

# Climate Update



Food and Agriculture  
Organization of the  
United Nations



SWALIM

May 2019 Monthly Rainfall and NDVI (Issued June 18, 2019)

## Highlights

Following a delayed and poor start of the 2019 Gu (April-June) rainy season in April, there has been increased rainfall activity across the country in May, especially during the second half of the month. Some of the stations that recorded significant amounts of rainfall in the southern regions include: Baidoa (174mm), Dinsor (108mm), Huduur (196mm), Belet Weyne (189mm), Bulo Burti (115mm). Similarly, significant amounts of rainfall was recorded in some stations of the northern regions such as Burao (186mm), Las Anod (170mm), Galdogob (160mm), Garowe (108mm), Boroma (99mm), Hargeisa (96mm) and Erigavo (77mm). Although most regions received good rainfall intensity, the spatial distribution was uneven. Despite overall improvements in rainfall amounts in May, some stations in parts of central regions, Middle Shabelle and Gedo regions recorded below normal rains.

Satellite derived Rainfall Estimates (RFE) show a progressive increase in rainfall amounts from dekad 1 to dekad 3 of May (Maps 3-5) with more rainfall received in the last ten days of the month. Accordingly, most areas registered slightly above normal rainfall amounts of between 10mm to 50mm as can be seen on Map 9. However, some areas of the north, especially northeast experienced rainfall deficit.

Vegetation cover measured through the Normalized Difference Vegetation Index (NDVI) shows a significant improvement during the month of May 2019 in most southern regions due to improved rainfall amount and coverage. There is no change in vegetation cover in May in most parts of northeast and northwest regions due to relatively low rainfall amounts received in these areas during the month.

Improved rainfall during the month of May has improved availability of browse, pasture and water, with lower water prices in May in most regions compared to prices in April. Water catchments have also been replenished, thereby ending expensive water trucking in most parts of the country. Exceptions are parts of Hawd of Togdheer, Addun and Coastal Deed of northeast where pasture availability and livestock body conditions remain below average. However, pastoralists in these areas will likely benefit from improved migration options with expected gain in livestock body weight in June.

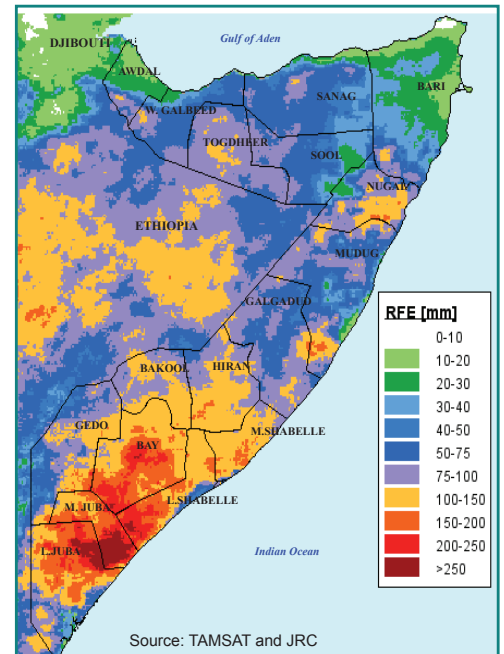
The Shabelle and Juba river levels remained stable in May and below the flood risk level due to a reduction in rainfall activity in the upper catchments of the two rivers in the Ethiopian highlands. Riverine flooding in Jowhar district of Middle Shabelle and flash floods in Garowe district of Nugal region have caused significant damage to crops, livestock and infrastructure during the month of May.

Improved rainfall in May is easing drought conditions and it is expected to have beneficial impact on livestock body condition and more animals (small ruminants) are conceiving with delayed benefits (livestock births, increases in herd size and access to milk) likely to be realized towards the end of September/early October. For crop growing areas, the delayed and poor start of Gu season rainfall in March and April, drought conditions have significantly affected planting and germination. Improvements in rainfall in May will only benefit late planted crops. Therefore, the overall Gu season cereal harvest is likely to be approximately 50 percent below average.

Map 1: May 2019 Monthly Rain Gauge Data

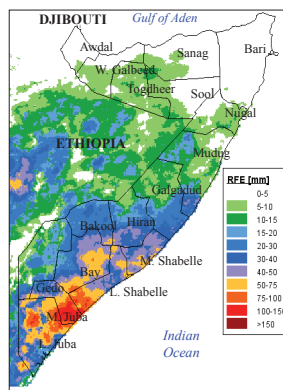


Map 2: May 2019 Monthly Rainfall Estimates (TAMSAT)

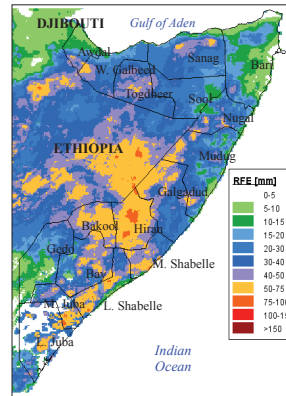


May 2019: Dekadal Rainfall (RFE) Progression

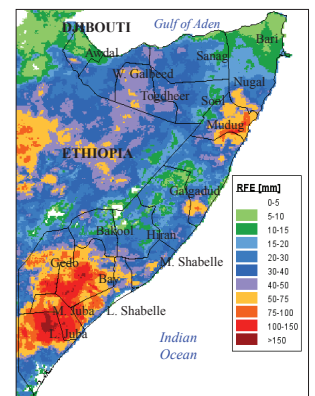
Map 3: 1st Dekad (1-10)



Map 4: 2nd Dekad (11-20)

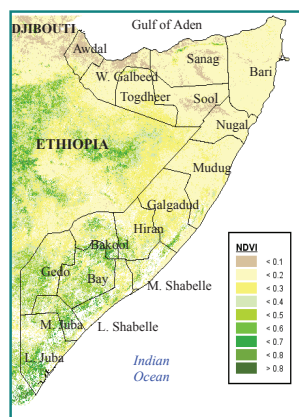


Map 5: 3rd Dekad (21-30)

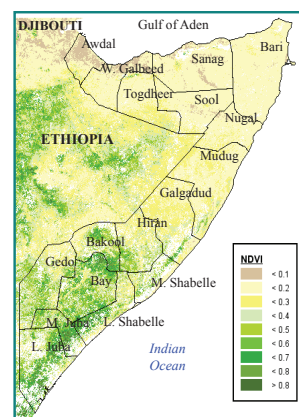


May 2019: Dekadal Vegetation Cover (NDVI) Progression

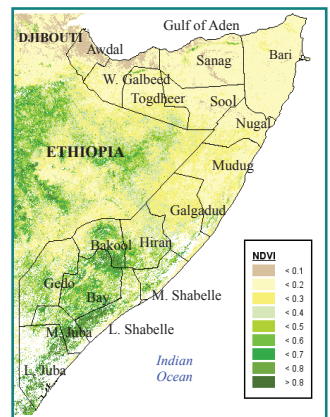
Map 6: 1st Dekad (1-10)



Map 7: 2nd Dekad (11-20)

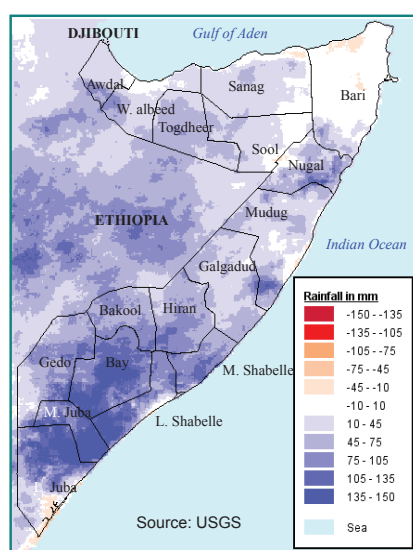


Map 8: 3rd Dekad (21-30)



# Monthly rainfall and NDVI performance

Map 9: May 2019 Estimated Rainfall Difference (in mm) From Short Term Average (1999-2018)



Map 10: May 2019 Vegetation Cover (NDVI) Absolute Difference from Short Term Average (2001-2018)

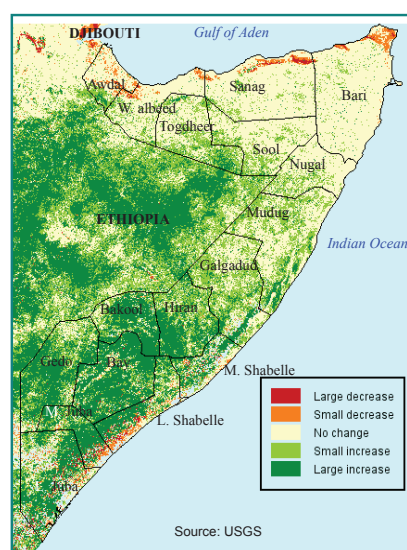


Table 1: Observed rain gauge data compared to short term monthly averages (May 2019)

## Northern Regions

Region	Station Name	dek 1	dek 2	dek 3	May-19	STA
Awdal	Borama	0.0	74.5	24.5	99.0	57.0
Awdal	Qulenjeed	0.0	23.5	48.0	71.5	63.0
Wogooyi Galbeed	Gebilley	0.0	59.0	16.0	75.0	61.0
Wogooyi Galbeed	Malawle	0.0	75.5	0.0	75.5	65.0
Wogooyi Galbeed	Wajaale	7.0	71.5	47.0	125.5	67.0
Wogooyi Galbeed	Hargeisa	0.0	96.0	0.0	96.0	65.0
Wogooyi Galbeed	Daraweyne	0.0	75.5	6.5	82.0	59.0
Wogooyi Galbeed	Cadaadley	0.0	59.0	71.0	130.0	53.0
Wogooyi Galbeed	Dilla	0.0	59.0	12.0	71.0	65.0
Wogooyi Galbeed	Aburin	0.0	7.0	6.5	13.5	65.0
Wogooyi Galbeed	Dhubato	0.0	79.0	0.0	79.0	57.0
Wogooyi Galbeed	Baligubable	0.0	0.5	11.0	11.5	67.0
Togdheer	Burao	0.0	186.0	0.0	186.0	68.0
Togdheer	Sheikh	0.0	80.0	10.0	90.0	76.0
Togdheer	Odweyne	0.0	11.0	0.0	11.0	59.0
Togdheer	Buadodde	37.5	35.0	10.0	82.5	57.0
Sanaag	Eerigavo	77.0	0.0	0.0	77.0	59.0
Sanaag	Elafweyn	0.0	19.0	0.0	19.0	45.0
Sool	Caynabo	0.0	61.0	0.0	61.0	55.0
Sool	Xudun	0.0	0.0	9.0	9.0	43.0
Sool	Taleex	0.0	12.0	3.8	15.8	40.0
Sool	Las Aanod	10.0	86.0	74.5	170.5	52.0
Bari	Qardo	16.0	22.0	7.5	45.5	31.0
Bari	Dangoroyo	0.0	0.0	74.3	74.3	36.0
Bari	Ballidhin	0.0	20.7	8.2	28.9	18.0
Bari	Bandarbeyla	0.0	0.0	0.0	0.0	28.0
Bari	Iskushuban	0.0	13.0	27.0	40.0	21.0
Nugaal	Garowe	0.0	57.5	50.2	107.7	43.0
Nugaal	Eyl	0.0	7.0	28.0	35.0	57.0
Nugaal	Burtnile	0.0	5.0	99.9	104.9	49.0
Mudug	Galdogob	150.0	10.0	0.0	160.0	55.0
Mudug	Jarriban	0.0	3.0	4.0	7.0	43.0
Mudug	Galkayo	34.5	12.0	0.0	46.5	50.0

## Southern Regions

Region	Station Name	dek 1	dek 2	dek 3	May 19	STA
Bakool	Hudur	104.0	92.0	0.0	196.0	75.0
Bakool	Elbarde	20.0	0.0	0.0	20.0	75.0
Bay	Baidoa	65.5	85.7	22.5	173.7	95.0
Bay	Diinsor	59.0	20.7	28.0	107.7	70.0
Bay	Bardaale	27.4	37.5	27.0	91.9	79.0
Bay	BurHakaba	56.0	10.0	15.0	81.0	130.0
Bay	Wanleweyne	54.5	39.5	0.0	94.0	130.0
Hiraan	Belet weyne	14.0	51.0	124.0	189.0	86.0
Hiraan	Bulo burti	25.0	26.0	64.0	115.0	64.0
Hiraan	Mataban	0.0	110.0	0.0	110.0	75.0
Banadir	Mogadishu	36.0	0.0	11.5	47.5	75.0

\*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 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](mailto: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.

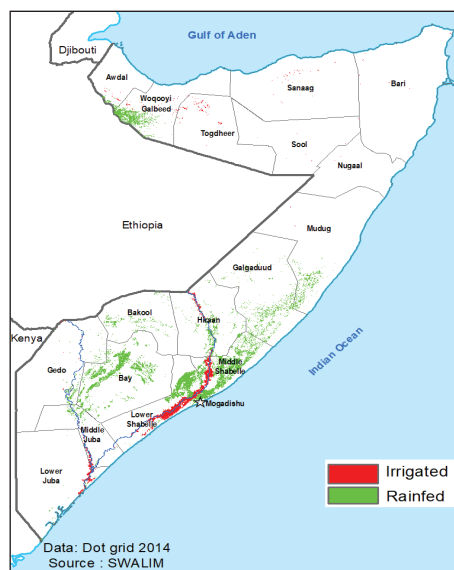
- Current Rainfall Estimates and NDVI data are derived from NOAA/CPC and DEVCOCAST ([www.devcoast.eu](http://www.devcoast.eu)) respectively, while the rain gauge data is collected by FAO-SWALIM and FEWSNET.

- 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>

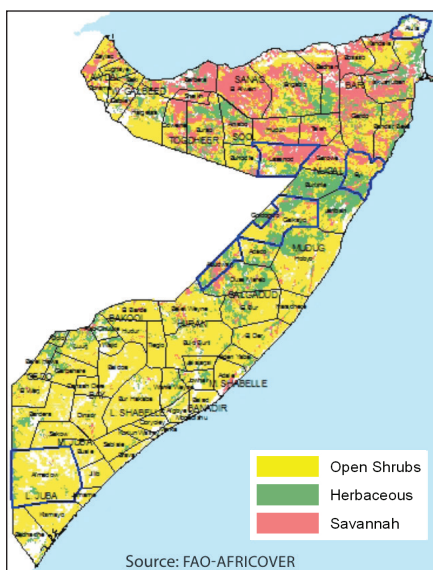
- This report is a compilation of climate data and field reports on Somalia that FSNAU and FEWS NET regularly review for analysis. The TAMSAT information is available on <http://www.met.reading.ac.uk/tamsat/about/>

## Seasonal rainfall and NDVI trends by region

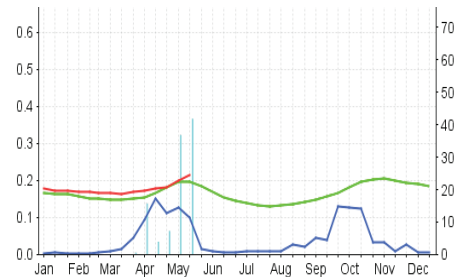
Map 11: Agricultural Areas



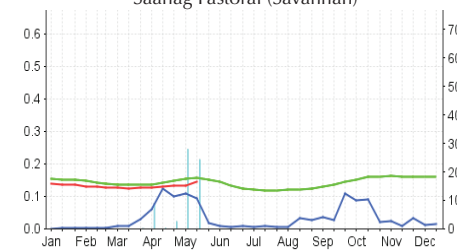
Map 12: Pastoral Areas



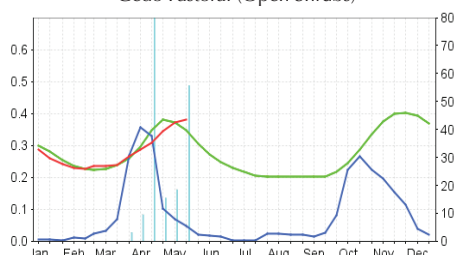
Togdheer Pastoral (Savannah)



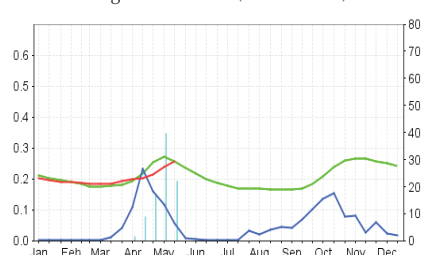
Saanag Pastoral (Savannah)



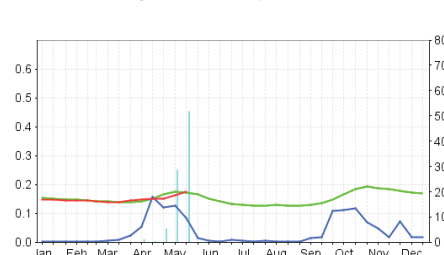
Gedo Pastoral (Open Shrub)



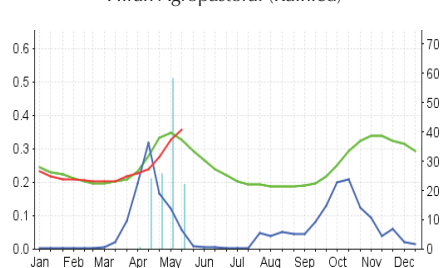
Galgaduud Pastoral (Herbaceous)



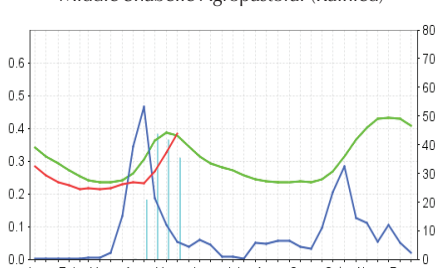
Nugaal Pastoral (Open Shrub)



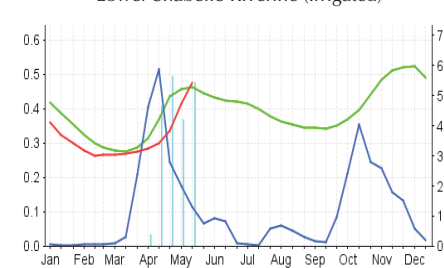
Hiran Agropastoral (Rainfed)



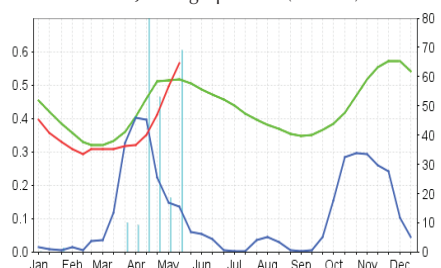
Middle Shabelle Agropastoral (Rainfed)



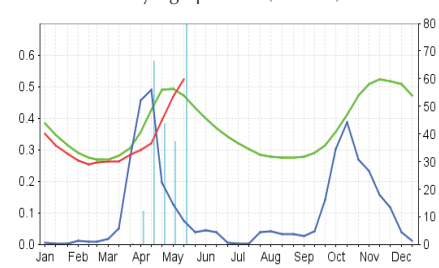
Lower Shabelle Riverine (Irrigated)



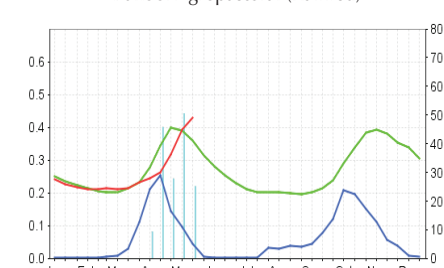
Lower Juba Agropastoral (Rainfed)



Bay Agropastoral (Rainfed)



Bakool Agropastoral (Rainfed)

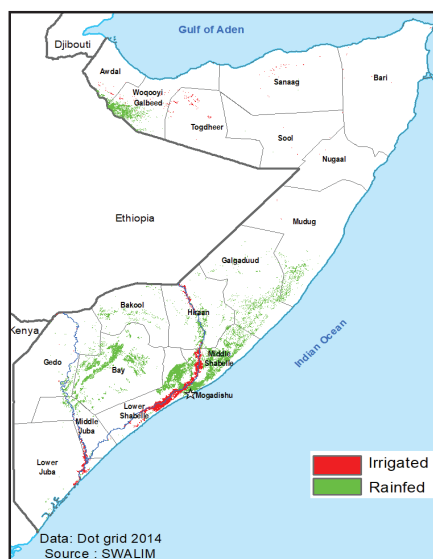


 RFE 2019 
  RFE AVG: 2001-2018 
  NDVI-C 2019 
  NDVI-C STA MEAN (1999-2018)

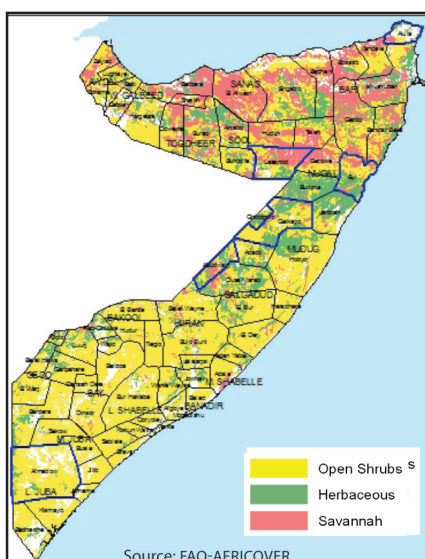


## Seasonal rainfall and NDVI trends for selected districts

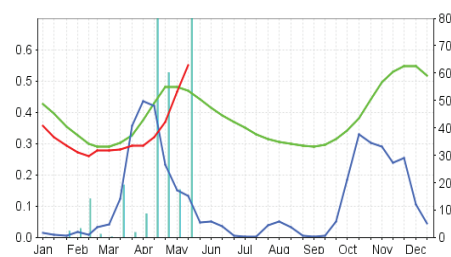
Map 13: Agricultural Areas



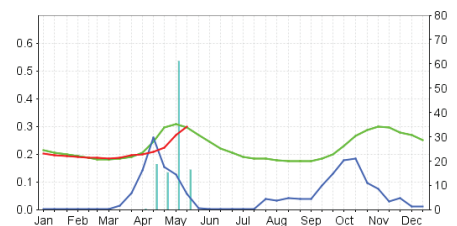
Map 14: Pastoral Areas



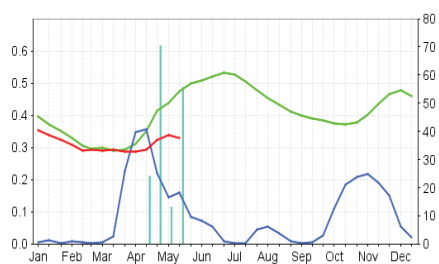
Afmadaw Pastoral (Open Shrubs)



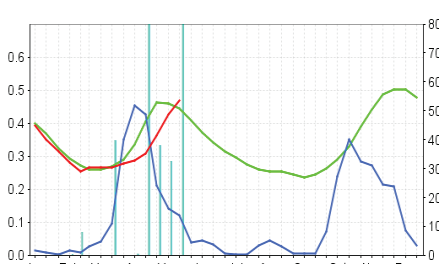
Beletweyn Riverine (Irrigated)



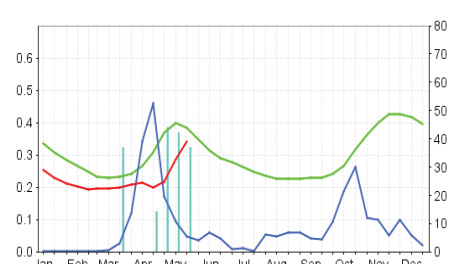
Jamame Riverine (Irrigated)



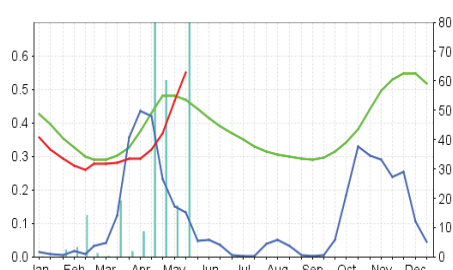
Sakow Agropastoral (Herbaceous)



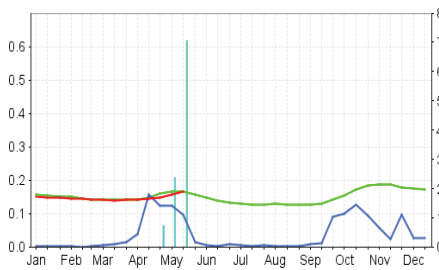
Adale Agropastoral (Herbaceous)



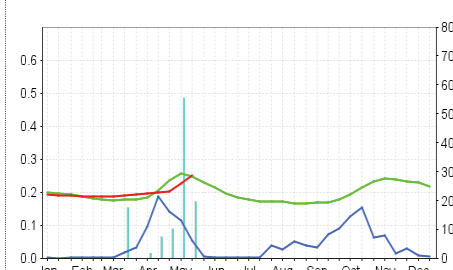
Afmadaw Pastoral (Herbaceous)



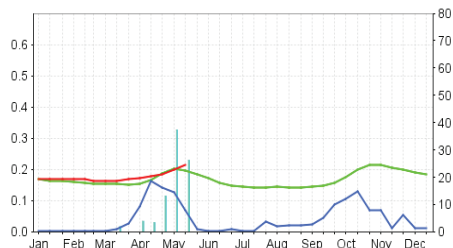
Eyl Pastoral (Open Shrubs)



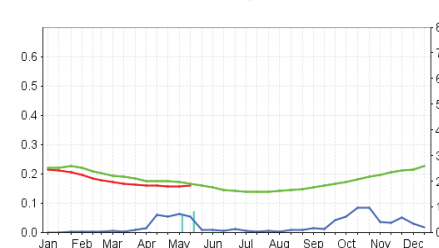
Abudwak Pastoral (Herbaceous)



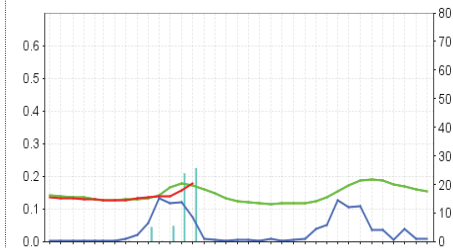
Galkayo Open Shrubs



Alula Pastoral (Open Shrubs)



Lasanod Pastoral (Herbaceous)



 RFE 2019 
  RFE AVG: 2001-2018 
  NDVI-C 2019 
  NDVI-C STA MEAN (1999-2018)