

# Climate Update



Food and Agriculture  
Organization of the  
United Nations



Food Security and Nutrition  
Assessment Unit - Somalia

November 2019 Monthly Rainfall and NDVI (Issued December 27, 2019)

## Highlights

The month of November 2019 was marked by heavy rains in most parts of the country with many stations recording above average rainfall, well distributed with more than 10 days of rainfall recorded during the month. However, northeastern parts of the country recorded relatively low rainfall, especially in Bari region, which was also mostly dry in the previous month of October. However, intensified rains in late November and early December alleviated the impact of the rainfall deficit in Bari region.

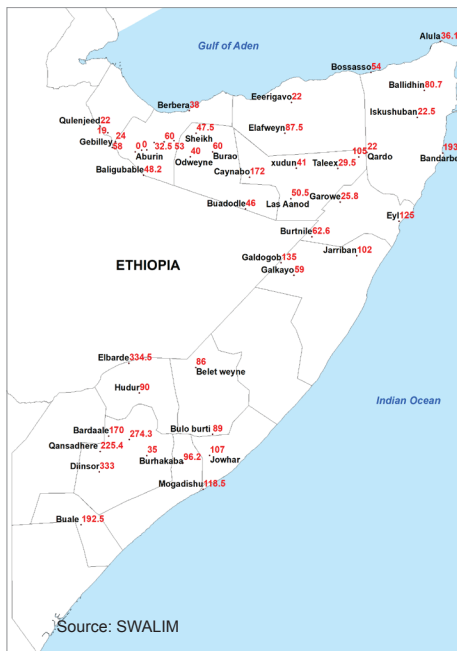
Most stations in the northwestern parts of Somalia recorded between 50mm and 100mm while the northeastern regions recorded below 50mm of cumulative rainfall during November. Some of the stations in southern parts of the country that recorded significant rainfall in November include: Elberde (334mm), Diinsor (333mm), Baidoa (274mm), Bardale (170mm), Bardheere (247mm), Jowhar (107mm), Mogadishu (119mm) and Bullo Burti (89mm).

Satellite-derived (TAMSAT) Rainfall Estimates (RFE) confirm the continuation of 2019 Deyr (October-December) rains through late November with enhanced precipitation in the Jubas, Shabelles, Bay and parts of Hiran regions (Maps 2-5 and 9). Vegetation cover measured through the Normalized Difference Vegetation Index (NDVI) for November 2019 indicates significant improvement of vegetation conditions in most parts of the country. Significant increase in vegetation vigor is evident in Agropastoral/Pastoral livelihoods of Bay, Bakol, Middle Shabelle parts of Galgadud, Gedo Mudug and Togdher (Maps 6-8 and 10).

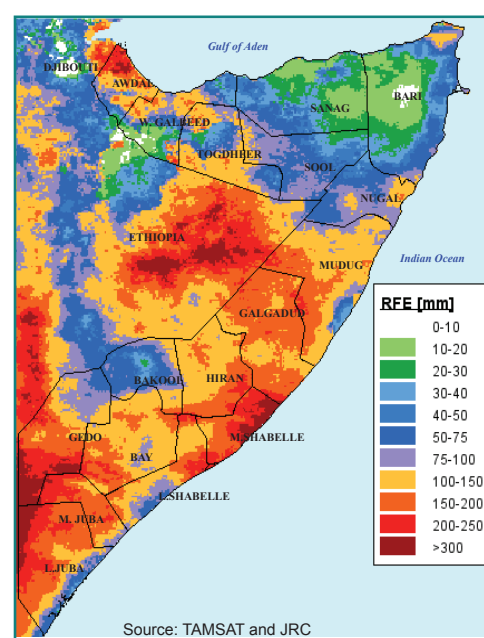
Rainfall in November continued to improve rangeland conditions, replenished most of the berkads, natural water catchments, and increased water levels in shallow wells. Livestock body conditions show a general improvement. Early-planted crops (maize and sorghum) in some riverine areas of Shabelle regions and most agro-pastoral livelihoods are performing well due to irrigation opportunities and favorable rains received in the first half of November 2019. Farmers in some in Buale (Middle Juba) and Bardhere (Gedo) have deliberately inundated their farms (desheks) in order to benefit from recessionary cultivation when the floodwater recedes in December/January.

Overall, rainfall through November 2019 has improved livestock production and reproduction and improved Deyr season crop harvest prospects across most parts of the country. Further improvement can be expected if the rains continue in December.

Map 1: Nov 2019 Monthly Rain Gauge Data (in mm)

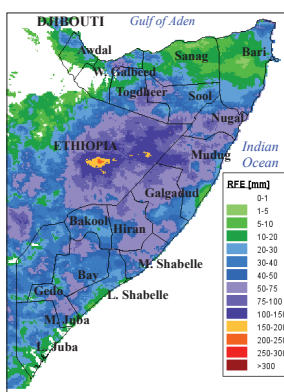


Map 2: Nov 2019 TAMSAT Monthly Rainfall Estimates

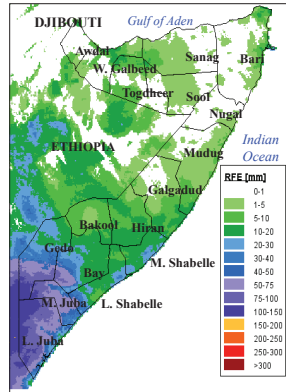


November 2019: Dekadal RFE Progression

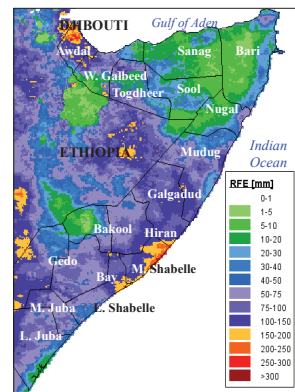
Map 3: 1st Dekad (1-10)



Map 4: 2nd Dekad (11-20)

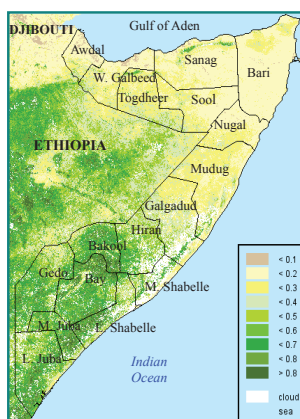


Map 5: 3rd Dekad (21-30)

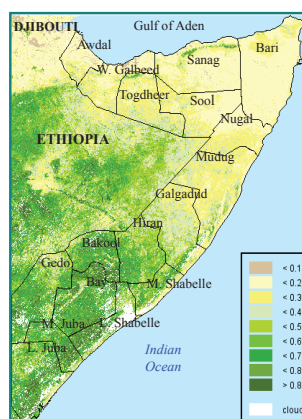


November 2019: Dekadal NDVI Progression

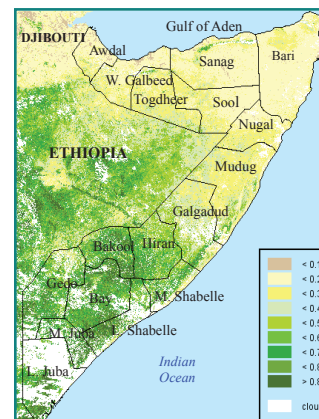
Map 6: 1st Dekad (1-10)



Map 7: 2nd Dekad (11-20)

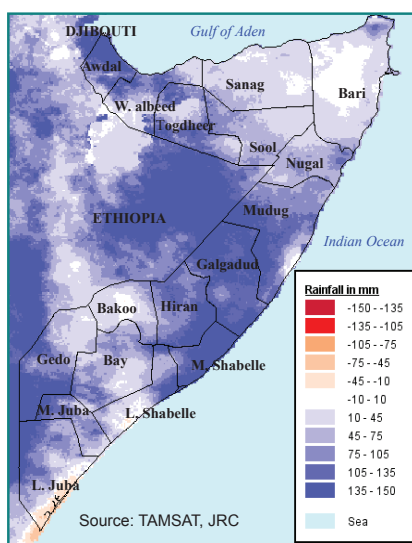


Map 8: 3rd Dekad (21-30)



## Monthly rainfall and NDVI performance November 2019

Map 9: Nov 2019 TAMSAT Rainfall Difference from Short Term Average (2001-2018)



Map 10: Nov 2019 NDVI Absolute Difference from Short Term Average (1999- 2018)

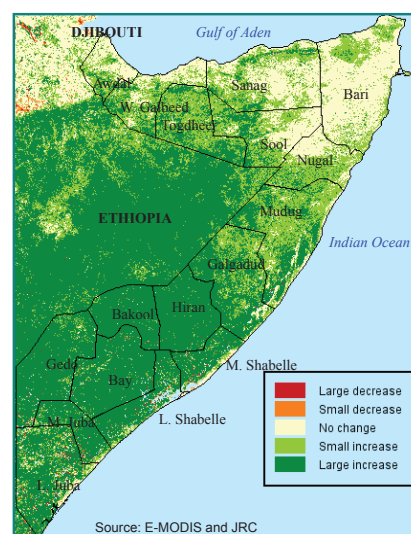


Table 1: Observed rain gauge data compared to Short term averages (November 2019)

Northern Regions (in mm)

Station Name	Region	dek 1	dek 2	dek 3	Nov-19	STA
Borama	Awdal	0.0	0.0	19.0	19.0	9.0
Qulenjeed	Awdal	0.0	0.0	22.0	22.0	14.0
Gebilley	Wogooyi Galbeed	0.0	0.0	58.0	58.0	10.0
Malawle	Wogooyi Galbeed	0.0	0.0	0.0	0.0	11.0
Wajaale	Wogooyi Galbeed	0.0	2.0	10.5	12.5	12.0
Hargeisa	Wogooyi Galbeed	0.0	0.0	63.5	63.5	8.0
Darawayne	Wogooyi Galbeed	0.0	0.0	32.5	32.5	11.0
Cadaadley	Wogooyi Galbeed	0.0	0.0	53.0	53.0	12.0
Dilla	Wogooyi Galbeed	0.0	0.0	24.0	24.0	12.0
Aburin	Wogooyi Galbeed	0.0	0.0	0.0	0.0	11.0
Dhubato	Wogooyi Galbeed	0.0	0.0	60.0	60.0	12.0
Baligubable	Wogooyi Galbeed	20.0	0.2	28.0	48.2	13.0
Berbera	Wogooyi Galbeed	38.0	0.0	0.0	38.0	1.0
Buadodle	Togdheer	22.0	0.0	24.0	46.0	13.0
Burao	Togdheer	0.0	19.0	41.0	60.0	8.0
Sheikh	Togdheer	4.0	13.0	30.5	47.5	25.0
Odweyne	Togdheer	0.0	0.0	40.0	40.0	11.0
Taleex	Sool	21.1	2.5	5.9	29.5	8.0
Las Aanod	Sool	41.5	0.0	9.0	50.5	10.0
Caynabo	Sool	138.0	0.0	34.0	172.0	13.0
Xudun	Sool	7.0	25.0	9.0	41.0	9.0
Eerigavo	Sanaag	0.0	0.0	22.0	22.0	5.0
Elafweyn	Sanaag	0.0	31.5	56.0	87.5	7.0
Bossasso	Bari	42.0	0.0	12.0	54.0	3.0
Qardo	Bari	8.0	5.0	9.0	22.0	5.0
Dangoroyo	Bari	80.0	25.0	0.0	105.0	11.0
Ballidhin	Bari	45.2	32.5	3.0	80.7	9.0
Alula	Bari	29.8	6.3	0.0	36.1	6.0
Bandarbeyla	Bari	149.0	20.0	24.0	193.0	11.0
Iskushuban	Bari	7.5	9.5	5.5	22.5	6.0
Galdogob	Mudug	63.0	64.5	7.5	135.0	19.0
Jarriban	Mudug	52.0	50.0	0.0	102.0	14.0
Galkayo	Mudug	38.0	0.0	21.0	59.0	15.0
Garowe	Nugaal	25.8	0.0	0.0	25.8	11.0
Eyl	Nugaal	83.0	0.0	42.0	125.0	15.0
Burtile	Nugaal	33.6	26.0	3.0	62.6	14.0

Southern Regions (in mm)

Station Name	Region	dek 1	dek 2	dek 3	Nov 19	STA
Burhakaba	Bay	0.0	0.0	35.0	35.0	99.0
Wanleweyne	Bay	34.7	22.0	39.5	96.2	98.0
Baidoa	Bay	144.5	74.0	55.8	274.3	89.0
Bardaale	Bay	109.0	51.5	9.5	170.0	63.0
Diinsor	Bay	115.4	124.9	92.7	333.0	98.0
Qansadhere	Bay	101.3	68.3	55.8	225.4	78.0
Bulo burti	Hiraan	46.5	16.0	26.5	89.0	87.0
Belet weyne	Hiraan	56.5	17.0	12.5	86.0	80.0
Buale	Middle juba	31.0	102.0	59.5	192.5	50.0
Jowhar	Middle Shabelle	27.0	59.0	21.0	107.0	83.0
Elbarde	Bakool	310.5	11.0	13.0	334.5	87.0
Hudur	Bakool	63.5	19.5	7.0	90.0	100.0
Mogadishu	Banadir	0.0	5.5	113.0	118.5	84.0

\*indicates missing data

### Monthly rainfall and NDVI performance maps

The Mapped NDVI and RFE above represent the differences from Long Term Mean. E-MODIS NDVI is presented as absolute difference from Long Term Mean for the same period (current - long term mean), while TAMSAT-RFE is presented as the relative difference from Long Term Mean (Current\*100)/LTM.

### Seasonal Trend Graph

The maps and graphs on pages 3 and 4 are produced in collaboration with the FOODSEC Action of the Joint Research Centre of the European Commission. The graphs present seasonal trends of crop specific NDVI (Normalised Difference Vegetation Index) as lines and rainfall values (RFE) as bars for each of the delineated land cover and administrative units (regions and districts). For more information or request on available data, please send an email to: data@fsnau.org.

Primary data sources are NOAA/USGS, European Centre for Medium- range Weather Forecast (ECMWF), MARS-JRC, FSNAU and SWALIM. Maps and graphs on this bulletin are produced from four sources.

- Current Rainfall Estimates and NDVI data are derived from NOAA/CPC and DEVCOCAST ([www.devcoast.eu](http://www.devcoast.eu)) respectively, while the rain gauge data is collected by FAO-SWALIM and FEWSNET.

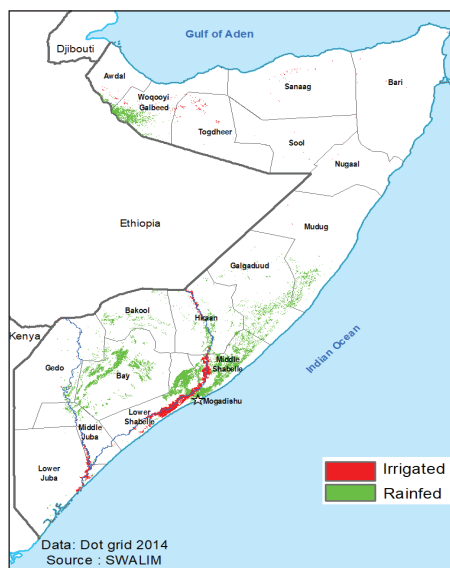
- The seasonal profiles on page 3 and 4 are produced in collaboration with JRC-MARS. For more information visit <http://mars.jrc.europa.eu/mars/About-us/FOODSEC> For more information on NDVI visit <http://earlywarning.usgs.gov/adds> and <http://fsausomali.org/fileadmin/uploads/1308.pdf>

- This report is a compilation of climate data and field reports on Somalia that FSNAU and FEWS NET regularly review for analysis. For more information on data sources, please refer to page 2.

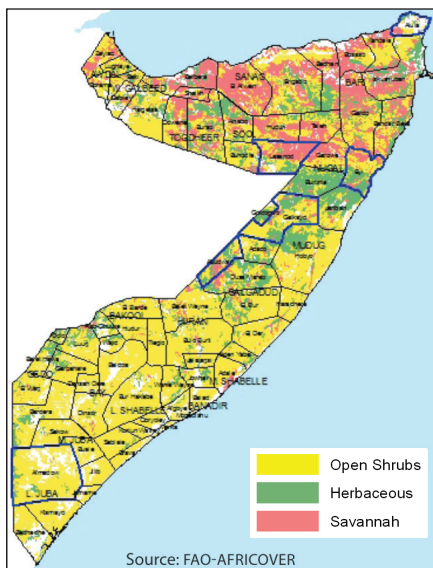
The TAMSAT information is available on <http://www.met.reading.ac.uk/tamsat/about/>

## Seasonal rainfall and NDVI trends by region November 2019

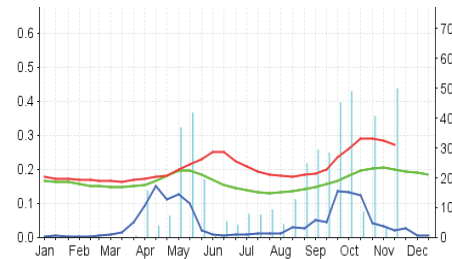
Map 11: Agricultural Areas



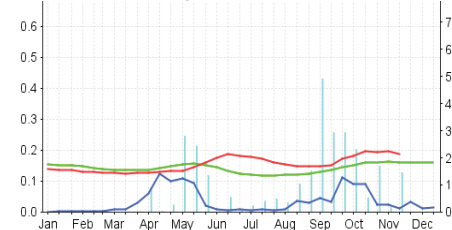
Map 12: Pastoral Areas



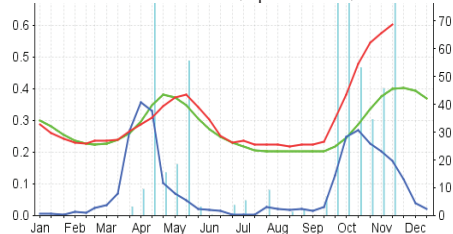
Togdheer Pastoral (Savannah)



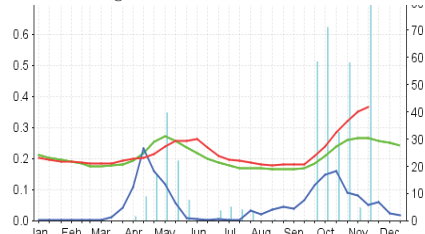
Saanag Pastoral (Savannah)



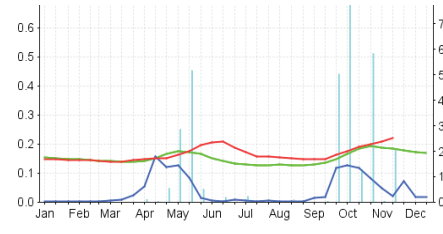
Gedo Pastoral (Open Shrubs)



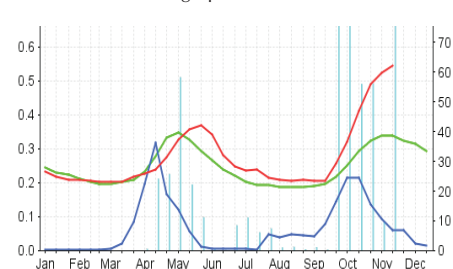
Galgaduud Pastoral (Herbaceous)



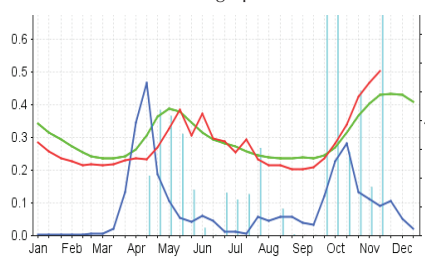
Nugal Pastoral (Open Shrubs)



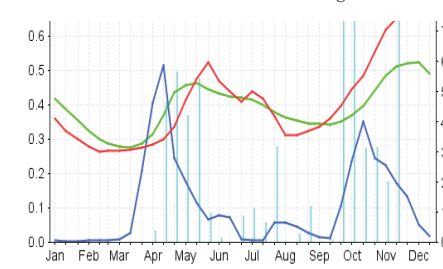
Hiran Agropastoral (Rainfed)



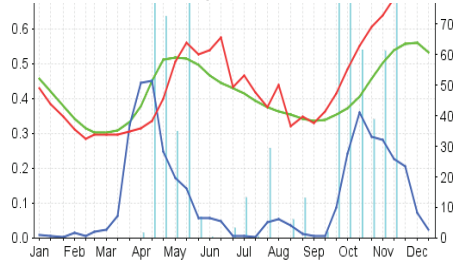
Middle Shabelle Agropastoral (Rainfed)



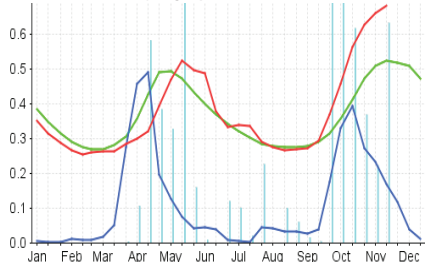
Lower Shabelle Riverine (Irrigated)



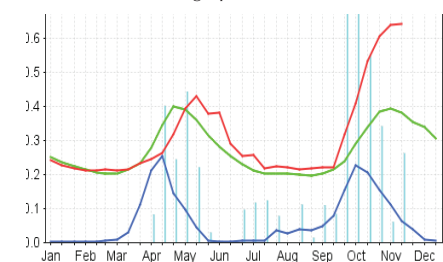
Middle Juba Agropastoral (Rainfed)



Bay Agropastoral (Rainfed)



Bakool Agropastoral (Rainfed)

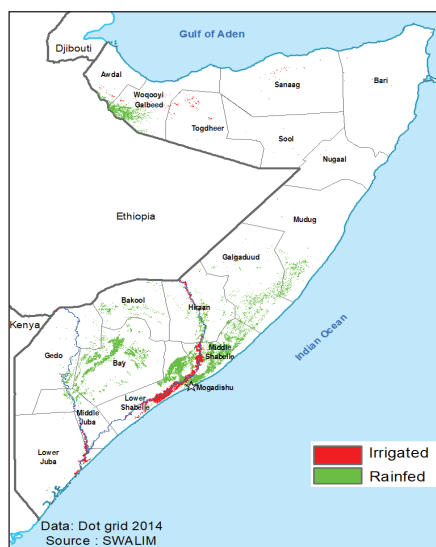


 RFE 2019 
  RFE STA: 2001-2018 
  NDVI 2019 
  NDVI STA 1999-2018

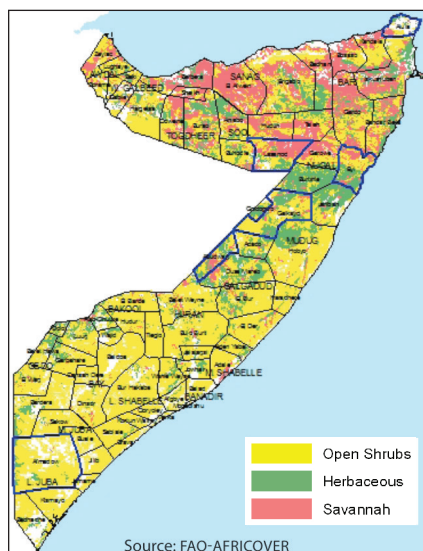


## Seasonal rainfall and NDVI trends for selected districts November 2019

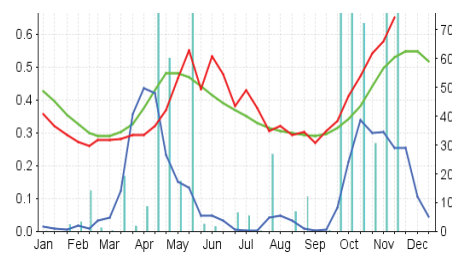
Map 13: Agricultural Areas



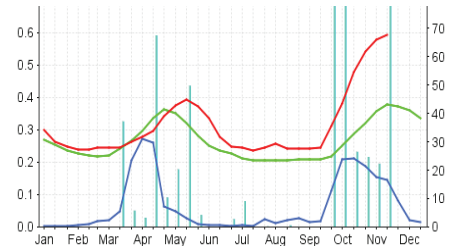
Map 14: Pastoral Areas



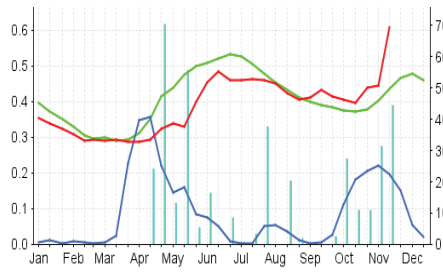
Afmadow Pastoral (Open Shrubs)



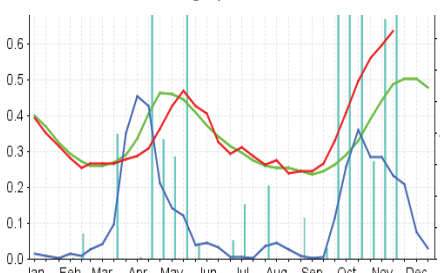
Beletweyn Riverine (Irrigated)



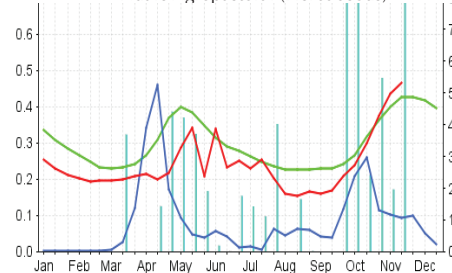
Jamame Riverine (Irrigated)



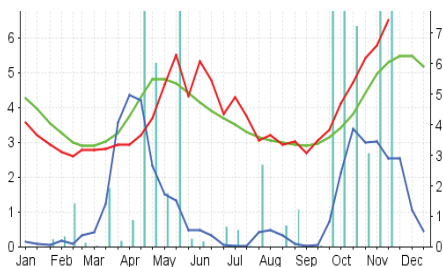
Sakow Agropastoral (Rainfed)



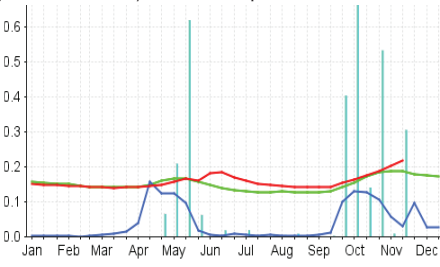
Adale Agropastoral (Herbaceous)



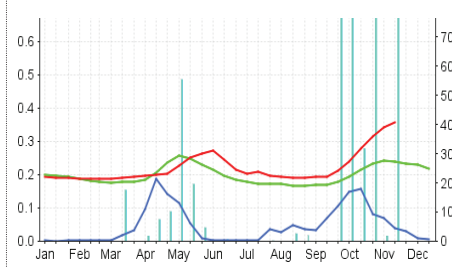
Afmadow Pastoral (Herbaceous)



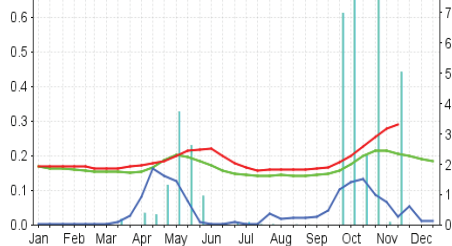
Eyl Pastoral (Open Shrubs)



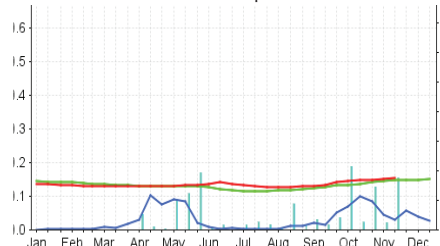
Abudwak Pastoral (Herbaceous)



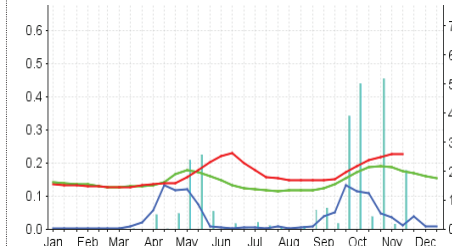
Galkayo Open Shrubs



Alula Pastoral (Open Shrubs)



Lasanod Pastoral (Herbaceous)



 RFE 2019 
  RFE STA: 2001-2018 
  NDVI 2019 
  NDVI STA 1999-2018