

## Monitoring of groundwater fluctuation and safe utilization in different geo-hydrological regions

In this study, available water level recorder was used for measuring groundwater fluctuation in BRRI Gazipur and all regional stations. Data were recorded weekly. Collected weekly records were calculated to obtain monthly average. In Gazipur, during 2022-23 period, maximum lowering of groundwater (-49.4 m) was observed in January and minimum (-47.4 m) in July (Fig. 1). The fluctuation was more than 2.0 m. The fluctuation was higher than the previous year. In 1998, the minimum groundwater level was about 5.23 m below the ground surface which was 49.4 m in 2023 (Fig. 2). Therefore, the lowering was about 44.17 m in 25 years. During the initial five years (1998-2002) the lowering (3.8 m) was not so high, but during the last five years (2019-2023) the lowering was about 5.18 m.

Monthly groundwater level of BRRI regional stations is presented in Fig 3. Among 10 regional stations, the groundwater level was below the suction limit ( $> 8$  m) during Boro season in Kumilla, Rajshahi and Habiganj.

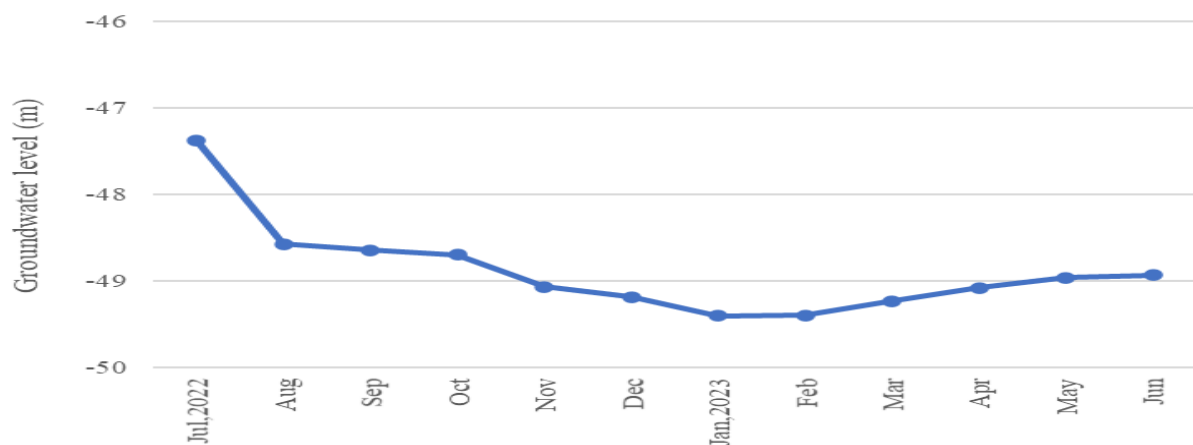


Fig. 1. GW fluctuation (2022-23) at BRRI farm Gazipur.

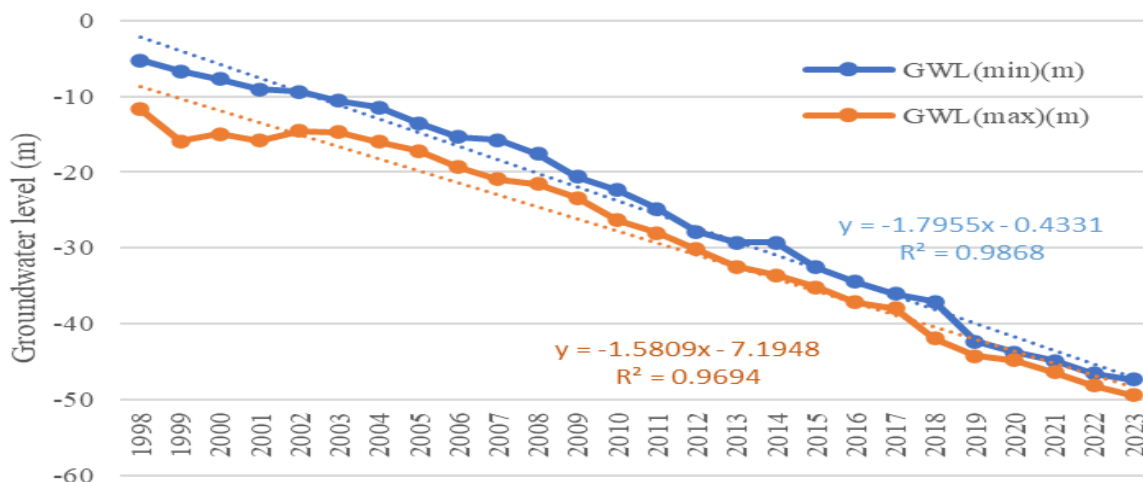


Fig. 2. Long-term GW declination (1998-2023) at BRRI farm Gazipur.

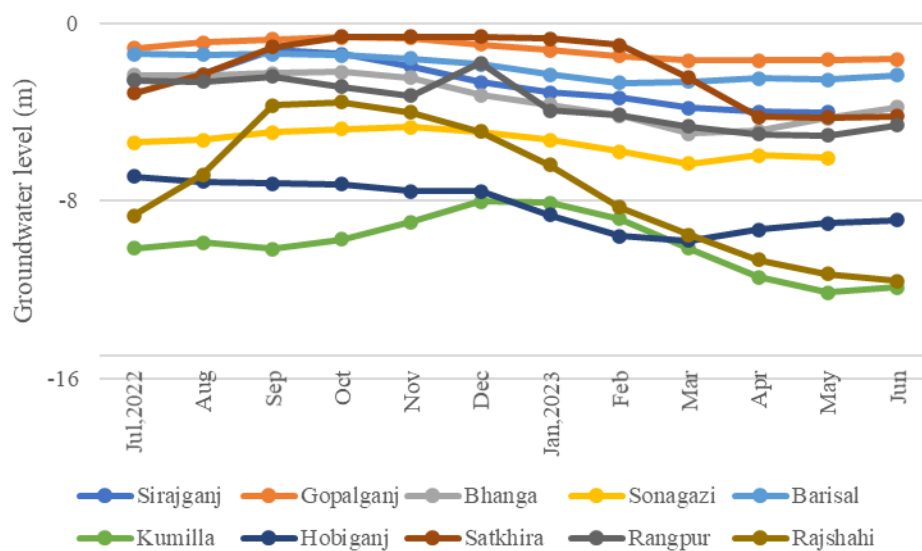


Fig. 3. Yearly GW level fluctuation at different BRRI R/S during 2022-23.

**Source: Irrigation and Water Management Division, BRRI**