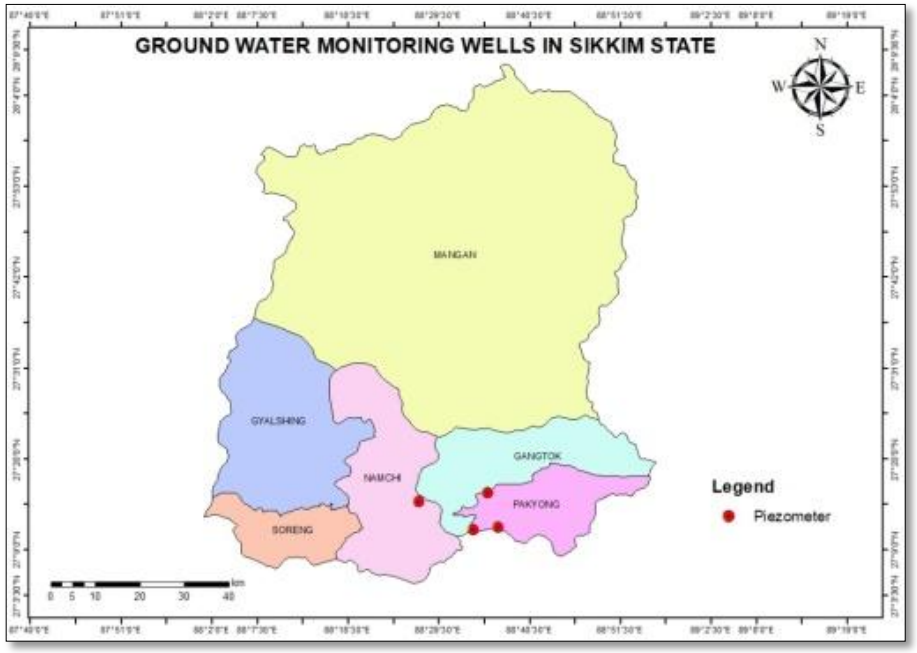

GROUND WATER LEVEL BULLETIN

August 2025

SIKKIM

ABSTRACT

Present Bulletin is prepared on ground water scenario of Sikkim state highlighting the rainfall pattern, status of ground water level during August, 2025.

CGWB, Eastern Region Kolkata

1.0 INTRODUCTION

Groundwater level bulletin is prepared by Central Ground Water Board (CGWB) depicting changes in groundwater regime of the country through different seasons. It is an effort to obtain information on groundwater levels through representative monitoring wells. The important attributes of groundwater regime monitoring are groundwater level.

Groundwater levels are being measured by CGWB, ER every month in Sikkim state (through Participatory monitoring since June, 2024).

2.0 STUDY AREA

The Eastern Region of Central Ground Water Board has jurisdiction over the State of West Bengal having an area of 88752 km^2, Andaman & Nicobar Islands (UT) having an area of 8,249 sq. km. (Andaman-6408 sq. km., Nicobar-1841 sq. km.) and Sikkim (7096 sq.km.).

The state of Sikkim is located in the North Eastern part of the Country and lies between 27° 04' - 28° 08' N latitude 88° 00' to 88° 54' E longitudes covering an area of 7096 sq. Km; divided into 06 districts namely, Gangtok and Pakyong (East Districts), Gyalshing and Soreng (West Districts), Mangan (North District) and Namchi, (South District). Sikkim with a vertical strip of rugged mountainous terrain of roughly 65 to 100 kms broad and 170 kms deep has the second highest peak of the world, the mountain Kanchendzonga (figure-1). The attitude varies from 300 meters in low areas to 8500 metres in highland. The plain area is very small, limited to the intermontane valley. Two-third of the state consist largely snow clad high hills with deep ravines/gorges. About 30% of the state is forest covered.

Figure- 1: Administrative Map of Sikkim State

3.0 GROUND WATER LEVEL MONITORING

Central Ground Water Board, Eastern Region, has set up 04 Ground Water Monitoring Stations (GWMS) (04 PZ) in Sikkim State as on 31-03-205 (figure-2).

The district-wise breakup of the water level monitoring stations is given in Table-1.

Table-1: District-wise distribution of water level monitoring stations in Sikkim

Sl. No	Name of the District	Number of GW Monitoring Stations				
		Dug Well	Piezometer	Handpump	Spring	Total
Sikkim						
1	Namchi	0	1	0	0	1
2	Pakyong	0	3	0	0	3
	Total	**0**	**4**	**0**	**0**	**4**

Figure-2: Map showing locations of monitoring wells (GWMS) in Sikkim

4.0 RAIN FALL

District-wise actual monsoon rainfall is given in the Table-2. The rainfall distribution over Sikkim during monsoon season is depicted in Fig. 3 & 4. The actual seasonal mean rainfall of the state is 1261.2 mm. In monsoon, Namchi district received 41% higher rainfall compared to Normal Rainfall. While other districts received 14% to 37% lesser rainfall compared to normal rainfall.

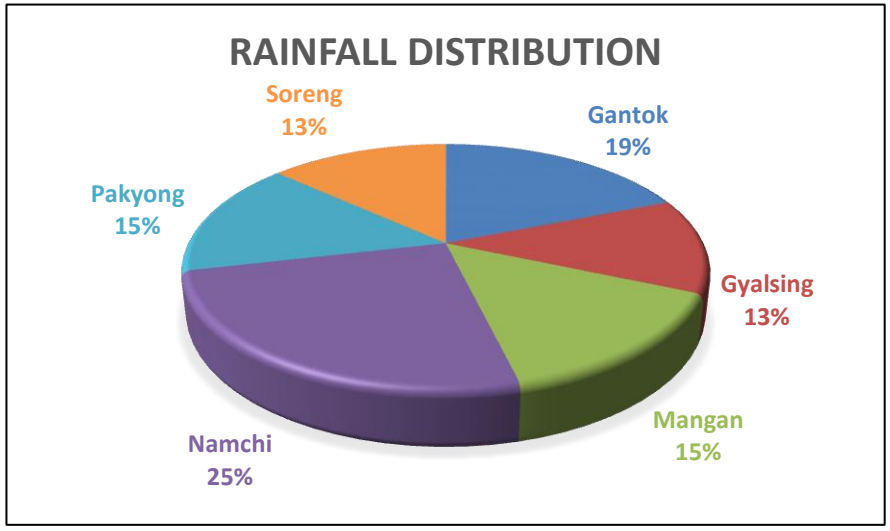

Figure-3: Pie diagram of rainfall distribution over the Sikkim state during June to August 2025

Table-2 Actual Rainfall Distribution in Sikkim during June-August 2025

Sl No.	District	Actual Rainfall (mm)	Normal Rainfall (mm)	% Dep. From niormal
1	Gangtok	1434.6	1819.4	-21
2	Gyalsing	948.7	1498.7	-37
3	Mangan	1111.6	1280.7	-13
4	Namchi	1907.8	1351.1	+41
5	Pakyong	1158.6	1342	-14
6	Soreng	1006.0	1498.7	-33

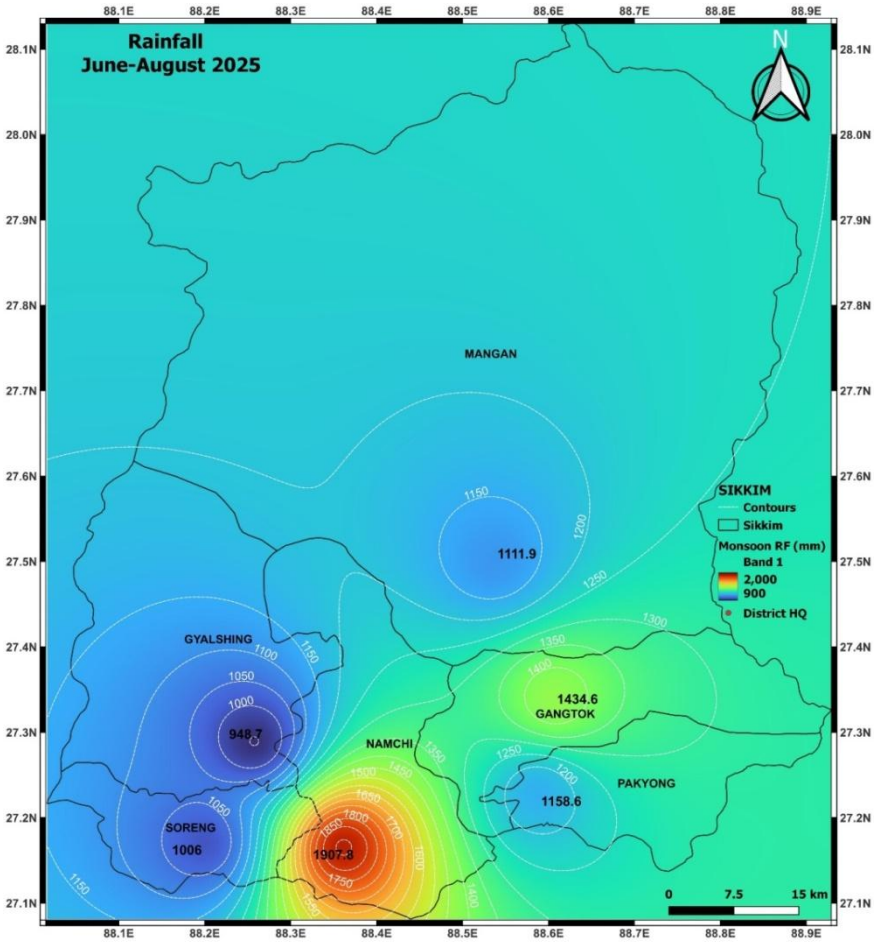

Figure-4: Seasonal Rainfall distribution over the Sikkim during June-August 2025

5.0 GROUND WATER LEVEL SCENARIO (AUGUST 2025) for SIKKIM

During April-2023, 04 nos. of Piezometers (PZ) has been established for monitoring purpose in Sikkim State for the first time. In the year 2023, the water level has been monitored for Pre & Post-Monsoon 2023. The wells have been taken for participatory monitoring every month since June, 2024 for strengthening of monitoring Network in the State.

As for August, 2025 monitoring is considered, since the established piezometers in Sikkim state for which the monitoring is carried out during August 2025 **represents confined aquifers, hence the data representing groundwater level of unconfined aquifers is not available. Thus, the groundwater scenario for unconfined aquifers cannot be assessed for the State.**

6.0 SUMMARY

As a component of the National Ground Water Monitoring Programme, CGWB, ER, Kolkata conducts ground water monitoring every month in Sikkim (through Participatory monitoring since June, 2024).

As on March 2025, the Eastern Region, Kolkata has 04 monitoring stations in the state of Sikkim. The state receives good rainfall and about 72% of springs get recharge through rainfall.

All district received less rainfall during monsoon period of 2025 except Namchi.

In the state of Sikkim only 4 wells are being monitored representing confined aquifer, the groundwater level scenario for unconfined aquifers cannot be accessed.

Overall the State falls in the ‘Safe’ category as per Ground water Resource Assessment-2023-24.

7.0 RECOMMENDATIONS

Sikkim's water supply predominantly relies on spring-based systems**,** which serve as a critical lifeline for both rural and urban communities. These springs, however, are highly sensitive to seasonal variations and increasingly vulnerable to the impacts of climate change, including erratic rainfall and rising temperatures. The absence of data on unconfined aquifers significantly restricts the assessment of shallow aquifers, making it difficult to suggest management strategies specifically for shallow aquifers. However, few recommendations have been proposed, as listed below:

- Springshed development with piped water supply should be integrated in village level.
- Recharge structures such as roof top rainwater harvesting in villages/towns and contour bunding as well as contour trenches in feasible areas may be recommended in water scarce areas.

आज़ादी का अमृत महोत्सव

CONSERVE WATER FOR FUTURE

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