HOA DRIVE, IBLT PAYOUT SUMMARY REPORT - SOMALIA

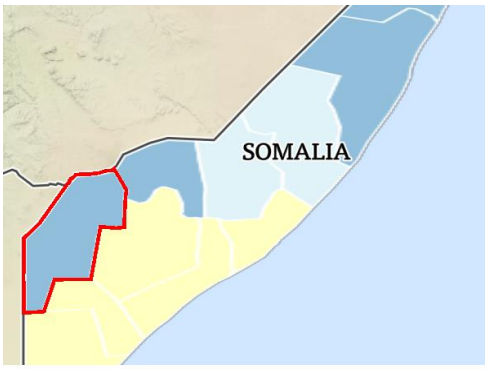
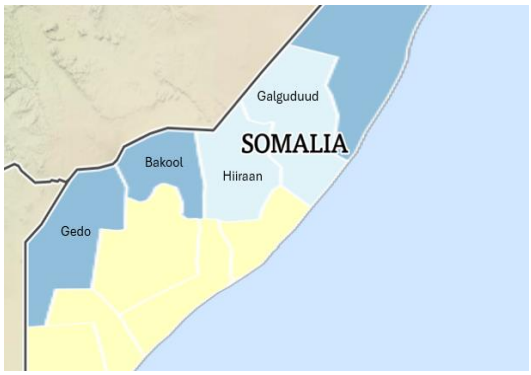
OCTOBER – DECEMBER 2023 SEASON

1. EXECUTIVE SUMMARY

This report covers the payouts of the DRIVE Index Based Livestock Takaful (IBLT) product being sold in Somalia. The product's main aim is to provide cover against prolonged forage scarcity ONLY due to a drought. It triggers payment to pastoralists to help maintain their livestock in the face of severe forage scarcity. The payment amount depends on the value derived from a Normalised Difference Vegetation Index (NDVI). The pricing and payout methodologies are the same across all UAIs and result in the same price/payout within each UAI[1] level.

This report covers payouts for the Short Rains season, covering the months of October 2023 – December 2023 for the various regions under cover i.e. Gedo, Bakool, Galguduud, Hiiraan, for two covers whose details are outlined below:

Table 1: Cover descriptions

	Cover 1[2]	**Cover 2**
Product Structure	Two payout phases per season **Short Rains:** Phase 1 – October - November Phase 2 – December **Long Rains:** Phase 1 – April - May Phase 2 – June	One payout phase, at the end of each season **Short Rains:** October - December **Long Rains:** April - June
Period of cover	1st April 2023 to 31st March 2024	1st October 2023 to 30th September 2024
Regions	Gedo 	Gedo, **Bakool, Galguduud and Hiiraan** 

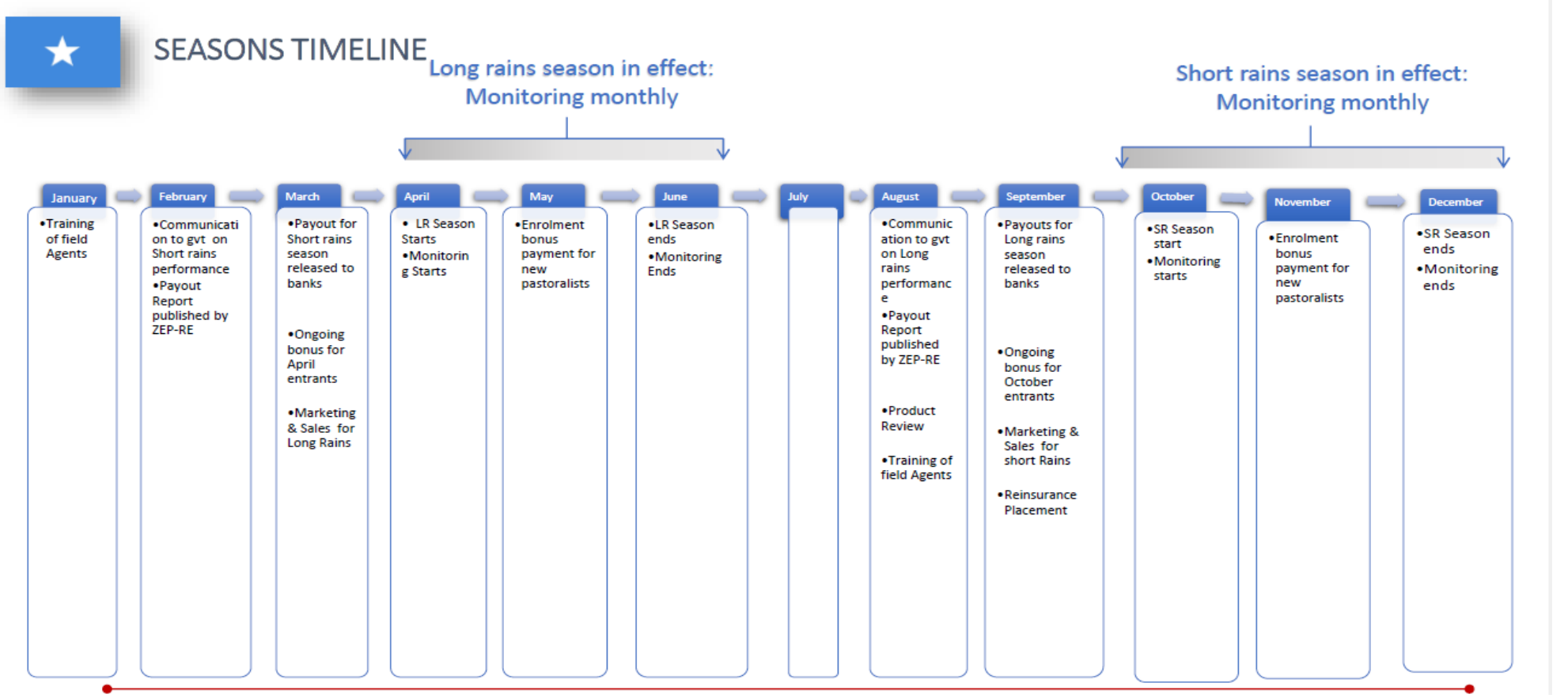
[1] UAI – Unit Area of Insurance per region as is determined based on the homogeneity of vegetation conditions and pastoral migration extents. Also, rangeland dominance, forage availability, seasonality and drought history are also considered.

[2] Cover 1 product structure (two payout phases per season) is only applicable until the end of March 2024, thereafter we fully transition to the cover 2 product structure of having only one payout applicable at the end of each season.

Number of pastoralists	13,527	67,853
Total Premium	USD 1,718,931	USD 9,995,198
Total Sum Insured	USD 8,445,568	USD 50,429,394
Payout calculation period	OND Phase 1 – 1st October – 30th November 2023 OND Phase 2 – December 2023	1st October – 31st December 2023
Payout Amount	Nil	Nil

The calendar timeline for payouts is as shown below:

Figure 1: Calendar timeline for payouts



The payout calculations have been done by ACRE Africa, in their role as the payout calculation agent and have been reviewed by ZEP RE. Further, the Z-Scores[3] have been validated[4] by data service providers and validation agent, Planet.

[3] The z-score describes the variation in the NDVI relative to the historical time series by subtracting the average and dividing by the standard deviation of the historical NDVI readings.
[4] See Final Data Report for more details.

Following the concluded Short Rains season and the finalization of the payout calculations for the season, **the total payout for the 81,380 pastoralists covered in all 4 regions is nil,** with the details shown in the tables below:

Table 2: Summary of the region's coverage statistics

March 2023 – Cover 1

Gedo	Pastoralists	Total TLUs [5]	Pastoralists payment (USD)	Total Premiums (USD)	Total Sum Covered (USD)	Total Claims Payout (USD)
Dawo_&_Gogol	9,197	39,879	121,598	1,217,322	5,967,266	0
Gowraar	4,330	16,543	50,296	501,608	2,478,302	0
Total	**13,527**	**56,422**	**171,894**	**1,718,931**	**8,445,568**	**0**

October 2023 – Cover 2

Region/Unit Area of Coverage	Pastoralists	Total TLUs	Pastoralists payment (USD)	Total Premiums (USD)	Total Sum Covered (USD)	Total Claims Payout (USD)
Bakool	**15,907**	**79,068**	**205,669**	**2,083,652**	**11,860,195**	**0**
Ceel_Barde	724	3,624	12,320	123,852	543,529	0
Tiyeeglow	1	4	12	120	563	0
Wajid	4,795	20,466	61,398	606,203	3,069,900	0
Xudur	10,387	54,975	131,939	1,353,477	8,246,203	0
Hiiraan	**13,877**	**69,372**	**221,990**	**2,228,222**	**10,405,767**	**0**
Hiiraan	13,877	69,372	221,990	2,228,222	10,405,767	0
Gedo	**19,169**	**94,057**	**283,179**	**2,793,430**	**14,108,603**	**0**
Dawo_&_Gogol	16,345	80,270	240,810	2,374,386	12,040,495	0
Diirharo	845	4,377	12,256	126,761	656,566	0
Gowraar	1,979	9,410	30,113	292,283	1,411,542	0
Galguduud	**15,866**	**78,595**	**245,571**	**2,474,087**	**11,789,244**	**0**
Caabudwaaq	4,189	20,944	67,021	669,791	3,141,609	0
Cadaado	5,790	29,651	88,952	915,020	4,447,600	0
Ceel_Buur	4	21	62	624	3,100	0
Ceel_Dheer	1	4	15	156	638	0
Dhuusamareeb	5,882	27,975	89,521	888,496	4,196,297	0
Total	**64,819**	**321,092**	**956,409**	**9,579,390**	**48,163,809**	**0**
Unreconciled[6]	**3,034**	**15,104**	**41,581**	**415,808**	**2,265,585**	**0**
Grand Total	**67,853**	**336,196**	**997,990**	**9,995,198**	**50,429,394**	**0**

[5] TLU - Tropical Livestock Unit, is a unit for measuring monetary value of covered livestock, 1 TLU = 1 cow or 10 goats/sheep or 0.7 camel.

[6] Data reconciliation with the banks and the insurance companies is ongoing.

2. DROUGHT SITUATION[7]

The October to December *deyr* rainy season started on time or slightly early in most of the country. The intensity of rainfall quickly increased in October, with **heavy rainfall** and rapidly rising river water levels causing severe flooding in southern riverine and even agropastoral livelihood zones. By the end of October, heavy rainfall reduced the initial negative anomalies and led to cumulatively above-average rainfall across most of the country.

Driven by El Niño and positive Indian Ocean Dipole climate conditions, Somalia continued to experience **moderate to heavy rainfall** in November 2023, near the middle of the October to December *deyr* season. Following this, most areas of Somalia as well as the Ethiopian highlands that feed the Juba and Shabelle Rivers experienced suppressed rainfall between November 21 and December 10, reducing the risk of further floods. Ground reports and remote-sensing data confirm above-average rainfall and flooding continued across the southern and central regions, followed by suppressed rainfall from late November to early December. CHIRPS remote-sensing data for the mid November 2023 to early December 2023 indicate that most southern regions received 100-300 millimeters of rainfall while the rest of the country received 10-50 mm of rainfall, although large parts of the northern Sool, Sanaag, Bari, and Nugaal regions received less than 10 mm of rainfall. Compared to the long-term average (1981-2020), these rainfall totals were around 50-200 millimeters above average in southern areas and around 10-50 mm above average in central areas, though close to average in northern areas.

In central Somalia, **widespread moderate to heavy rainfall** fell across all livelihood zones of **Galgaduud** and southern Mudug regions during the November 1-20 period. Between November 20 and December 10, little to no rainfall was reported, with the exception of localized heavy rainfall reported during November 21-30 within the Coastal Deeh Pastoral livelihood zone and some Cowpea Belt Agropastoral areas of **Ceeldheer** district. This heavy rainfall resulted in livestock mortality due to drowning in parts of Ceeldheer as well as human displacement from Ceeldheer town. On the other hand, **rainfall throughout October and November has substantially improved rangelands and livestock conditions.**

In the southern regions, significant rainfall, ranging from moderate to heavy intensity between late October and early November, continued into November 11-20, further inundating the southern livelihoods across. The torrential rains exacerbated the impacts of prior flooding in affected areas, causing further crop damage, hindering market activities, and driving additional population displacement from riverine and lowland agropastoral areas. During the November 11-20 period, rainfall gauge data recorded precipitation levels of 212 mm in Afgoye (Lower Shabelle), 198 mm in Sakow (Middle Juba), 194 mm in **Xudur (Bakool),** 163 mm in Baidoa (Bay), 48 mm in **Beledweyne (Hiiraan)**, and 10 mm in Jamaame (Lower Juba). However, little to no rainfall was reported between November 21 and December 10, providing relief from flooding in early December and allowing for the beginning of recessional off-season cultivation activities in most riverine and localized flood-affected agropastoral areas. Due to the suppressed rainfall since late November, river water levels have been gradually declining across most riverine areas of the south.

[7] Deyr flooding drives elevated needs, though rain will aid drought recovery | FEWS NET
Somalia Seasonal Monitor December 14, 2023 - Somalia | ReliefWeb

3. DATA AND MAPS

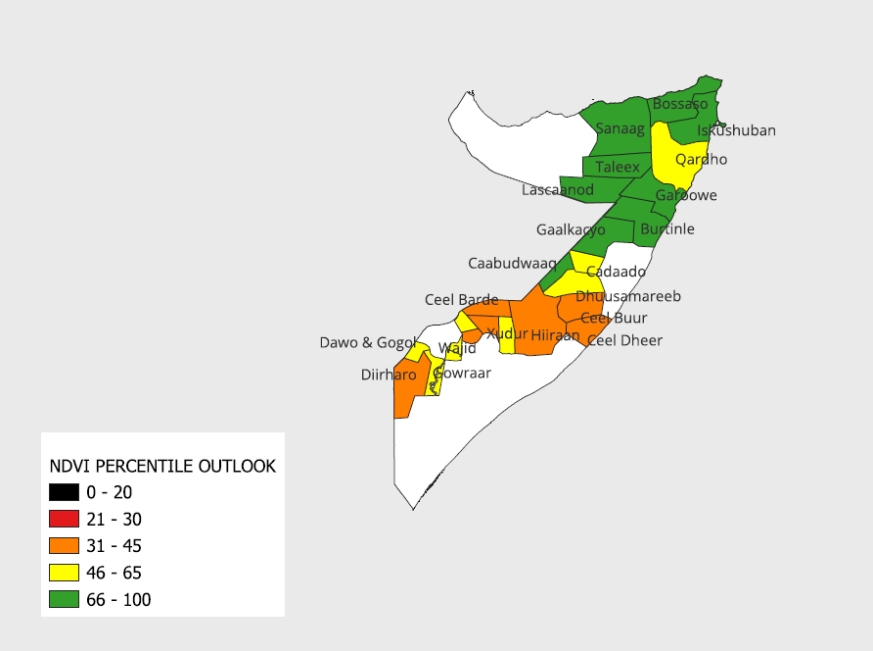
The table below shows a brief description of the data set used.

Table 3: Summary of the data characteristics

Data Source & Data Characteristic	
ITEM	**Description**
Data Source	eVIIRS
Characteristics	Visible and infrared imagery along with global observations of Earth's land, atmosphere, cryosphere, and ocean.
Historical time series length	10 years actual data (2012 – 2022) and 10 years of backwards normalized data (2002 – 2011)
Spatial Resolution	375 m X 375 m
Temporal Resolution	7- or 10-day data composited data sets updated every 5 days
Data Availability (free or premium)	Free
Instruments	Suomi National Polar-orbiting Partnership (Suomi NPP) and NOAA-20 satellites

The figure below shows the percentiles per UAI for historical data (2002 – 2022) and for the period under review. From the graph, there was no expectation of trigger based on the NDVI levels. Key to note that is that the percentiles are representative of the levels of the NDVI during the period under observation. This has been done cumulatively for the period and compared with the long-term distribution. This percentile confirms that none of the UAIs covered in Somalia triggered a payout, as they all show figures above 25%.

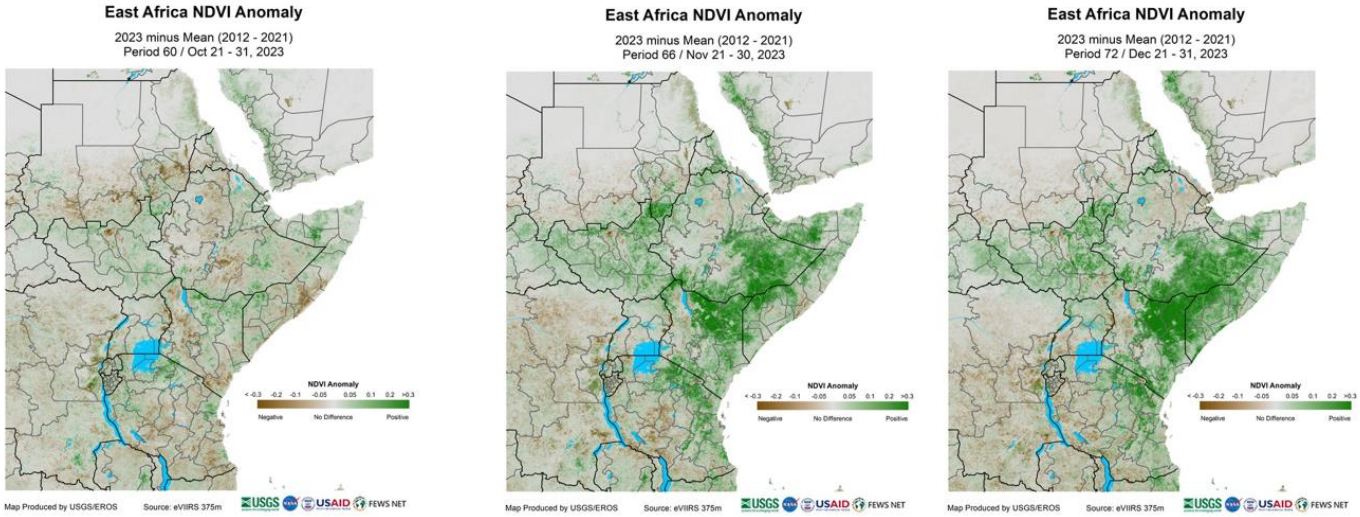
Figure 2: NDVI percentiles by UAIs for the Short Rains season



Source : Independent Calculating Agent - ACRE

Additionally, the map below shows the vegetation progression, within the East African Region, from the month of October 2023 to December 2023, with the level of greenness increasing in the areas under coverage in Somalia.

Figure 3: Horn of Africa NDVI Maps (October - December 2023)



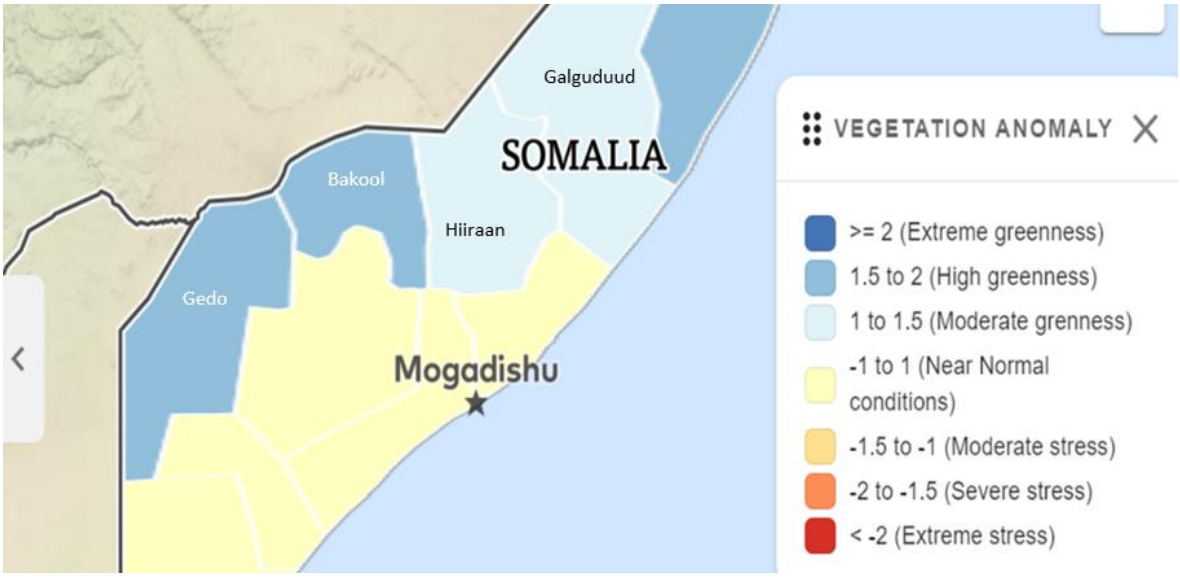
Source : https://earlywarning.usgs.gov/fews/search/Africa/East%20Africa

Progression of drought for the short rains season in East Africa, is consistent with the payout results indicated in this report.

Additional drought indicators were reviewed for the period under observation, and this was consistent with the payout results. These are:

1. **Vegetation Anomaly:** Positive anomalies seen as a result of increased rainfall and improved soil moisture which provided a conducive environment for vegetation growth.

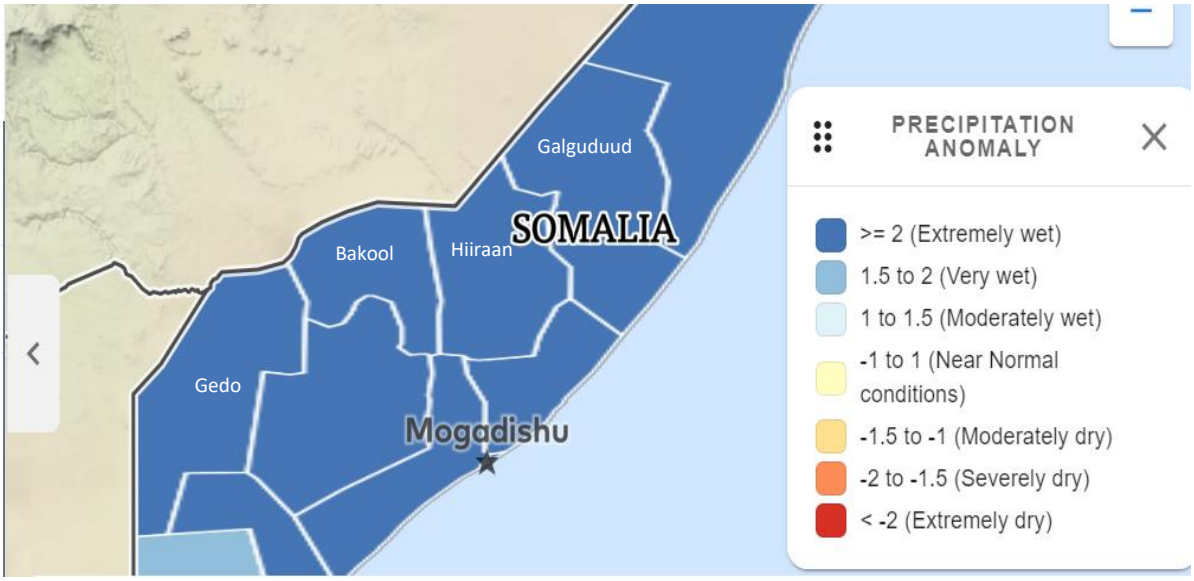
Figure 4: Vegetation Anomaly for Gedo, Bakool, Galguduud and Hiiraan (October - December 2023)



Source: [NGDI Dashboard (ngdi-dashboard.azurewebsites.net)]

2. **Precipitation Anomaly:** A review of the precipitation index showed that high levels of rainfall (above the historical average) lead to extremely wet conditions which is consistent with the NDVI data.

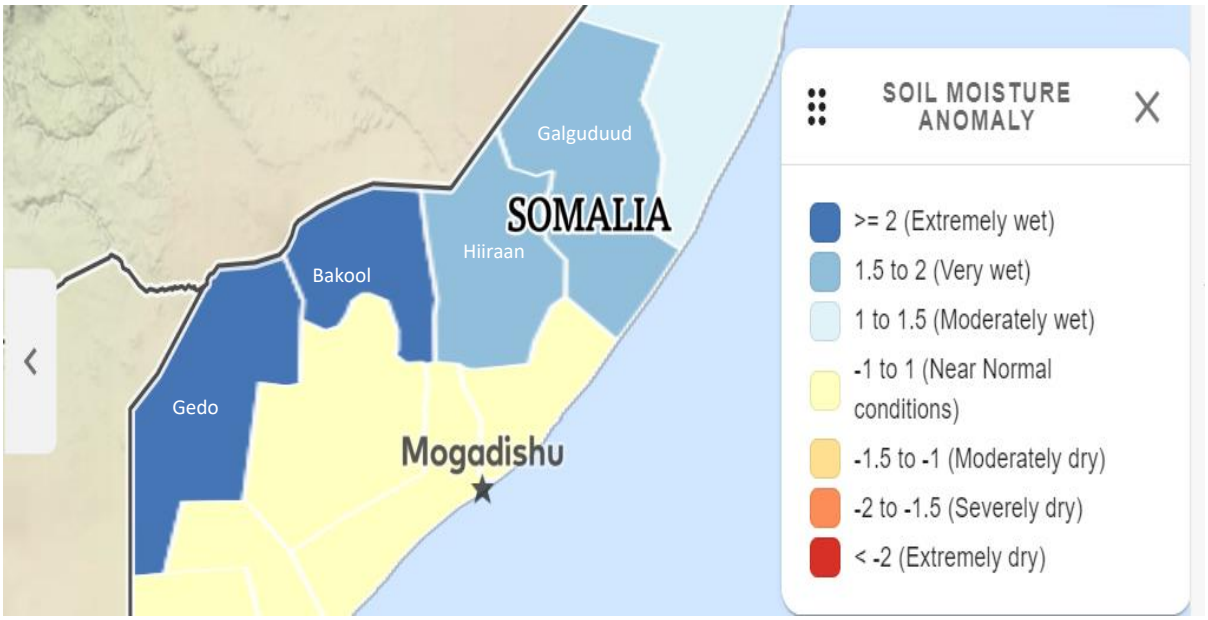
Figure 5: Precipitation Anomaly for Gedo, Bakool, Galguduud and Hiiraan (October - December 2023)



Source: [NGDI Dashboard (ngdi-dashboard.azurewebsites.net)]

3. **Soil Moisture Anomaly:** A review of the index confirmed that the increased rainfall caused the soil to become moister making it conducive to enhanced vegetation conditions.

Figure 6: Soil Moisture Anomaly for Gedo, Bakool, Galguduud and Hiiraan (October - December 2023)



Source: [NGDI Dashboard (ngdi-dashboard.azurewebsites.net)]

ANNEX TO THIS REPORT

1. Term sheet with the index
2. Graphic showing the progression of the drought from **October 2023 to December 2023** in the Horn of Africa
3. Final Data Report from independent calculation agent, Planet.