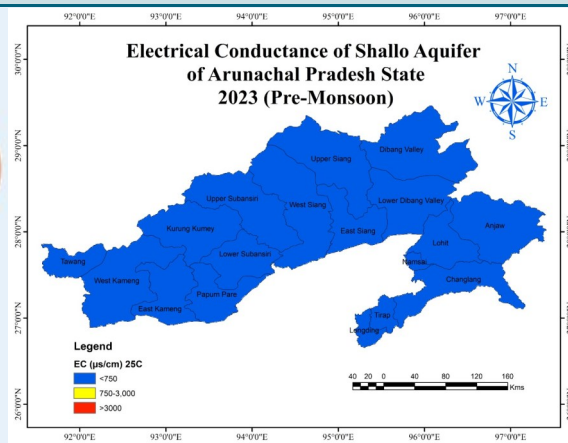


Groundwater Quality Scenario in Arunachal Pradesh

Parameters	No of samples	Permissible limit	No. of Samples above permissible limit	% Samples > permissible Limit
EC	12	3000 $\mu\text{S}/\text{cm}$	0	0
Fluoride	12	1.5 mg/L	0	0
Nitrate	12	45 mg/L	0	0
Arsenic	12	10 ppb	0	0
Uranium	12	30 ppb	0	0



Districts with anomalous values at sporadic locations

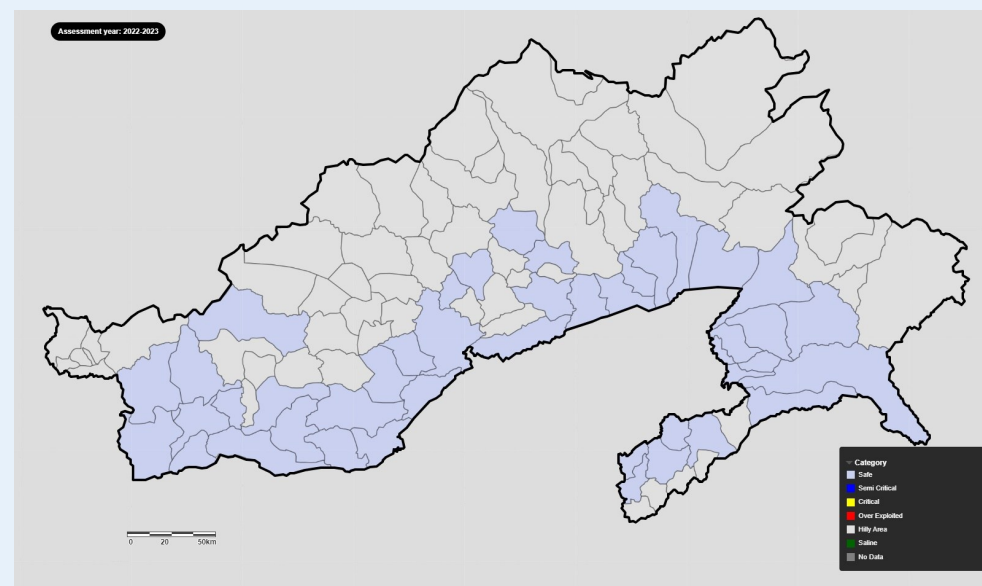
EC (3000 $\mu\text{S}/\text{cm}$)	Not Any
Fluoride (F > 1.5 mg/L)	Not Any
Nitrate (Nitrate > 45 mg/L)	Not Any
Arsenic (As > 10 ppb)	Not Any
Uranium (U > 30 ppb)	Not Any

For Further Information, Contact to :
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<https://ingres.iitb.ac.in>
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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 &
 Ground Water Quality of Arunachal Pradesh, 2024

December, 2024

Groundwater Resource Scenario in Arunachal Pradesh

- ◆ 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-2024, 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	Rainfall	3,293.25 mm
2	Hydrogeology	Major area is covered with consolidated crystalline rocks and meta-sediments of Precambrian and Palaeozoic age, while Tertiary sediments consist of semi-consolidated argillaceous assemblage.
3	Recharge Worthy Area of the State	5.72 Thousand Sq. Km
4	Assessment Unit (AU) Type / Number	Block / 42 Numbers
5	Average area of Assessment Unit	136.22 Sq. Km

Findings

	Attribute	GWRA-2017	GWRA-2020	GWRA-2022	GWRA-2023	GWRA-2024
1	Total Annual Ground Water Recharge (in bcm)	3.02	3.19	4.52	4.65	3.88
2	Annual Extractable Ground Water Resources (in bcm)	2.67	2.92	4.07	4.16	3.46
3	Annual Ground Water Extraction (in bcm)	0.01	0.01	0.03	0.02	0.01
4	Stage of Ground Water Extraction (in %)	0.28	0.36	0.79	0.42	0.39

bcm: Billion Cubic Meters

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

Sl. No	Category	GWRA-2017		GWRA-2020		GWRA-2022		GWRA-2023		GWRA-2024	
		Number of AUs	% of AUs	Number of AUs	% of AUs	Number of AUs	% of AUs	Number of AUs	% of AUs	Number of AUs	% of AUs
1	Safe	11	100	11	100	11	100	42	100	42	100
2	Semi-critical										
3	Critical										
4	Over-exploited										
5	Saline										
Total number of AUs		11		11		11		42		42	

Recommendations

- * The state of Arunachal Pradesh is underlain by diverse rock types of different geological ages from Pre-Cambrian to Recent. Major part of the state is covered with consolidated crystalline rocks and meta-sediments of Precambrian and Palaeozoic age, while Tertiary sediments consisting of semiconsolidated argillaceous assemblage, represented by the Disang, Barail, Tipam, Siwalik and Dihing groups of rock, occupy periphery areas bordering Assam and behave as run-off and in select patches functions as infiltration zone. In consolidated formations, ground water potential appears to be limited. Semi-consolidated Tertiary formations are likely to give moderate or poor yield and expected to be controlled by aquifer geometry and structural features. Ground water in both consolidated and semi-consolidated formations also manifests as springs and in all geological formations springs occur as both seasonal and perennial in nature.
- * The Total Annual Groundwater Recharge of the State has been estimated as 3.88 bcm and Annual Extractable Groundwater Resources is 3.46 bcm. The Current Annual Ground Water Extraction for all uses is 0.013 bcm and Stage of Ground Water Extraction is 0.39 %.
- * All the assessment units are in safe category as well as future allocation of ground water is also sufficient, State Government can judiciously develop the ground water resource mainly for agricultural use.
- * Development of Springs and their catchment in hilly areas.
- * National Aquifer Mapping & Management Programme (NAQUIM) Reports prepared by CGWB (<https://cgwb.gov.in/cgwbpm/>) which are 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. (<https://cgwb.gov.in/cgwbpm/>).
- * 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.