aquifers down to 500 mgl; Thick discontinuous unconfined to confined Lathi aquifer down to 440 mgl	25 - 40 10 - 25 + 10
	CONSOLIDATED			
CENOZOIC, MESOZOIC	EFFUSIVES	Basalt with or without intertrappan sediments	Discontinuous unconfined to confined aquifer down to 150 mgl restricted to fractures, vesicular zones and weathered mantle	5 - 25
UPPER PROTEROZOIC TO LOWER PALAEOZOIC	SEDIMENTARIES	Sandstone, Shale	Discontinuous unconfined to confined aquifer down to 375 mgl	
PROTEROZOIC, LOWER PALAEOZOIC	SEDIMENTARIES & META-SEDIMENTARIES	Limestone, Dolomite	Discontinuous unconfined to semi-confined aquifer down to 200 mgl restricted to cracks, fractures and weathered mantle	1 - 25
INTRUSIVES		Granite, Rhyolite	Discontinuous unconfined aquifer down to 80 mgl restricted to weathered mantle and fractures	
PROTEROZOIC, AZOIC	META-SEDIMENTARIES	Quartzite, Slate, Phyllite, Schist and Gneiss	Discontinuous unconfined to semi-confined aquifer down to 150 mgl restricted to fractures and weathered mantle	+ 1
	BASAL CRYSTALLINE COMPLEX			

GROUND WATER HYDROGEOLOGY
Water Table Contour (in a.m.l.)
Direction of Ground Water Flow

GROUND WATER HYDROGEOLOGY
Arifson Upright
Arifson Overturned
Syphon Upright
Syphon Overturned
Tectonic Zone Boundary
Unsettled

