Monitoring Groundwater Level Fluctuation and Safe Utilization of Groundwater in Different Geo-Hydrological Regions

Objectives

- To determine fluctuation of groundwater level over time

Methodology:

The study was conducted at BRRI farm, Gazipur, Habiganj, Barishal, Rajshahi, Rangpur, Bhanga, Gopalganj, Sonagazi, Cumilla and Kushtia. Available water level recorder was used for measuring groundwater fluctuation. Data were recorded weekly. Collected weekly records were calculated to obtain monthly average.

Groundwater level in Gazipur

In Gazipur, during 2023-24 period, maximum lowering of groundwater (-50.16 m) was observed in March and minimum (-49.55 m)) in July. where the fluctuation was more than 0.61 m.

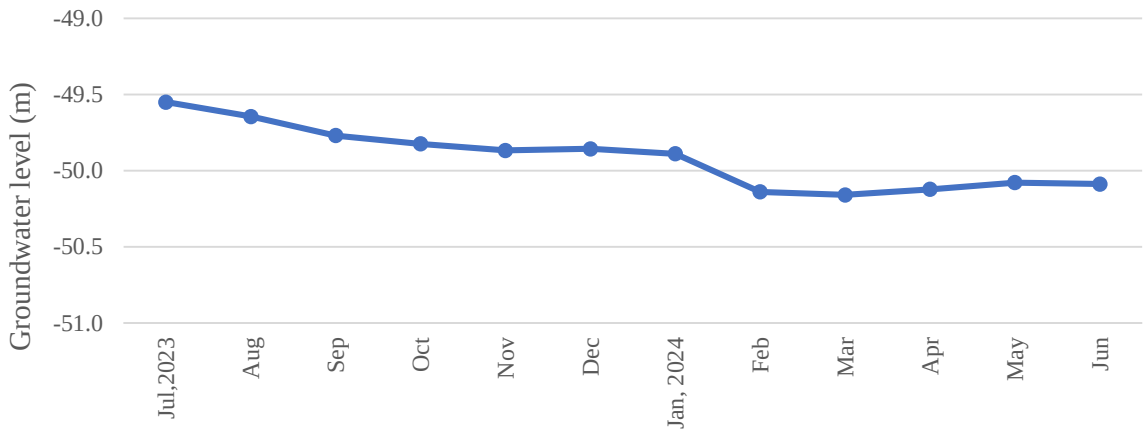

Fig. Fluctuation of groundwater level at BRRI farm, Gazipur during 2023-24.

In 1998, the minimum groundwater level was about 5.23 m below the ground surface, which was 50.16 m in 2024. Therefore, the lowering was about 45 m in 26 years. During the initial five years (1998-2002) the lowering (3.8 m) was not so high, but during the last five years (2019-2024) the lowering was about 5.26 m.

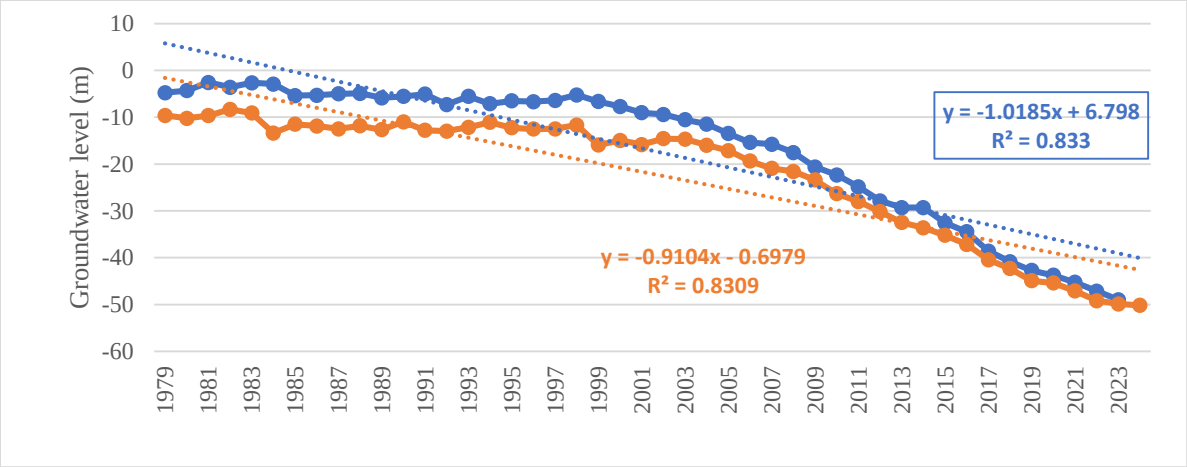

Fig. Declination of groundwater level at BRRI farm, Gazipur during 1998-2024

Groundwater level in BRRI regional stations

Among the BRRI regional stations, the groundwater level was below the suction limit (> 8 m) during Boro season in Cumilla, Rajshahi, Kushtia and Habiganj.

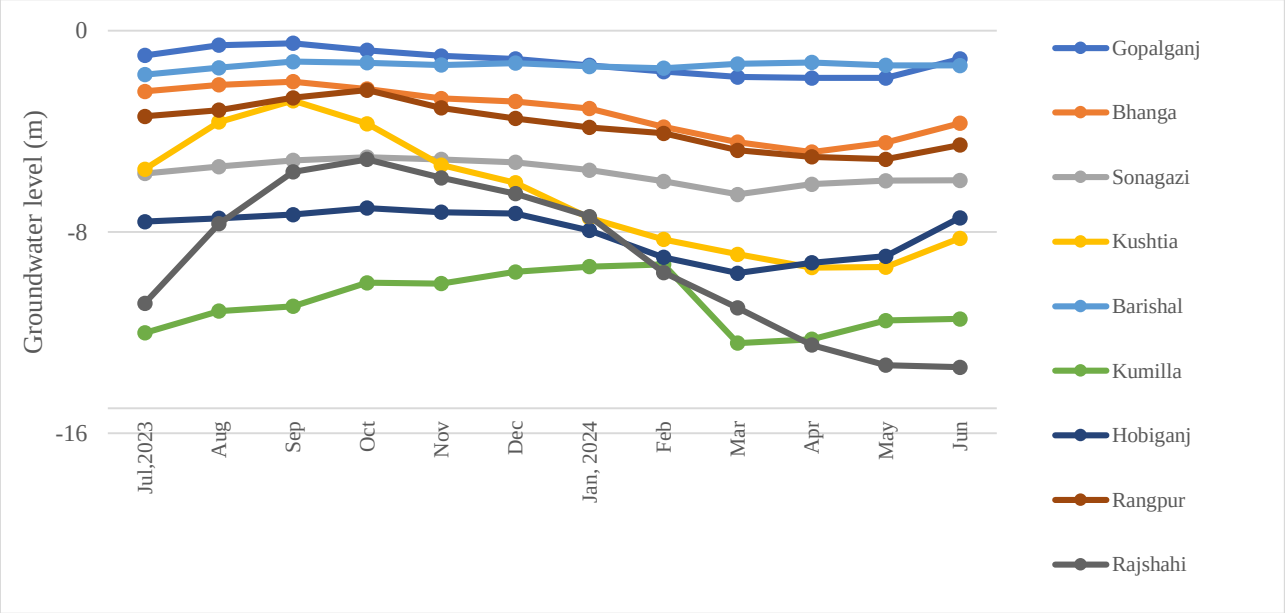

Fig. Groundwater level of BRRI regional station during 2023-24.

Conclusion

Groundwater level at BRRI farm Gazipur is declining day by day and it was not fully recharged after the monsoon. Declination of groundwater in Gazipur is very alarming.