Food and Agriculture Organization of the United Nations

SWALIM
Somali Water and Land Information Management

SOMALIA GROUNDWATER STATUS UPDATE

Issued on 23 December 2025

Overview

Groundwater is the most dependable and widely used water source in Somalia, serving both urban and rural communities including pastoralists and productive sectors throughout the year, especially during dry spells when surface water sources diminish. The shallow aquifers mainly depend on recharge from rainfall, while deep aquifers can also be replenished by rainfall. This makes the groundwater resources highly vulnerable to climate variability and recurrent droughts. They also face the risk of over abstraction to meet increasing demand. Continuous monitoring of groundwater levels and quality is therefore essential for understanding aquifer behavior and detecting early signs of depletion for informed decisions on humanitarian responses and long-term water resource planning.

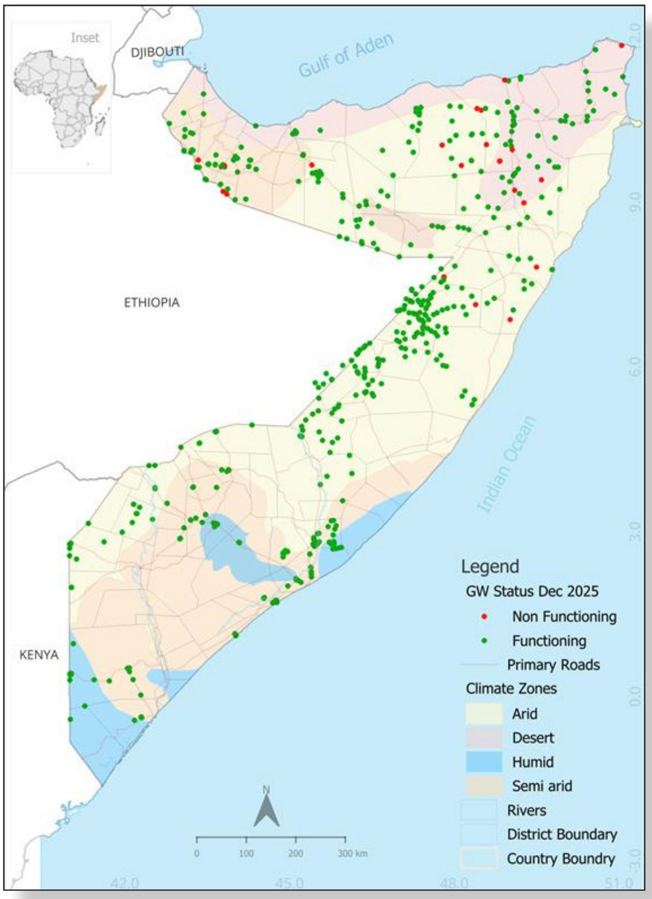
This update provides an analysis of the current status of groundwater across Somalia based on the established weekly monitoring of 609 strategic boreholes and 40 telemetric groundwater stations.

Key Highlights

- Strategic water sources provide a reliable water supply across Somalia, fulfilling the needs for domestic use, Livestock, and irrigation, particularly during dry periods when surface water sources are diminished.
- During the dry spells of 2024–2025, aquifers declined in many areas, especially in Arabsiyo in the Waqooyi Galbeed region, Baran, and Dhahar in the Sanaag region, and Harfo in the Mudug region.
- Some borehole recoveries occurred aligned with Deyr 2024 and Gu 2025 rainfall seasons, especially in Borama in Awdal region, Baran in Sanaag region, Mareergur in Galguduud region, and Sheikh in Togdheer region, indicating high dependence on seasonal recharge.
- Conductivity trends closely followed water-level behavior, with increased mineral concentration during depletion and reduction during the recharge period, especially in Borama, Oog, Mareergur, and Dhahar.
- Stable aquifer conditions were observed in Qoraxaad and Bossaso in the Bari region, Barawe in the Lower Shabelle region, and Cawsane in the Sanaag region, were showed minimal seasonal variation in both water levels and conductivity was observed.
- Highly saline aquifers were determined in Oodweyne and Galkayo boreholes, possibly driven by lithological compositions rather than seasonal changes.

It includes a time series analysis of monthly groundwater level trends and conductivities from 40 remotely monitored boreholes, where data are recorded hourly through telemetric monitoring systems and transmitted via satellite. It also incorporates information from 609 strategic boreholes monitored weekly by the borehole operators through coordination by the Ministry of Energy and Water Resources at the FMS level.

Picture 1: Ground water station in Sanaag, Somalia

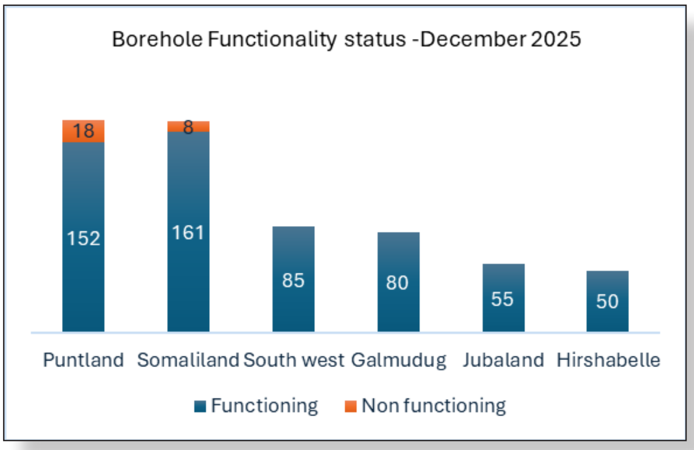


Map 1: Status of groundwater monitoring stations, December 2025

- As at December 2025 most of the boreholes monitored in south central states were fully functioning, while in Somaliland and Puntland the functionality levels were 95% and 89% respectively. The main source of failure has been linked to pump, power and riser pipe issues.
- The highest water prices were observed in Jubaland, between 0.7 - 1 USD, whereas Galmudug had the lowest and most stable values, ranging from 0.18 to 0.20 USD per barrel
- Continuous groundwater monitoring is crucial for early detection of depletion, assessing functionality, guiding timely rehabilitation of water infrastructures, and supporting evidence-based responses and long-term water resource planning

Weekly Borehole Monitoring

A weekly strategic water sources monitoring is carried out by FAO-SWALIM in collaboration with the Somalia state water authorities to assess their operational status. In December 2025, the results indicated that most of the 609 strategic boreholes monitored across the country stayed operational. In Puntland, 152 out of 170 boreholes were functioning, representing 89%, while 11% were not operational. In Somaliland, 160 out of 169 boreholes were functioning, representing a 95% functionality rate, and 5% were not, primarily caused by pump failures, power supply problems, and main riser pipe issues. In the southern states, including Galmudug, Southwest, Jubaland, and Hirshabelle, the monitored water sources were 100% operational in December 2025. This ensured permanent water availability and a stable supply for both rural and urban populations, including pastoral communities that depend widely on groundwater during dry spells.



Graph 1: Functionality of the boreholes being monitored

Overall, weekly water source monitoring is vital for evaluating each source's condition, production yields, pumping hours, reasons for non-functioning, and required interventions. This routine activity enables stakeholders to act quickly, plan responses efficiently, and ensure continuous access to groundwater in regions most at risk of water shortages.

Reasons for Non-Functionality

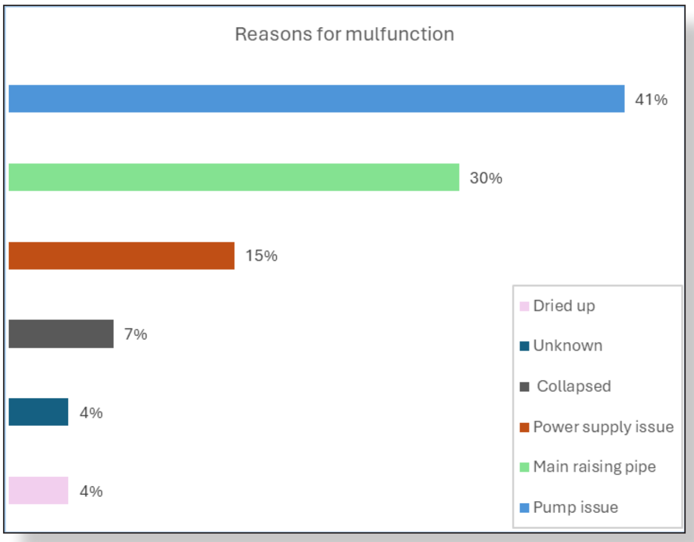
Graph 2 shows the main causes of non-functioning strategic water sources across Somalia. In December 2025, 26 boreholes were not functioning out of the 609 weekly monitored water sources. Pump failure and main riser pipe issues are the leading causes, accounting for 41% and 30% respectively, followed by power supply issues at 15%, which are mostly linked to malfunctioning generators and solar systems. Borehole collapse for 7% and borehole dry-up represent 4% of the failures.

All 27 non-functioning boreholes are in Puntland and Somaliland, while the south-central states, including Galmudug, Southwest, Hirshabelle, and Jubaland, report 100% functionality. The users of Non-functional boreholes place additional pressure on nearby functional water points by increasing abstraction rates and then accelerating drawdown trends. At the same time, groundwater decline has already been observed at telemetric groundwater stations in some stations in Puntland and Somaliland.

These operational failures are occurring at a time when the 2025 Deyr rainfall has been below normal, limiting seasonal recharge and reducing the natural replenishment needed to stabilize groundwater levels.

The current drought conditions exacerbate and increase dependence on groundwater for domestic use, livestock, and irrigation; aquifer systems are under pressure.

When boreholes malfunction during a below-average rainfall season, the remaining water sources support higher pumping loads for longer periods, which not only deepens the drawdown but also raises the risk of mechanical failure due to overuse. Without quick repair of pump and power issues and timely rehabilitation of structurally damaged boreholes, the affected areas may face increased water stress as the country enters the dry Jilaal season, when groundwater demand peaks and recharge opportunities are limited.



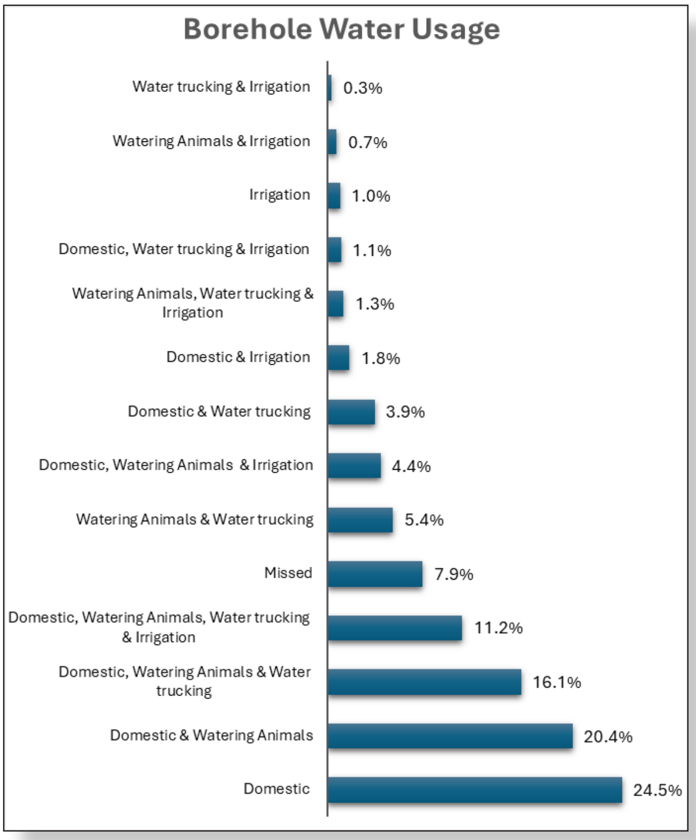
Graph 2: Reasons for non-functionality of boreholes

Water Usage

Graph 3 shows that the strategic water sources across Somalia are primarily used for domestic water supply, which makes up 24.5% of total water usage, highlighting groundwater as the main source for drinking, cooking, and household needs. This is followed by domestic and livestock watering at 20.4%, showing the link between human consumption and pastoralists. Boreholes serving domestic use, livestock, and water trucking represent 16.1%, while those serving all four uses of domestic, livestock watering, water trucking, and irrigation represent 11.2%. This indicates that strategic water sources are under a lot of demand from different sectors.

Other uses include watering animals and water trucking (5.4%), domestic livestock, and irrigation (4.4%), and domestic with water trucking (3.9%), Smaller proportions are used for domestic and irrigation (1.8%), livestock, water trucking, and irrigation (1.3%), domestic, water trucking, and irrigation (1.1%), irrigation only (1%), livestock and irrigation (0.7%), and water trucking with irrigation (0.3%). Unspecified uses make up 7.9%.

Generally, the strategic water usage majority serves multiple competing uses, making it highly vulnerable to overuse, especially during dry spells, when dependence on groundwater increases among different users.



Graph 3: Borehole water usage

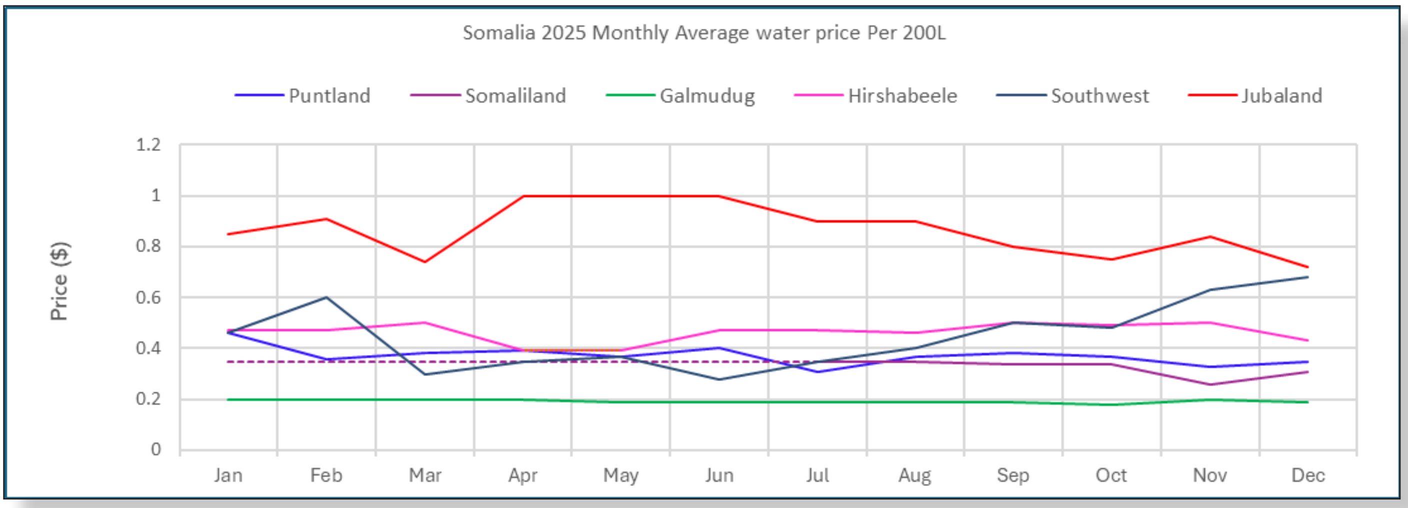
Water Price

Graph 4 shows how the price for 200 liters of water changed from January to December in 2025 across different states in Somalia. Jubaland has the highest prices, beginning around $0.85 in January and increasing slightly to about $ 1 by April, May, and June, but it remained the most expensive region throughout the year. Hirshabelle and Southwest fluctuate a bit, in Hirshabelle water price started $0.47 and reached the highest price $0.50.

Southwest state, the water price started $ 0.46 in January and increased in February, reaching $ 0.6, then slightly decreased until reaching $ 0.28 in June, then again rose gradually until reaching $ 0.68 in December 2025. While in Somaliland, the monitored restarted in July 2025, and the price was $0.35, and almost price was almost stable at around $0.35 to 0.31.

Puntland was mostly steady, with prices only changing slightly between $0.31 and $0.46 from lowest to highest price. Galmudug state has the lowest prices throughout the year, staying nearly flat at around $0.18 to $0.20, from the lowest to the highest price.

In April, most states, the price has dropped a bit except in Jubaland, aligned with the Gu 2025 rains starting, and surface water became available, so people do not buy as much. After April 2025, the price slowly rose again in Somaliland and Hirshabelle states. Overall, each state has a different situation: Jubaland and Southwest are high, Hirshabelle and Puntland are moderate, Somaliland is relatively stable, and Galmudug is always the lowest.



Graph 4: Somalia 2025 Monthly Average water price Per 200L

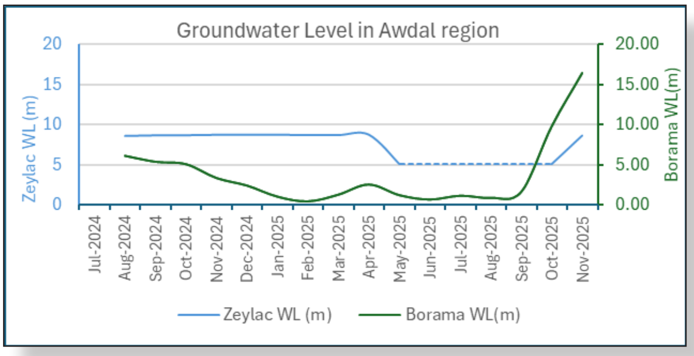
Water Level and Conductivity Trends

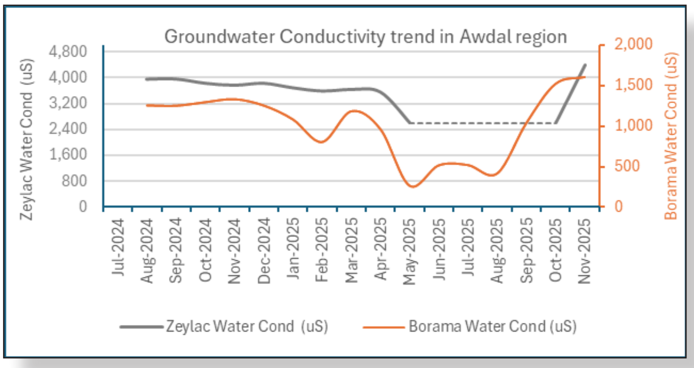
Awdal Region

The trends of groundwater levels in the Awdal region indicate two different changes. Borama displays a steady decrease starting in August 2024, decreasing from approximately 6 m to under 3 m by December 2024, and this downward trend persists into early 2025. By August 2025, the water level had fallen to less than 1 m, indicating prolonged dry-season stress and an absence of meaningful recharge during this period. A marked recovery begins in September, and by October–November 2025, the water level rises sharply, reaching above 15 m, demonstrating a response to Deyr rainfall and confirming rapid aquifer recharge once seasonal rains resume.

In Zeylac, the water level remains stable from August 2024 to April 2025, fluctuating only slightly between 8.6 and 8.7 m. The dotted line between May - September 2025 represents a monitoring gap caused by the removal of the water-level sensor, meaning no valid measurements were recorded during this period. When monitoring resumed in October 2025, the water level measurement reached above 5 m in November.

The conductivity displays the differences between the two locations. In Borama, conductivity persisted relatively stable around 1,250–1,350 µS during late 2024, then declined slightly as groundwater levels fell through early 2025, showing mineral concentration changes linked to the decline of the water table. With the onset of recharge in September–October 2025, conductivity rises again, reaching 2,500–3,000 µS. This increase reflects the flushing of accumulated minerals and the mixing of fresh recharge water with deeper, more mineralized groundwater.





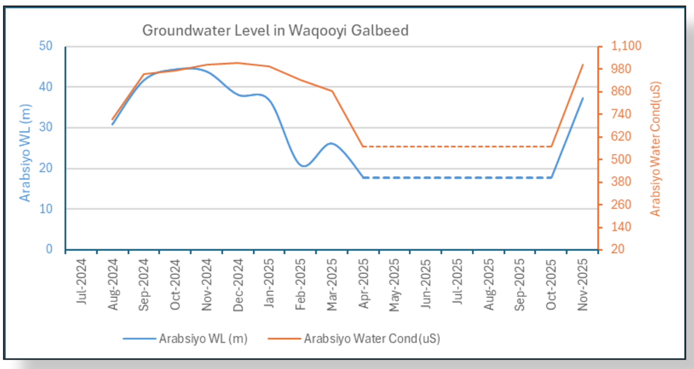
Zeylac consistently has high conductivity values between 3,800 and 4,000 µS throughout the period when data are available, indicative of a more saline aquifer controlled by local geology rather than seasonal recharge. The disparity in conductivity readings between May and September 2025 corresponds to the same sensor removal period seen in the water-level graph. After the sensor is reinstalled, conductivity measurements resume, again reflecting the high mineral content of the Zeylac aquifer

Waqooyi Galbeed Region

The groundwater level trend at the Arabsiyo borehole shows seasonal fluctuations. The water level started at 30.8 m in August 2024 and progressively increased to a peak of 44.4 m in October 2024, reflecting significant recharge from the preceding Deyr 2024 rainfall. After this peak, the level gradually declined through the dry season, reaching 38.2 m in December and 36.8 m in January 2025, before dropping sharply to 20.8 m in February. A minor rise to 26.1 m was observed in March.

The sudden decline in April 2025, followed by a continuous zero-line until September 2025, does not represent actual aquifer depletion. Instead, this portion of the dotted line reflects a monitoring gap caused by the removal of the water-level sensor during borehole rehabilitation, resulting in no data being measured during this period.

After the instrument was reinstalled in October 2025, and the measurements resumed, the water level rose to 17.8 m, which then reached 37 m in November 2025 with the onset of the Deyr 2025 rains. The water conductivity of the Arabsiyo borehole began at 712 µS/cm in August 2024 and steadily increased to 1,011 µS/cm by December 2024, indicating higher mineral concentration as groundwater levels declined.A slight decrease occurred in January (995 µS/cm) and February (922 µS/cm), consistent with seasonal dry spells. The gap from April to September 2025 corresponds to the same monitoring interruption caused by the rehabilitation works. When monitoring resumed in October 2025, conductivity ranged between 570 µS/cm and 1,002 µS/cm in October and November, reflecting the positive influence of Deyr 2025 rainfall on aquifer recharge and water quality

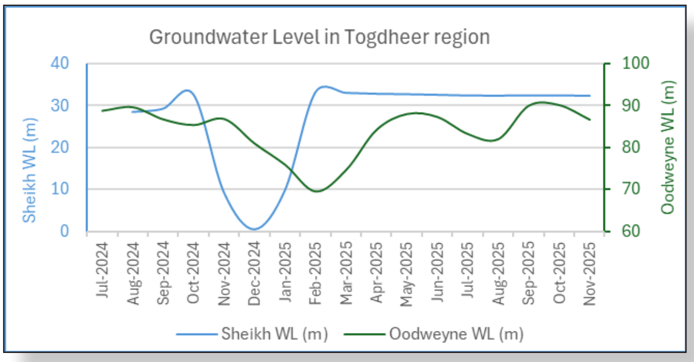


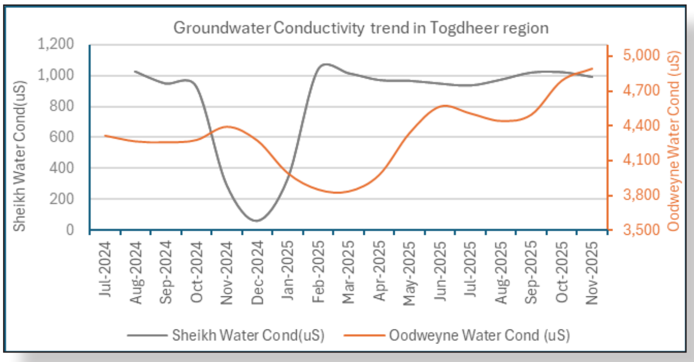
Togdheer Region

The groundwater levels in the Togdheer region indicate two separate responses from the aquifers. At Sheekh borehole, water levels showed a moderate rise from August to October 2024, increasing from 28.4 m to 32.6 m, indicating short-term recharge from the preceding wet season. This is followed by a sharp decline that began in November 2024, when the water level fell to 9.32 m, and reached the lowest point of 0.5 m in December 2024, reflecting severe aquifer drawdown during the poor performance of the Deyr 2024 rainfall. In early 2025, recovery started, and the level rose to 9.8 m in January 2025. By February of the same year, they fully returned to 33 m. From February to November 2025, the curve stabilizes between 32–33 m.

On the other hand, the Oodweyne borehole displays stable water level conditions, and the level persisted between 88–89 m from July–October 2024, then gradually declined to a minimum of 69.4 m in February 2025. A steady recovery follows, with water level rising consistently throughout the monitored period, reaching 90.12 m by October 2025. The water conductivity at the Sheekh borehole reflects seasonal changes in groundwater. It started at 1,027 µS in August 2024, gradually declined through September and October, then dropped sharply in November and December to 296 µS and 63 µS, aligning with the period of declining water levels. When the water level rose, conductivity returned to normal ranges, stabilizing between 937 and 1,039 µS from February to October 2025, and then at 992 µS in November 2025.

While the Oodweyne borehole shows persistently high-water conductivity throughout the monitoring period, consistent with naturally saline groundwater. Conductivity generally remains above 4,200 µS, slightly drops during early 2025 to around 3,849 µS, then rises again toward mid-2025, reaching about 4,895 µS in November 2025.





Sool Region

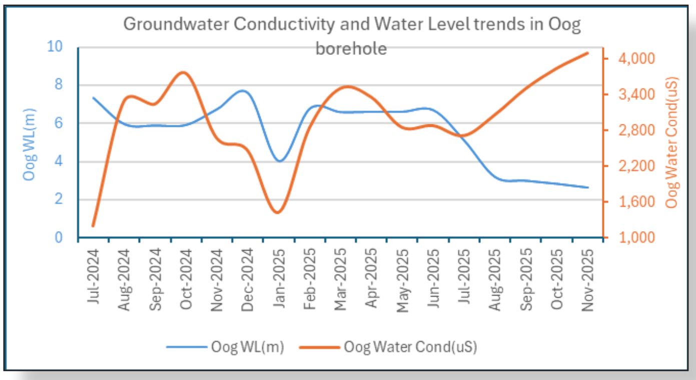
The Oog water level varied with the seasons, showing a decline towards the end of 2025. The level began at 7.3 m in July 2024, then dropped to 5.9 m in August and remained almost stable until September, and October 2024 ranged from 5.9 m to 5.9 m respectively. The water level reached 7.6 in December 2024, which was the highest water level recorded during the monitored period.

In January 2025, the level fell to 4.0 m, likely linked to high abstraction and the effect of the Jilaal dry period. In February, the water level rises, and the borehole starts to replenish, increasing to 6.8 m and staying steady through March (6.6 m), April (6.63 m), May (6.63 m), and June (6.7 m). After June, the trend turns downward, dropping to 5.1 m in July, 3.2 m in August, 3.0 m in September, 2.8 m in October, and finally 2.6 m in November 2025. This decline possibly reflects the dry Hagaa season, reduced recharge, and increased aquifer abstraction.

Water conductivity at the Oog borehole shows seasonal variation, reflecting the balance between water level and mineral concentration during wet & dry periods. Conductivity started at 1,208 µS in July 2024, then increased sharply to 3,287 µS in August 2024, stayed high in September and October 2024, ranging from 3,242 µS to 3,759 µS, respectively, then dropped to 2,677 µS in November, and 2,470 µS in December 2024.

In January 2025, conductivity fell further to 1,434 µS, coinciding with the decline in water level, after which it rose again to 2,840 µS in February.

Conductivity rose again in March 2025, reaching 3,503 µS, before declining slightly in April (3,360 µS) and May (2,853 µS), then stabilizing around 2,883 µS in June. As water levels declined from July onward, the water conductivity increased again to 2,716 µS in July, 3,062 µS in August, 3,499 µS in September, and 3,838 µS in October, and 4092 µS in November 2025.



Sanaag Region

The trends in water levels in the Sanaag region indicated different aquifer behaviors. Baran borehole had the most extreme changes, beginning at 107 m in June 2024 and remaining high until July –August 2024, when it dropped rapidly to 36.2 m in September. From October 2024 to February 2025, the water level reached and remained at 3 to 1 m, and the sensor's level is at a depth of 242 m. Recovery started in March 2025 at 28.6 m and increased to 69.1 m in April, corresponding to the Gu rainy season. The levels remained between 60 and 72 m until November 2025.

Dhahar borehole shows moderate seasonal variation, starting at 66.5 m in June 2024, decreasing gradually to 35–31 m during late 2024 and early 2025, and then recovering sharply in March (63.4 m) and April (71.1 m), corresponding to the Gu 2025 season, before stabilizing around 58–62 m mid-year. In September, the water level reached 24.5 m and in October 2.1 m, until reaching the level of the sensor, and recorded 0 m in November 2025. This means the water level passed the sensor level, while the sensor is installed at 242 m depth, and the borehole depth is 350 m.

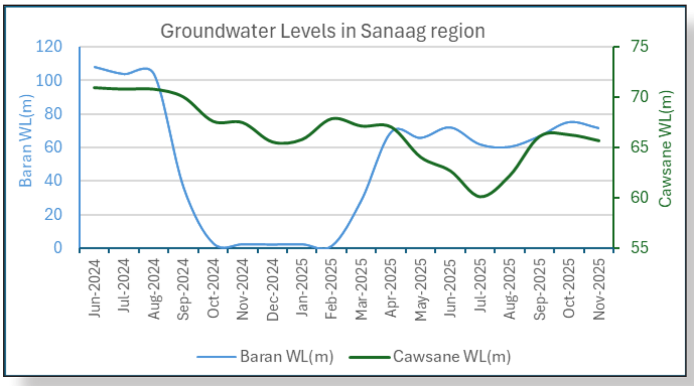
Whereas, Cawsane borehole showed minor changes, with water levels fluctuating slightly between 60–70 m throughout the entire monitored period from June 2024 to November 2025, shown minimal seasonal changes and stable aquifer conditions.

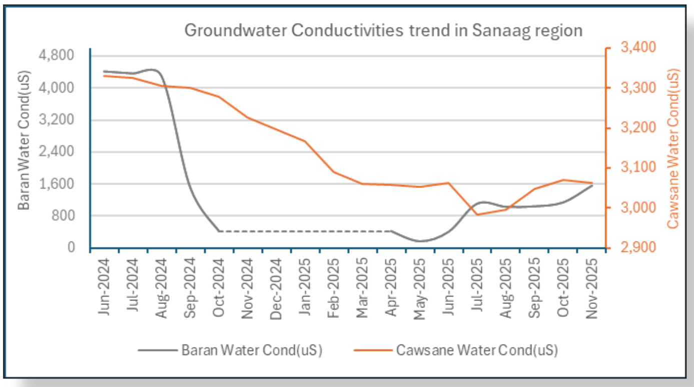
The water conductivity varies among the three boreholes. Baran borehole displayed high conductivity early in the period, ranging from 4,409–4,295 µS between June and August 2024, then sharply dropped to 1,513 µS in September 2024, which is linked to a significant water-level decline. From October 2024 to February 2025, water conductivity dropped to 0–11 µS, indicating that the water level passed the sensor's level.

During the groundwater recharge period, which usually occurs in the Gu and Deyr seasons, water conductivities gradually increased from 121 µS in March 2025 to 422 µS in April, then continued to rise through mid-2025, reaching 1,141 µS in October and 1,559 µS in November 2025.

Dhahar borehole, on the other hand, sustained relatively stable conditions, with conductivity values between 2,759–3,301 µS throughout 2024, showing only minor seasonal changes. From January to August 2025, the conductivity stayed within the range of 3097–3514 µS, then dropped 1292 µS in September, until both water level and conductivity suddenly dropped and reached 0 µS, possibly due to the water level reaching the sensor's level, which is 198 m, and the total depth of the borehole is 225 m.

There was minimal conductivity variation in the Cawsane borehole, which showed stable groundwater conditions, with measurements ranging from 3,053 to 3,256 µS from June 2024 to November 2025, making it the most stable of the three boreholes.



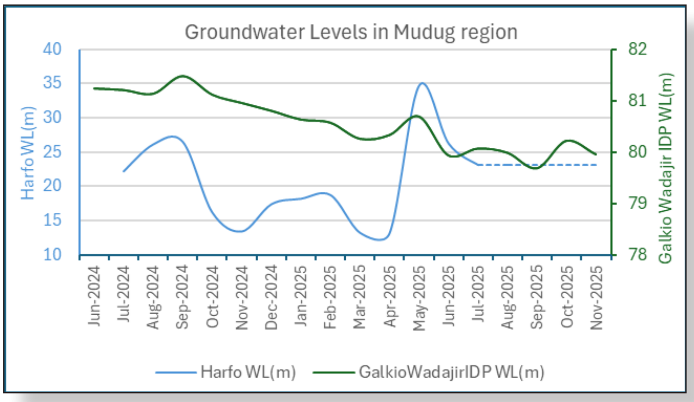


Mudug Region

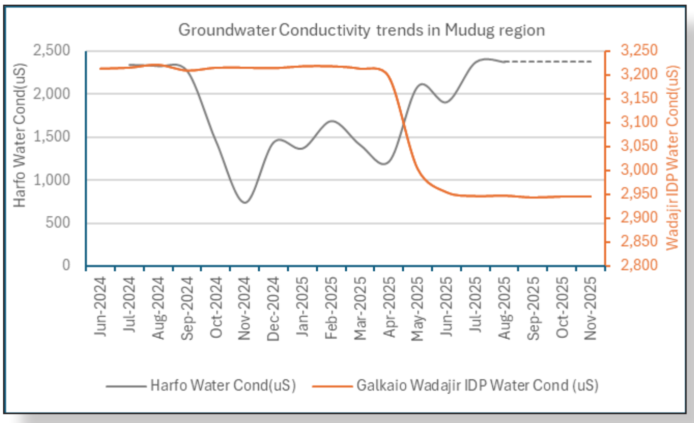
The Harfo borehole showed seasonal variations, starting at 22 m in July 2024 and displaying a notable increase reached 26 m from August to September 2024, then declining from October to November 2024, followed by a gradual decrease until April 2025, when levels reached 13 m. In May 2025, a recovery was observed, rising to 34 m, then again slightly declined to 26 m in June and further to 23 m in July 2025.

From August 2025 onward, the water level was missing. The dotted line indicates the water level passed the sensor's level of 196 m or removal of the instrument from the borehole, rather than water table depletion, although the borehole depth is 220 m and still has a column of water.

The water level at Wadajir IDP borehole in Galkaio city stayed relatively stable during the monitored period. The level began at 81 m in June 2024 and sustained around 80 m by November 2025, with a minor variation of 3 m observed, possibly due to the abstraction and seasonal recharge.



The Harfo borehole showed different monthly conductivity variations, possibly linked to groundwater abstraction s and positive impacts of the wet seasons. From July to October 2024, the water conductivity fluctuated slightly around 2,340–1,449 µS. In November 2024, the conductivity declined and reached 736 µS. From December 2024 to July 2025, the conductivity shows a gradual increase, rising from 1,440 µS to 2,372 µS.By August 2025, conductivity fell steeply toward zero, possibly indicating sensor issues rather than an actual decline in groundwater. Whereas at the Galkayo Wadajir IDP borehole, water conductivity from June 2024 to April 2025 remained stable, with a maximum around 3,214 µS, then slightly declined and reached about 2,946 µS in November 2025. This indicates a stable mineral concentration.



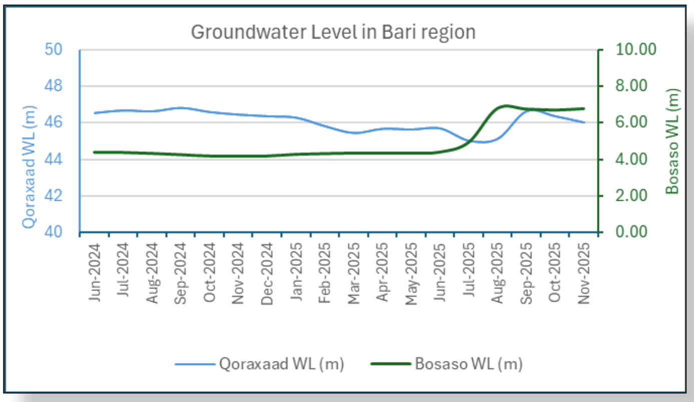
Bari Region

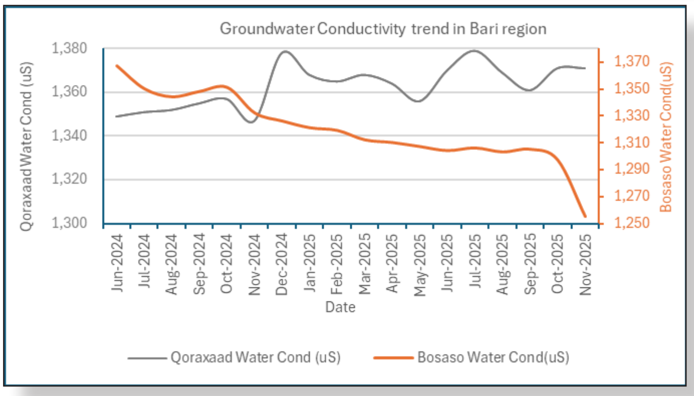
The groundwater levels at Qoraxaad remained relatively stable throughout the monitoring period, with only minor seasonal fluctuations. The water level stayed mostly between 45 and 46 m from June 2024 to November 2025, with only a 1 m decline, indicating a deep and well-stable aquifer condition.

The Bosaso borehole is a shallower coastal aquifer, shows relatively stable conditions.Water levels stayed around 4.4–4.9 m from June 2024 to July 2025 with minimal variation, then slightly increased to 6.8 m in August 2025 onward.

Qoraxaad water conductivity values were also almost stable from June 2024 to November 2025, ranging between 1,349 µS and 1,371 µS, indicating a stable and balanced aquifer system.

Similarly, Bosaso water conductivity began at 1,367 µS in June 2024 and persisted at 1,255 µS in November 2025. Both conductivity values are close to each other and reflect stable conditions.





Mudug Region-South

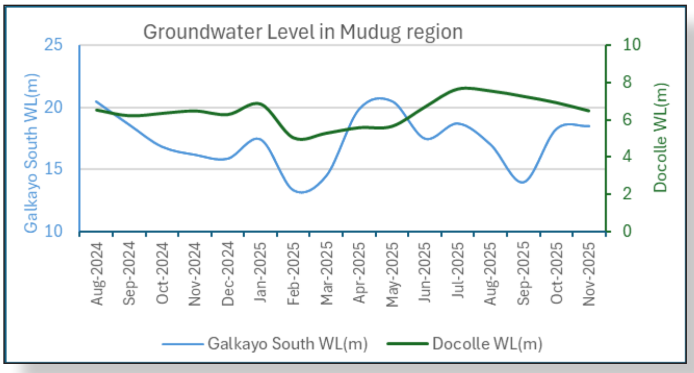
The groundwater levels in Mudug show distinct behavior between the Galkayo South and Docolle boreholes. Galkayo South displays clear seasonal variability, starting at about 20.5 m in August 2024 and gradually declining through the end of the year to around 15.9 m in December, before reaching its lowest point of nearly 13.4 m in February 2025. This type of decline indicates abstraction pressure combined with reduced recharge during the Jilaal dry season. the recovery began during the early Gu season, with levels rising to 19.9 m in April and reaching 20.5 m in May 2025. a minor fluctuation continued through mid-2025, followed by another drawdown to about 14.1 m in September 2025, before levels improved again during the onset of Deyr, reaching around 18–18.5 m by October and November 2025.

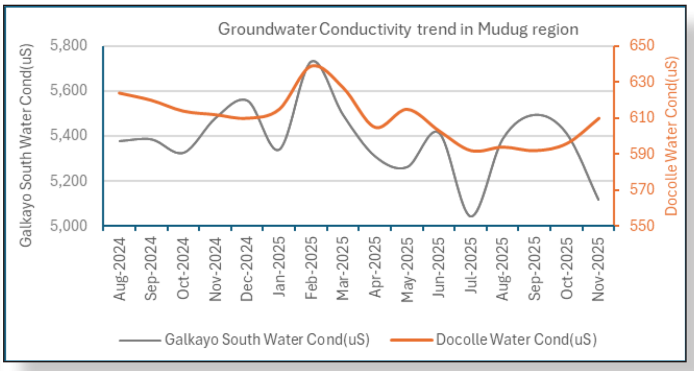
Whereas the Docolle borehole sustained more stable conditions, with water levels fluctuating between 6.5 and 6.8 m from August 2024 to January 2025. A minor decline of only 1 m was observed from February to May, followed by a slight increase to 7.6 m until September 2025, and then a slight drop back to 6.5 m until November 2025.

Although the total depth of the borehole is 236 m and the sensor level is 164 m, only a 2 m fluctuation occurred during the monitored period. This minor groundwater fluctuation indicates a less pressured aquifer.

The groundwater conductivities trends showed the difference between the aquifer characteristics of the Galkaio and Docolle boreholes. Galkayo South shows more stable but higher salinity throughout the monitoring period, with values began at 5,380 µS in August 2024 and persisted at 5,119 µS in November 2025, showing only minor fluctuations during the period.

Whereas the Docolle borehole shows much lower and more stable water conductivity, during the monitored period, minimal changes were observed, with values of 624 µS in August 2024 and remaining close to 610 µS until November 2025.





Galgaduud Region

The groundwater levels in the Galguduud region displayed opposing responses between Dhusamareeb and Mareergur boreholes. Dhusamareeb showed a gradual decline from 15.6 m in August 2024 to 13.9 m in December 2024. Levels stayed relatively stable through early 2025, fluctuating between 13.5 m and 11.6 m occured until August 2025. The dropdown began in September 2025, fell to 6.1 m, then declined to 2.4 m in October, and in November, the sensor was not measured. This means that the water level has exceeded the sensor's level, positioned at 31 m, whereas the total depth of the borehole is 140 m.S.

Mareergur borehole showed a more stable aquifer response. Water levels stayed relatively stable, beginning at 6.5 m in August 2024, and the highest level reached during the monitored period was 8.6 m in May 2025, corresponding to the Gu season, and the lowest point observed was 5.7 m in September 2024. This indicates that the Mareergur borehole sustained a groundwater balance compared to the Dhusamareeb borehole.

The conductivity trends highlight the hydrogeological differences between the two boreholes. The Dhusamareeb borehole stayed relatively stable with minor fluctuation in conductivity between 2,789 and 2,497 µS from August 2024 to August 2025, resulted a stable aquifer condition with limited seasonal variation.

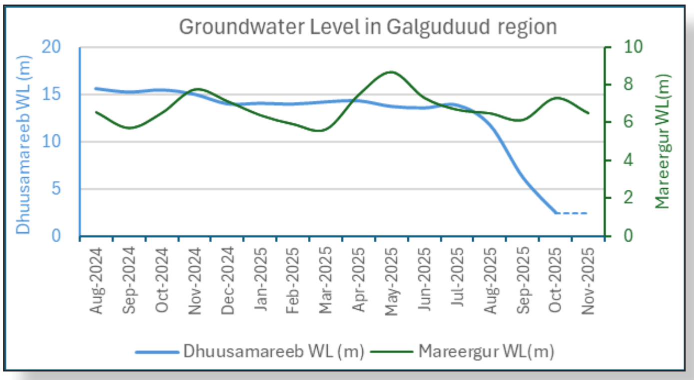
A water conductivity decrease began in September 2025, reached 1,500 µS, then rapidly declined in October to 519 µS, at last to 0 µS, indicating that the water table fell below the sensor's level.While the Mareergur water conductivity shows a different level, with high salinity water.

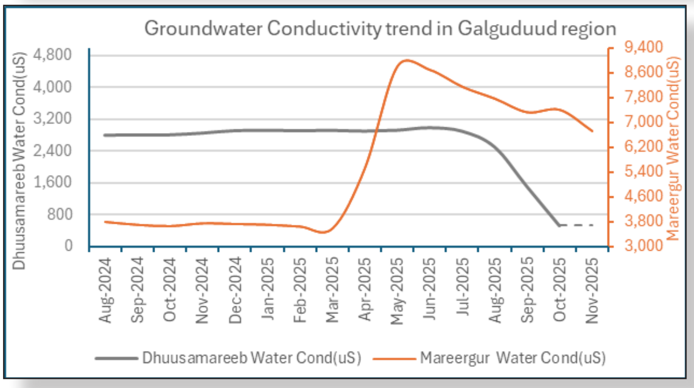
Hiiraan Region

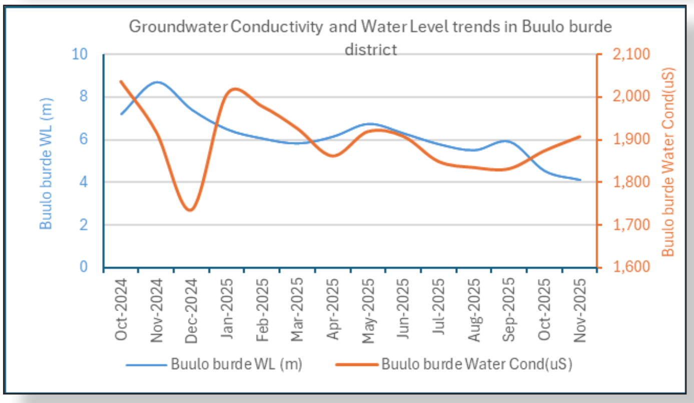
The groundwater level trends at the Buulo Burde borehole showed the presence of a shallow aquifer, characterized by minimal monthly fluctuations during the monitored period. From October 2024, when monitoring started, the water level began at 7.2 m and increased to 8.7 m in November 2024, which was the highest level observed. A gradual decline followed thereafter until it reached the lowest level of 4.1 m in November 2025.

The total borehole depth is 120 m, with the sensor positioned at 15 m, and a total drop recorded was 4.6 m, so the minimal decline observed towards the end of 2025 indicates that the aquifer conditions remain stable and sustained.

From August 2024 to March 2025, conductivity remained between 3,793 and 3,584 µS, then rose to 5,541 µS in April and 8,818 µS in May, and persisted until July 2025. A slight decrease began in August and continued until November 2025, reaching 6,725 µS.







Conductivity values at the Bulo Burde borehole displayed relatively stable mineral content with only minor monthly changes. In October 2024, the starting conductivity was 2,037 µS, reaching its lowest value of 1,737 µS in December 2024. Thereafter, a slight increase was recorded, reaching 1,908 µS by the end of November 2025.

Lower Juba Region

The groundwater levels in Kismaayo and Dhoobley showed higher and stable aquifer conditions with slight monthly changes. In Kismaayo, the water level stayed more stable than in the Dhoobley borehole. The water level began at 32.6 m in August 2024, then gradually declined until March, reaching 31 m. A minor recovery followed in mid-2025, sustaining 32.7 m until September 2025, then dropping again to 31 m in October and November 2025.

The Kismaayo borehole has a total depth of 240 meters, with the sensor positioned at a depth of 60 meters. The water level trends at the Dhoobley borehole showed a downward trend throughout the monitored period. The water level began at 27 m in August 2024 and stayed at 27.1 m through December 2024. It then dropped a bit in February and March 2025 (26.7 m and 25.2 m). The water level stayed at 24 m from April to September 2025, after which the decline continued and reached the lowest level of 23.7 m in October and 23.78 m in November 2025; the total drop is 3.4 m.

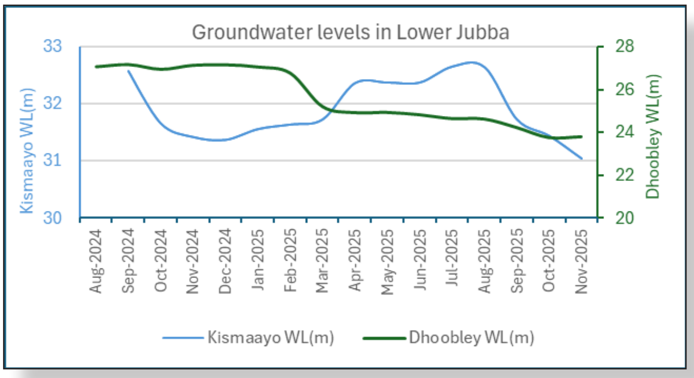
The water conductivities of the Dhoobley and Kismaayo boreholes were mostly stable. The Kismaayo borehole showed moderate salinity but sustained very steady water conductivity. water conductivity began at 3,518 µS in September 2024 and slightly decreased a bit to 3,428 µS in October 2025.

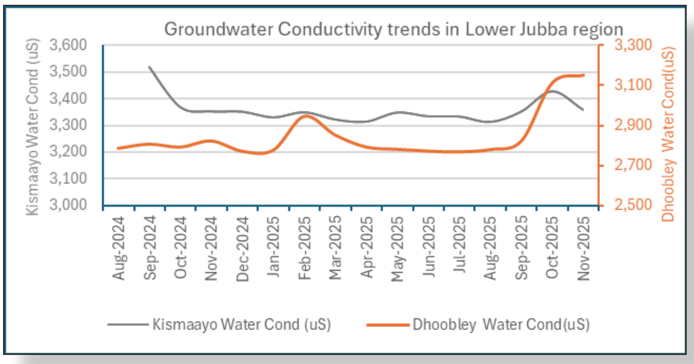
Lower Shabelle Region

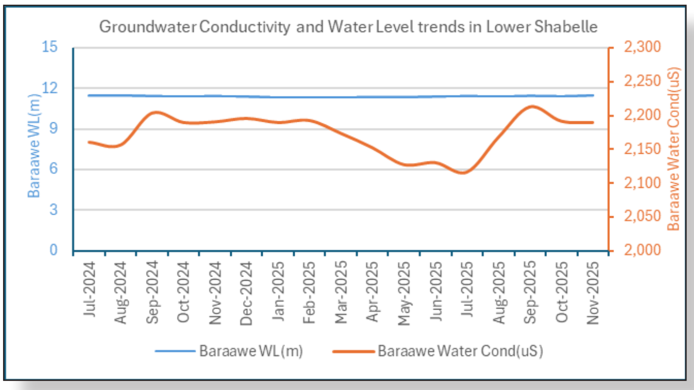
The water level trends of the Baraawe borehole showed a stable water table throughout the monitoring period from July 2024 to November 2025. The level began at 11.4 m in July 2024 and persisted at the same level of 11.4 m in November 2025. This indicates a stable aquifer, with no drawdown or recharge occurring during the entire 17-month observation period.

The Baraawe water conductivity also remained consistently stable, indicating uniform mineral content and no major hydrological disturbances. Readings ranged from 2,161 µS in July 2024 to 2,190 µS in November 2025. These consistent values indicate stable groundwater conditions.

Although the water is moderately saline but overall, the conductivity values indicate no significant attention effects, reflecting stable groundwater conditions. Whereas the Dhoobley borehole started at 2,787 µS in August 2024 and increased to 3135 µS in November 2025.







Observed and Forecast Climate Conditions

The October–December (OND) Deyr 2025 rainfall season performed poorly across most parts of Somalia, with rainfall remaining below normal in northern, central, and southern regions. While Karan/Hagaa rains in August were relatively favorable in parts of Awdal, rainfall weakened significantly as the season progressed into Waqooyi Galbeed and central regions in September, and October–November rainfall remained far below average. December 2025 has been characterized by predominantly dry conditions, marking a clear transition into the Jilaal dry season.

These rainfall deficits were accompanied by above-normal temperatures, particularly in southern Somalia, where hot and dry daytime air masses (35–40°C) have dominated, resulting in high evapotranspiration rates. The combination of limited rainfall and elevated temperatures has restricted soil moisture replenishment, reduced surface runoff, and constrained groundwater recharge, especially for shallow aquifer systems that depend directly on seasonal rainfall.

Looking ahead, January–February 2026 (peak Jilaal) is projected to be hot and dry, with minimal rainfall expected countrywide. Climate drivers indicate a weak La Niña persisting through Jilaal, supported by a negative Indian Ocean Dipole (IOD) and a weak or out-of-phase Madden–Julian Oscillation (MJO), all of which favor suppressed convection over Somalia.

These conditions are expected to intensify drought stress, increase groundwater abstraction, and accelerate aquifer drawdown, particularly in areas already experiencing declining groundwater levels such as Somaliland and Puntland. For the March–May (MAM) Gu 2026 season, forecasts suggest near-normal rainfall at the national scale, though forecast uncertainty remains high. Gu rainfall has a weak statistical relationship with large-scale oceanic drivers, and while neutral ENSO conditions are expected, the timing and spatial distribution of Gu rains remain uncertain, with delayed onset possible. As a result, meaningful drought relief and groundwater recharge may not materialize until April or May, especially in drought-affected regions.

Observed River Levels

Observed river levels along the Shabelle and Juba rivers have continued to decline sharply, reflecting the cumulative impact of poor Deyr rainfall, limited upstream inflows, and high evaporative losses. By late November 2025, river levels at key stations were well below long-term means and far below flood thresholds, confirming very low surface water availability across most riverine areas.

Along the Shabelle River, water levels dropped by more than 2–3 meters at major stations including Belet Weyne, Bulo Burte, and Jowhar, placing current levels below long-term averages and significantly lower than last year's values. In some locations, riverbeds were observed to be dry, effectively eliminating opportunities for riverbank infiltration and shallow alluvial aquifer recharge. Similarly, the Juba River has experienced sustained low flows, with levels at Dollow and Luuq remaining well below moderate flood risk thresholds and below historical norms. The continued decline in river levels has direct implications for groundwater systems, particularly in riverine and floodplain areas of Middle Shabelle, Lower Shabelle, Gedo, and Lower Jubba, where hydraulic connectivity between rivers and shallow aquifers is strong.

Reduced river stages limit natural recharge of adjacent aquifers, while simultaneously increasing reliance on groundwater abstraction for domestic use, irrigation, and water trucking.

Under current and projected Jilaal conditions, groundwater abstraction pressure is expected to intensify, especially in riverine settlements that typically supplement borehole supply with surface water during wet seasons.

This dynamic is likely to accelerate groundwater level declines, increase pumping durations, and elevate the risk of mechanical failures at strategic boreholes, particularly where alternative water sources are unavailable.

Although flood risk remains minimal in the near term, the expected bare land conditions following prolonged drought mean that, should Gu 2026 rainfall materialize abruptly, rapid runoff and localized flash flooding could occur, offering short-lived surface flows but limited groundwater recharge efficiency due to reduced infiltration capacity.

Conclusion

Groundwater conditions across Somalia continue to demonstrate a strong dependence on seasonal rainfall and remain highly vulnerable to prolonged dry spells, elevated temperatures, and increasing abstraction pressure. Significant aquifer stress has been observed in parts of Awdal, Waqooyi Galbeed, Sanaag, Sool, and Mudug, where multiple boreholes reached sensor depth, reflecting limited recharge during recent poor rainy seasons. In contrast, central and southern regions generally exhibited more stable groundwater levels, likely supported by relatively higher recharge potential, shallower aquifers, and reduced seasonal depletion.

Groundwater quality trends closely mirrored water-level dynamics, with conductivity increasing during periods of depletion and declining during recharge, confirming a strong hydraulic link between aquifer levels and mineral concentration. Persistently high salinity was observed in Oodweyne, Galkayo South, and Baran, largely attributed to local hydrogeological conditions rather than short-term climatic variability. Conversely, Qoraxaad, Bosaso, Cawsane, Barawe, and Docolle showed stable conductivity and water-level conditions, indicating more resilient aquifer systems.

Weekly monitoring of strategic water sources demonstrated generally high operational functionality, particularly in south-central Somalia, while localized mechanical failures, mainly pump, power supply, and riser pipe issues were recorded in parts of Puntland and Somaliland. These failures occurred against a backdrop of below-normal Deyr 2025 rainfall, compounding stress on groundwater systems by concentrating abstraction on fewer functioning boreholes. Water price trends reflected these pressures, with Jubaland recording the highest prices (USD 0.7–1.0 per 200 liters) and Galmudug maintaining the lowest and most stable prices (USD 0.18–0.20). The failed Deyr 2025 season, followed by hot and dry Jilaal conditions, has also resulted in persistently low river levels along the Shabelle and Juba rivers, substantially reducing surface water availability and limiting river-fed aquifer recharge in riverine and floodplain areas. This has further increased reliance on groundwater for domestic use, irrigation, and water trucking, particularly in river-dependent communities. While flood risk remains minimal in the near term, the uncertain Gu 2026 outlook suggests that meaningful groundwater recovery may be delayed, with any abrupt rainfall potentially generating rapid runoff but limited recharge efficiency. The convergence of climatic stress, declining river flows, and rising groundwater demand underscores Somalia's growing dependence on groundwater as the primary water source. Sustained and enhanced integrated surface water–groundwater monitoring, timely rehabilitation of non-functional boreholes, and demand-side management are therefore critical to mitigate escalating water stress as the country progresses through the Jilaal season and awaits the uncertain Gu 2026 rains.

Annex 1: List of non-functioning water sources

No	State	Region	District	Settlement	Borehole Name	Status	Reason for Breakdown
1	Puntland	Bari	qardho	Xaaji Khayr	Xaaji Khayr BH	Non-functioning	Main raising pipe issue
2	Puntland	Bari	caluula	Bareeda	Kalood	Non-functioning	Borehole dried up
3	Puntland	Bari	qardho	Yakayaka	Yakayaka BH	Non-functioning	Borehole Collapse
4	Puntland	Sanaag	laasqoray	Balibusle Sanaag	Balibusle BH	Non-functioning	Power supply issue
5	Puntland	Sanaag	laasqoray	Dhahar	Ayaan 1&2	Non-functioning	Pump issue
6	Puntland	Bari	qardho	Jedad	Jedad BH	Non-functioning	Pump issue
7	Puntland	Nugaal	eyl	Dhiganle	Dhiganle BH	Non-functioning	Power supply issue
8	Puntland	Sanaag	laasqoray	Xubeyra	Xubeyra BH1	Non-functioning	Pump issue
9	Puntland	Mudug	jariiban	Gocosaale	Cawsacade BH	Non-functioning	
10	Puntland	Sanaag	laasqoray	Ceelaayo	Ceelaayo BH	Non-functioning	Pump issue
11	Puntland	Sanaag	ceergaabo	Fiqifuliye	Horseed	Non-functioning	Main raising pipe issue
12	Puntland	Sanaag	laasqoray	Badhan	Qorof BH1	Non-functioning	Main raising pipe issue
13	Puntland	Nugaal	burtinle	Burtinle	Hanad BH2	Non-functioning	Main raising pipe issue
14	Puntland	Mudug	jariiban	Buubi	Buubi BH2	Non-functioning	Main raising pipe issue
15	Puntland	Mudug	goldogob	Riig Oomane	Riig Oomane BH2	Non-functioning	Pump issue
16	Puntland	Sanaag	ceergaabo	Wardheer	Goojacade	Non-functioning	Main raising pipe issue
17	Puntland	Bari	qardho	Xidda	Xidda BH	Non-functioning	Main raising pipe issue
18	Puntland	Sanaag	laasqoray	Dhahar	Ilma Xuseen BH	Non-functioning	Pump issue
19	Somaliland	Woqooyi_Galbeed	Gabiley	Botor	Botor 24	Non-functioning	Power supply issue
20	Somaliland	Woqooyi_Galbeed	Baligubadle	Waado bariis	Waado bariis BH	Non-functioning	Borehole Collapse
21	Somaliland	Woqooyi_Galbeed	Hargeisa	Arabsiyo	Arabsiyo 29	Non-functioning	Pump issue
22	Somaliland	Awdal	Borama	Dila	Dila 26	Non-functioning	Pump issue
23	Somaliland	Woqooyi_Galbeed	Baligubadle	Gumar	Gumar Bh	Non-functioning	Pump issue
24	Somaliland	Woqooyi_Galbeed	Hargeisa	Arabsiyo	Arabsiyo 29	Non-functioning	Power supply issue
25	Somaliland	Woqooyi_Galbeed	Hargeisa	Gogol wanaag	Gogol wanaag 28	Non-functioning	Pump issue
26	Somaliland	Togdheer	Burao	Qoyta	Qoyta BH	Non-functioning	Main raising pipe issue

Annex 2: List of Telemetric Stations

No	Region	Station Name	Status	Reason
1	Middle shabeele	Balcad BH	Non-functioning	Sensor issue
2	Middle shabeele	Jowhar Farjano BH2	Non-recording	Water Level passed the Sensor's level
3	Lower shabeele	Tadamun bh2	Non-functioning	Sensor removed from the BH
4	Bay	Baidoa BH 1	Non-functioning	Sensor issue, data not decoded
5	Gedo	Garbahaarey	Non-functioning	Sensor failed, or the Sensor removed from BH
6	Bakool	Xudur - Buulow BH	Non-functioning	Sensor failed, or the Sensor removed from BH
7	Bakool	Ceel Barde BH	Non-functioning	Sensor failed, or the Sensor removed from BH
8	Galgaduud	Dhoobshac	Non-functioning	Sensor failed, or the Sensor removed from BH
9	Galgaduud	Bilcile	Non-functioning	Sensor issue, data not decoded
10	Galgaduud	Duqaaqo BH	Non-functioning	Sensor issue, data not decoded
11	Nugaal	Garowe BH 1	Non-functioning	Sensor issue, data not decoded
12	Nugaal	KM22 BH	Partially functioning	Power supply issue (incorrect Temperature & Battery readings)
13	Sool	Shaxda	Non-functioning	Sensor removed from the BH
14	Sanaag	Dhahar BH1	Non-recording	Water Level passed the Sensor's level
15	Bari	Carmo Borehole	Non-functioning	Sensor failure
16	Sanaag	Baran Borehole	Partially functioning	Conductivity reading missing
17	Sanaag	Garadag Borehole	Non-functioning	Sensor failed, or the Sensor removed from BH
18	Sahil	Berbera Borehole	Non-functioning	Sensor cable damaged during maintenance
19	Waqooyi Galbeed	Wajale Borehole	Non-functioning	Sensor failure

No	Region	Station Name	Status
1	Lower Jubba	Kismaayo Haadweyne BH	Functioning
2	Lower Jubba	Dhoobley - Ceeldhiig	Functioning
3	Lower shabeele	Ambareeso macalin cumar	Functioning
4	Galgaduud	Mareergur	Functioning
5	Galgaduud	Xaraale	Functioning
6	Galgaduud	Adaado	Functioning
7	Mudug	Docolle/Carfuuda	Functioning
8	Mudug	Galkayo	Functioning
9	Mudug	GalkioWadajirIDP BH	Functioning
10	Mudug	Harfo BH2	Functioning
11	Sanaag	Cawsane Borehole	Functioning
12	Bari	Bosaso Borehole	Functioning
13	Bari	Qoraxaad BH	Functioning
14	Sool	Oog Borehole	Functioning
15	Togdheer	Ceel Xume Borehole	Functioning
16	Togdheer	Sheikh (Dubur) Borehole	Functioning
17	Waqooyi Galbeed	Arabsiyo Borehole	Functioning
18	Waqooyi Galbeed	Gebiley (Botor BH3) Borehole	Functioning
19	Awdal	Borama (BH 19) Borehole	Functioning
20	Awdal	Zeylac (Toqoshi) Borehole	Functioning
21	Hiiran	Buulo burte Qansaxle BH	Functioning

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