FAMINE EARLY WARNING SYSTEMS NETWORK

Mozambique

Monthly Climate and Weather

20 March 2025

Highlights

- La Niña conditions weakened during February 2025. Below-average sea-surface-temperatures (SSTs) weakened over the central and east-central equatorial Pacific Ocean. El Niño Southern Oscillation (ENSO)-neutral conditions are expected to develop during April and persist with a 62% chance through June – August 2025, according to the latest ENSO outlook.
- During December 2024 - February 2025, near-average rainfall prevailed over Mozambique. However, cumulative rainfall was 20-50% below average over the central, southern, and pocket areas of the western and northern provinces. During April – June 2025, rainfall forecasts call for below-average rainfall over southern Mozambique.
- During December 2024 - February 2025, maximum temperatures were 1-5°C above average in Mozambique. Minimum temperatures were 1-3°C above average in the southern provinces, but were 1-2°C below average in western Niassa. During April – June 2025, temperature forecasts favor above average temperatures across Mozambique, with increased probabilities in the northern and southern provinces.
- During December 2024 - February 2025, drier-than-average conditions were observed over central and northern Mozambique. During the next four weeks, drought forecasts suggest a slight ease to the dryness in central Mozambique, but indicate a persistence to the drier-than-average conditions in the northern provinces.
- As of late February 2025, maize crop growing conditions are mostly *favorable* in Mozambique due to an improvement in rainfall since January. Crop conditions are, however, under *watch* in Cabo Delgado owing to conflict.

The FEWS NET Monthly Climate and Weather information bulletin is based on current weather and climate information and monthly and seasonal outlooks from the NOAA CPC. Information on crops, soil moisture, flooding, and evapotranspiration data were produced by FEWS NET, USGS, NASA and USDA. Various sources were used to assess impacts of extreme conditions. Questions or comments about this product may be directed to Dr. Wassila Thiaw, Head, International Desks/NOAA, wassila.thiaw@noaa.gov. Questions about the USAID FEWS NET activity may be directed to Dr. James Verdin, Program Manager, FEWS NET/USAID, jverdin@usaid.gov.

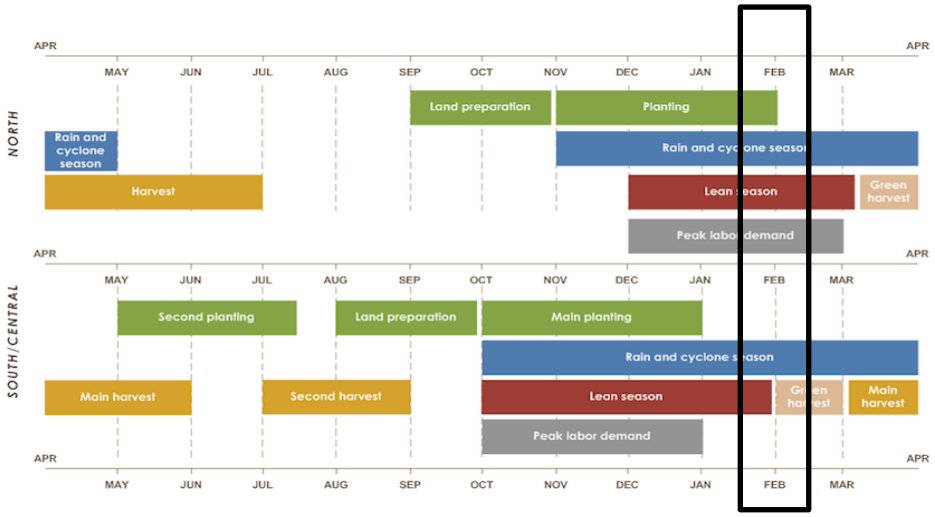


Figure 1: Seasonal calendar for Mozambique. **Source: FEWS NET**

Current Climate Modes and Teleconnections

- During February, La Niña conditions weakened over the equatorial Pacific Ocean. Below-average SSTs decreased over the central and east-central equatorial Pacific. Also, below-average subsurface temperatures weakened, but negative anomalies persisted at depth in the eastern Pacific and central Pacific. Low-level wind anomalies remained easterly over the western and central Pacific, while upper-level wind anomalies were westerly over the east-central Pacific.
- The ENSO outlook indicates that ENSO-neutral conditions are predicted to develop during the next month and persist with a 62% chance through June – August 2025 (**Fig. 2**). The latest update of the NOAA Climate Prediction Center's ENSO diagnostic discussion can be found here.

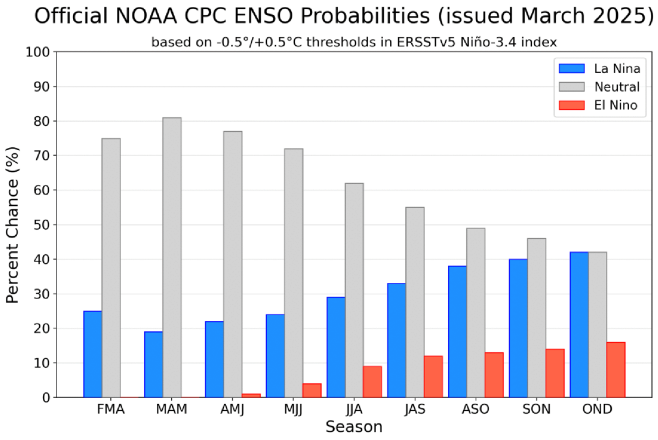


Figure 2: Official CPC ENSO probabilities outlook. **Source: NOAA/NCEP**

Extreme Events

- During late February, Tropical Cyclone HONDE developed over the southern part of the Channel of Mozambique, bringing heavy rainfall that affected southern Mozambique and southern Madagascar.
- Tropical Cyclone JUDE made landfall over the Nampula Province of Mozambique on 10 March and was approximated at 70 km southeast of Chinde town in the Zambézia Province as of 13 March 2025. Tropical Cyclone JUDE has resulted in fatalities, caused widespread destructions and affected over 100,000 people, according to reports.
- Over the past 30 days, an anomalous low-level cyclonic circulation, located off of southern Madagascar, has led to stronger-than-average and converging westerly winds over central Mozambique.

Rainfall/Precipitation

Past 3 months (December 2024 - February 2025):

- **Totals:** During December 2024 - February 2025, total rainfall varied between 200-750 mm in Mozambique (**Fig. 3a**). However, local areas of Nampula, Zambézia, Cabo Delgado, and Tete registered rainfall amounts exceeding 750 mm.
- **Anomalies:** During December 2024 - February 2025, while rainfall was near-average across much of the interior of Mozambique, rainfall was 20-50% below average over the central, southern, and pocket areas of the western, and northern provinces (**Fig. 3b**).

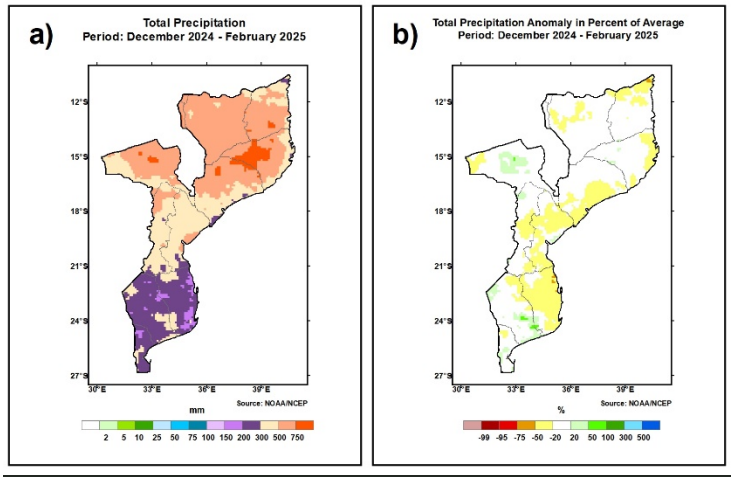


Figure 3: Spatial distribution for December 2024 - February 2025 (a) total precipitation and (b) total precipitation anomaly in percent of average. **Source: NOAA/NCEP**

Past 1 month (February 2025):

- **Totals:** During February, heavy rainfall between 200-500 mm, was observed over western and northern Mozambique, while rainfall accumulation less than 75 mm was received across the southern provinces and along coastal areas of Sofala and Inhambane (**Fig. 4a**).
- **Anomalies:** During February, rainfall was 50-300% above average over western, northern, and pocket areas of southern Mozambique (**Fig. 4b**). Over Tete, cumulative rainfall was 82% above average (**Table 1**). In contrast, rainfall was 20-95% below average along coastal areas of central Mozambique and parts of Maputo, Gaza, Inhambane, and Nampula.

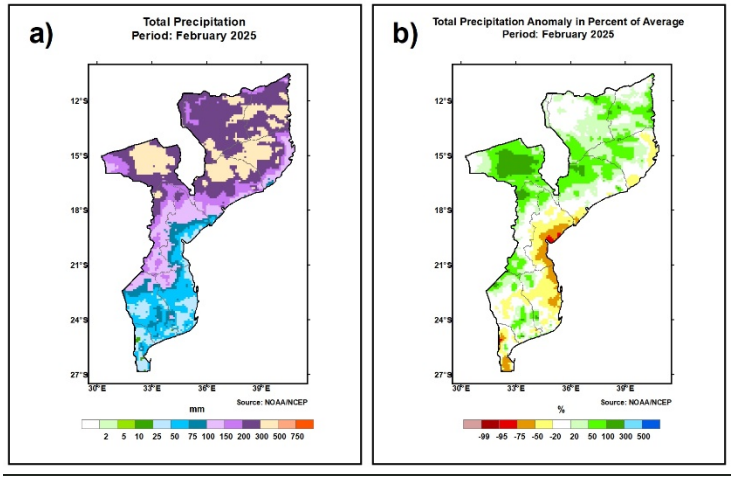


Figure 4: Spatial distribution for February 2025 (a) total precipitation and (b) total precipitation anomaly in percent of average. **Source: NOAA/NCEP**

Monthly and Seasonal Forecasts (April 2025 and April – June 2025):

- **Monthly:** During April 2025, rainfall forecasts suggest below-average rainfall over Zambézia, Gaza, Maputo, and part of Inhambane (**Fig. 5a**). Probabilities for below-average rainfall are expected to exceed 40% over southeast Gaza and southwestern Inhambane.

- **Seasonal:** During April – June 2025, rainfall forecasts favor below-average rainfall in southern Mozambique and over local areas of Tete, Sofala, and Zambézia (**Fig. 5b**). Probabilities for below-average rainfall will exceed 40% across Gaza, Maputo, and much of Inhambane.

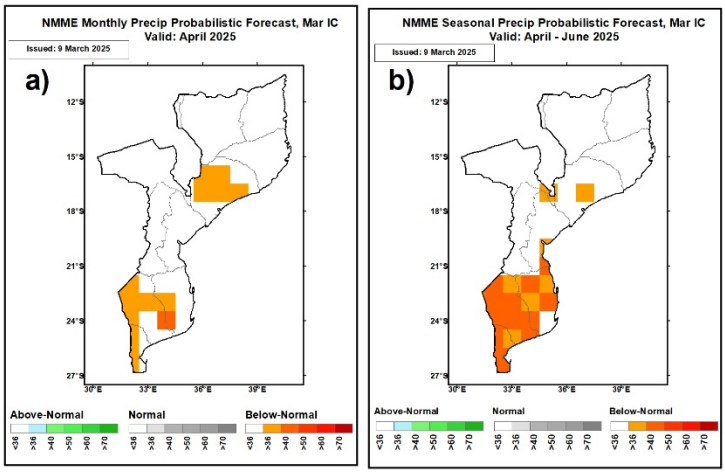


Figure 5: Rainfall forecast for (a) April 2025 and (b) April – June 2025. **Source: NOAA/NCEP**

Table 1: Total rainfall and anomalies for the past three months and one month and seasonal rainfall climatology and anomaly forecast over provinces of Mozambique.

Location	Past 3-Month		Past 1-Month		Seasonal Forecast	
	Total (mm)	Anomaly (%)	Total (mm)	Anomaly (%)	Climatology (mm)	Anomaly (mm)
Cabo Delgado province	558	-10	283	39	211	7
Gaza province	260	3	72	16	73	-13
Inhambane province	241	-27	68	-16	90	-12
Manica province	420	-11	165	36	85	-6
Maputo province	256	2	46	-24		
Nampula province	623	-7	250	21	194	8
Niassa province	593	-9	259	30	124	7
Sofala province	407	-20	99	-26	94	-4

Tete province	560	1	272	82	59	-1
Zambézia province	551	-13	240	36	167	9

Temperature

Past 3 months (December 2024 - February 2025):

- **Maximums:** During December 2024 - February 2025, maximum temperatures were 1-5°C above average across Mozambique, with northern Tete experiencing the hottest conditions (**Fig. 6a**). Maximum temperatures averaged over Tete province were 3.8°C above average (**Table 2**).
- **Minimums:** During December 2024 - February 2025, minimum temperatures were 1-3°C above average over southern Mozambique, Manica, and parts of Tete, Sofala, and Zambézia, but were 1-2°C below average over western Niassa (**Fig. 6b**).

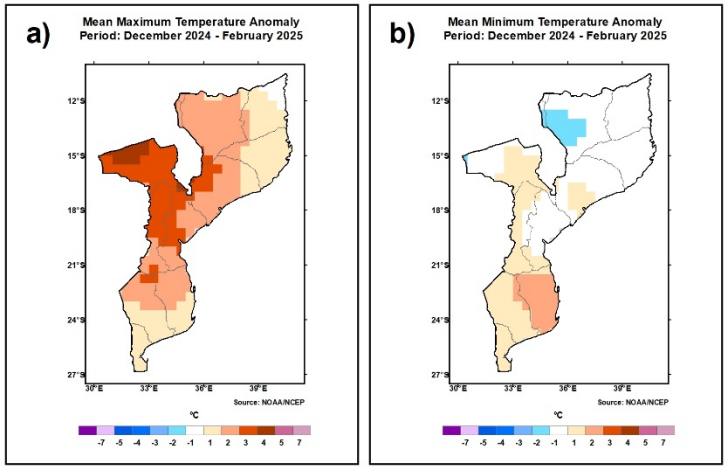


Figure 6: Spatial map for December 2024 - February 2025 (a) mean maximum temperature anomaly and (b) mean minimum temperature anomaly. **Source: NOAA/NCEP**

Past 1 month (February 2025):

- **Maximums:** During February, maximum temperatures were 1-4°C above average over the northern two-thirds of Mozambique, with Niassa experiencing the hottest conditions (**Fig. 7a**).
- **Minimums:** During February, minimum temperatures were 1-2°C above average across southern Mozambique, Manica, and local areas of Tete and Nampula (**Fig. 7b**).

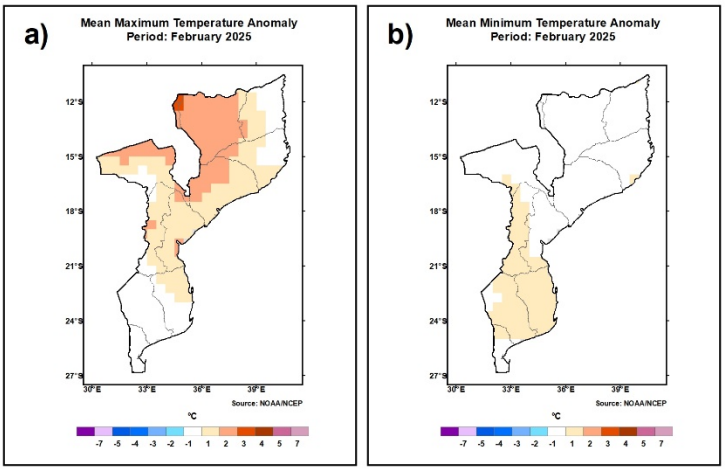


Figure 7: Spatial map for February 2025 (a) mean maximum temperature anomaly and (b) mean minimum temperature anomaly. **Source: NOAA/NCEP**

Monthly and Seasonal Forecasts (April 2025 and April – June 2025):

- **Monthly:** During April 2025, temperature forecasts indicate above-average temperatures for Mozambique (**Fig. 8a**). Probabilities for above-average temperatures exceed 50% over parts of Niassa, Cabo Delgado, Nampula, Zambézia, and Maputo.
- **Seasonal:** During April – June 2025, temperature forecasts call for above-average temperatures across Mozambique, with more than 50% probabilities over the northern and southern provinces (**Fig. 8b**).

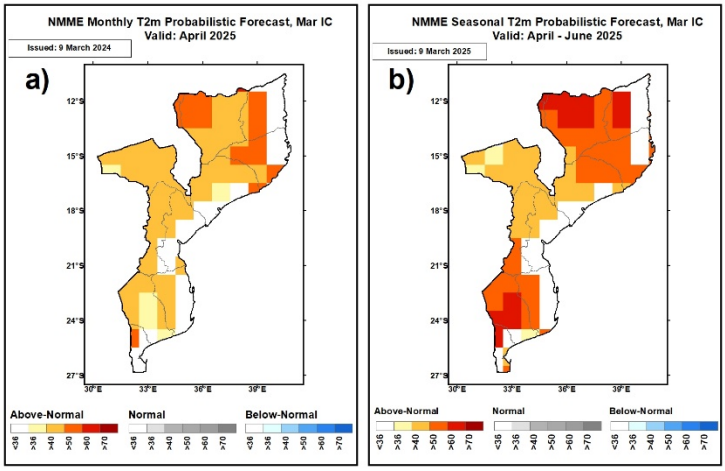


Figure 8: Spatial map for (a) April 2025 and (b) April – June 2025 mean temperatures forecast. **Source: NOAA/NCEP**

Table 2: Maximum temperature and minimum temperature and anomaly for the past three months and one month and seasonal mean temperatures and anomaly forecast over provinces of Mozambique.

Location	Past 3-Month		Past 1-Month		Seasonal Forecast	
	Max/Min Temp (°C)	Max/Min Anomaly (°C)	Max/Min Temp (°C)	Max/Min Anomaly (°C)	Temp (°C)	Above/Below-average (°C)
Cabo Delgado province	31/23	1.4/0.5	30/23	1/0.6	23	0.5
Gaza province	34/24	2.2/1.7	32/23	0.4/1.1	22	0.7
Inhambane province	33/25	2.2/2.2	31/24	1/1.3	23	0.6
Manica province	33/22	3.1/1.4	31/22	1.4/1.2	20	0.5
Maputo province	33/23	1.6/1.3	31/23	0.1/0.8		
Nampula	32/23	1.6/0.7	31/23	1.2/0.6	23	0.5

province						
Niassa province	30/20	2.4/-0.5	30/20	2.4/-0.1	21	0.4
Sofala province	34/24	3/0.7	32/24	1.8/0.6	23	0.6
Tete province	33/22	3.8/0.8	30/21	1.8/0.6	20	0.4
Zambézia province	33/23	2.5/0.9	32/23	1.9/0.6	22	0.4

Flooding and Areas of Inundation

- Currently, flooding have occurred and have affected many people over northern and central Mozambique due to the landfall of Tropical Cyclone JUDE over Nampula on 10 March.
- Over the next 30 days, moderate to high risks of flooding persist for northern Mozambique as moderate to heavy rainfall is likely to continue in the region.

Drought and Dryness

The Standardized Precipitation Index (SPI) is used to characterize meteorological drought. SPI compares the precipitation over a specific period of time with the climatology from that same period. Therefore, the SPI values can be thought of as the number of standard deviations that the observed anomaly deviates from the climatology. The 1-month SPI values are a good representation of the monthly precipitation anomaly as well as the soil moisture and vegetation health. The 3-month SPI values are a good representation of seasonal precipitation anomalies. The Standardized Precipitation Evapotranspiration Index (SPEI) is similar to the SPI, but it also takes evapotranspiration into account (and therefore the impact of temperatures on water demand).

Past 3 months (December 2024 – February 2025):

- During December 2024 - February 2025, drier-than-average conditions persisted over northern and central Mozambique, while wetter-than-average conditions continued over areas of Nampula, Tete, Gaza, and Maputo (**Fig. 9a**).

Past 1 month (February 2025):

- During February, drier-than-average conditions continued over northern and central Mozambique, while near-average to wetter-than-average conditions spread over the remainders of the country (**Fig. 9b**).

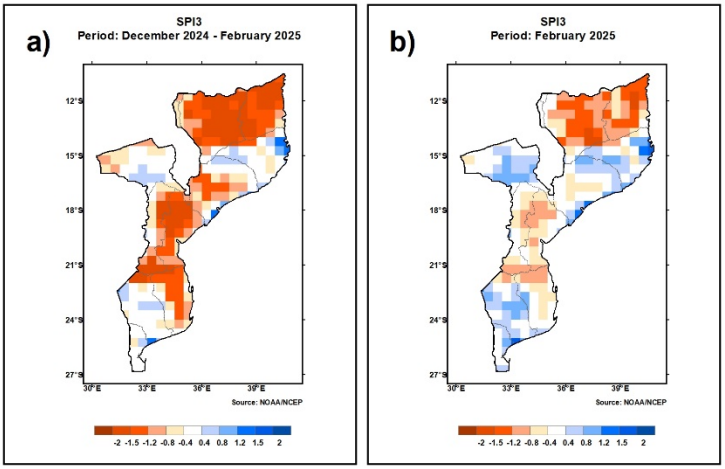


Figure 9: Spatial structure of (a) December 2024 - February 2025 Standardized Precipitation Index (SPI) and (b) February 2025 SPI. **Source: NOAA/NCEP**

Current/Forecast (29 December 2024 – 28 March 2025):

- SPI forecast, which is constructed from observed precipitation from 29 December 2024 to 28 February 2025 and forecasted rainfall data from 1 March to 28 March 2025 suggests that drier-than-average conditions may ease slightly over central Mozambique, but will persist in the northern provinces over the next four weeks (**Fig. 10**).

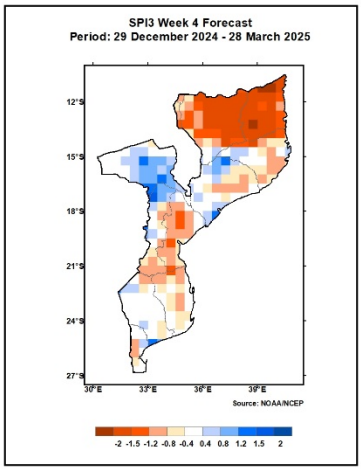


Figure 10: Spatial structure of SPI constructed from observations for 29 December 2024 to 28 February 2025 and 4 weeks forecast ending on 28 March 2025. **Source: NOAA/NCEP**

Normalized Difference Vegetation Index (NDVI)

NDVI is a measure of vegetation health, where high NDVI values are indicative of healthy, dense vegetation, and low NDVI values are indicative of less or no vegetation. Therefore, negative NDVI anomalies suggest deteriorated vegetation health relative to the long-term average.

Current (21 – 28 February 2025):

- During 21 – 28 February, near-average to above-average vegetation conditions, with NDVI values over 95% of the mean, dominated over Mozambique, in particular the southern provinces (**Fig. 11**). However, below-average vegetation conditions, with NDVI values less than 90% of the mean, persisted over local areas of Gaza, Manica, Sofala, Tete, Nampula, and Cabo Delgado.

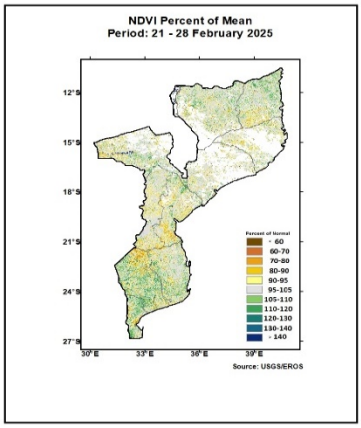


Figure 11: Spatial structure of NDVI anomaly for 21 – 28 February 2025. **Source: USGS/EROS**

Water Requirement Satisfaction Index (WRSI)

- As of late February, the WRSI analysis indicates that maize crop conditions were near-average to above-average, with WRSI over 110% of the median values, in southern Mozambique. Crop conditions remained below-average (WRSI less than 90% of the median values) over many local areas of western and central Mozambique.

GEOGLAM Crop Monitor

- Maize growing conditions are mostly *favorable* in Mozambique due to an improvement in rainfall since January. However, agricultural output are constrained in Cabo Delgado because of ongoing conflict.

Additional Resources

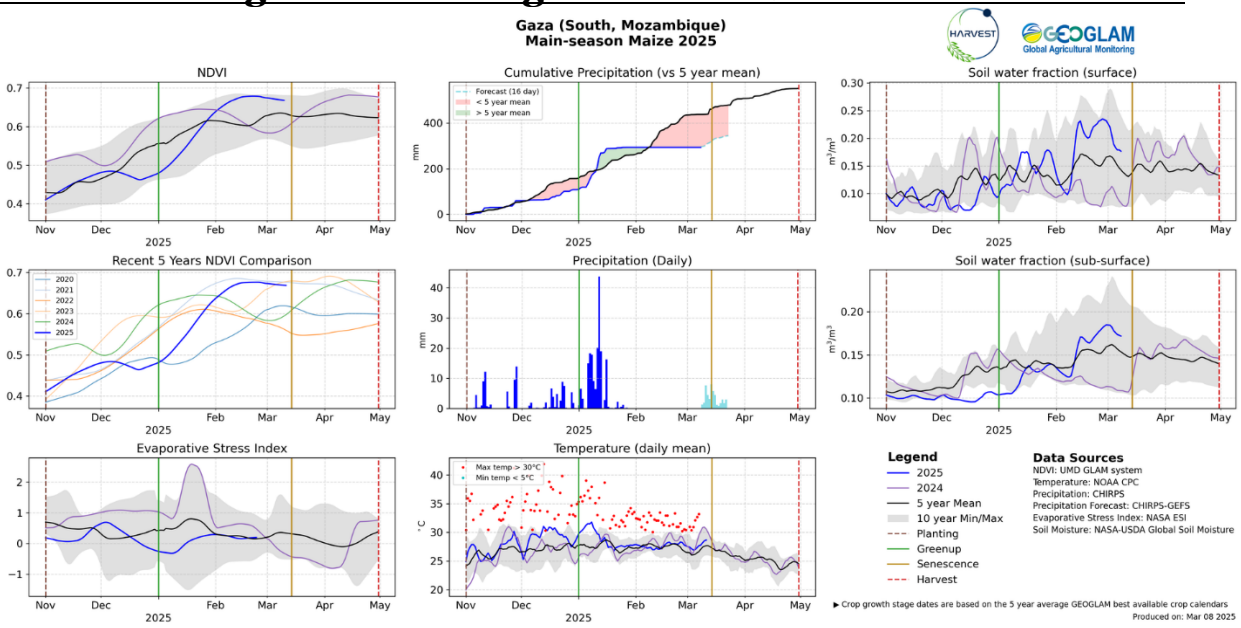
https://www.inam.gov.mz/index.php/pt/

https://www.sadc.int/pillars/meteorology

https://fews.net/southern-africa/mozambique

Annex

GEOGLAM Agro-meteorological Earth Observation Indicators:



[Crop Type] Maize
[Location]: Sofala