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### DEFINITIONS OF ACRONYMS

- RFE = Rainfall Estimate  
 NDVI = Normalized Difference Vegetation Index  
 SDVI = Standardized Difference Vegetation Index  
 ADVI = Absolute Difference Vegetation Index  
 LTA = Long Term Average (Historical Mean from 2000 - 2016)  
 Dekad = 10-day period



### HIGHLIGHTS

- RFE was highest in Cross-River, Abuja and Akwa-Ibom during the three dekads of August, 2017. Lowest RFE was recorded in Lagos and Ogun States
- NDVI was highest in Abuja and Kaduna in August, 2017. Poor vegetation development was observed in Akwa-Ibom, Lagos and Bayelsa States
- Prolonged negative NDVI anomaly in parts of Lagos, Adamawa, Cross-River, and Taraba States may have serious implications on crop development in the areas

### Nigeria RFE and RFE Anomaly (August, 2017)

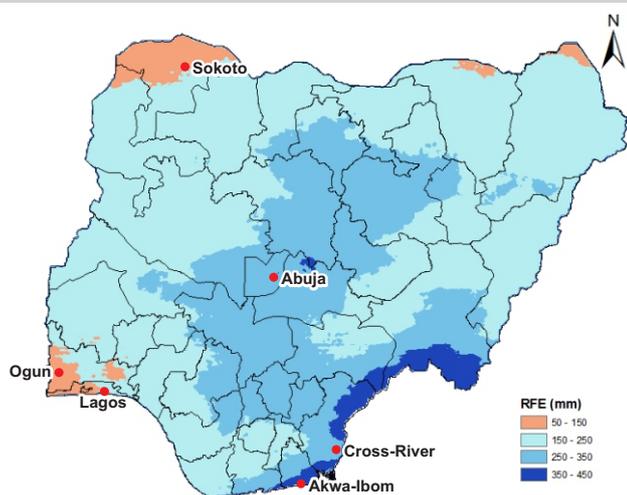


Figure 1: Nigeria Rainfall Estimate (August, 2017)

The Rainfall Estimate (RFE) of Nigeria from satellite images for the month of August, 2017 (Figure 1) showed a sporadic distribution of rainfall across the country. Higher rainfall estimates were observed particularly in the southeastern and

northcentral regions with Abuja (FCT) (313.43 mm), Cross-River (336.91 mm) and Akwa-Ibom (311.79 mm) States recording the highest RFE. Southwestern Nigeria was observed to record minimal RFE during the three dekads of the month (Figures 2a-c), with states like Lagos (135.82 mm) and Ogun (149.26 mm) having the least RFE in the entire country. Also, places such as Kano State in Northern Nigeria recorded significantly low rainfall during the time period (153.48 mm). The observed pattern indicates a shift in crop growing season from the southern part of Nigeria to the northern part. The major implication of this observation on vegetation development and rain-fed agriculture is that greenness is expected to be more prominent in the northern part of the country which will ultimately spell good for farmed crops.

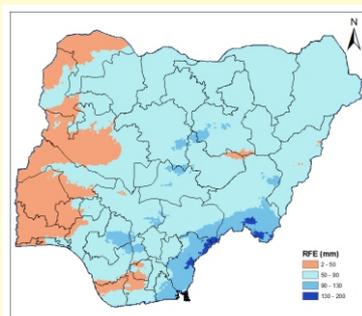


Figure 2a: Nigeria Rainfall Estimate- August, 2017  
1st dekad (August 01-10)

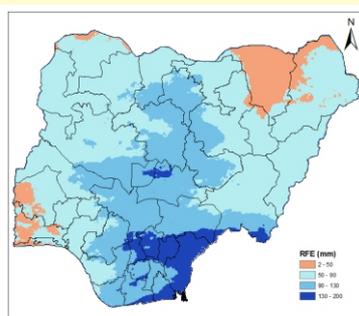


Figure 2b: Nigeria Rainfall Estimate- August, 2017  
2nd dekad (August 11-20)

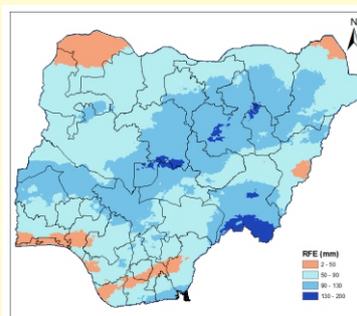


Figure 2c: Nigeria Rainfall Estimate- August, 2017  
3rd dekad (August 21-31)

The decline which is to be expected in the southern part may signify the commencement of harvesting period for major crops in the area.

However, negative deviations from historical RFE mean were observed in several parts of Sokoto, Adamawa and Borno States during the first, second and third dekads of August, 2017

(Figures 3a-c). The observation may impact negatively on crop yield in these areas. Other areas with negative RFE anomaly include: Zamfara, Kebbi and Imo States. On the other hand, Lagos, Ogun and Osun States recorded positive RFE anomaly during the same time period.

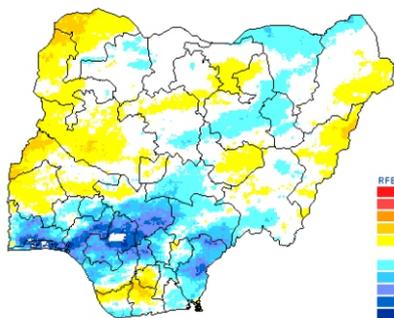


Figure 3a: Nigeria RFE Anomaly- August, 2017  
1st dekad (August 01-10)

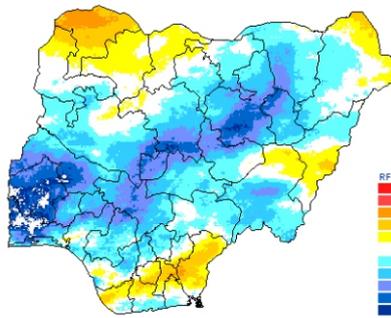


Figure 3b: Nigeria RFE Anomaly- August, 2017  
2nd dekad (August 11-20)

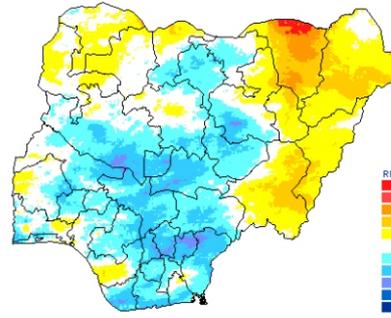


Figure 3c: Nigeria RFE Anomaly- August, 2017  
3rd dekad (August 21-31)

### Nigeria NDVI and NDVI Anomaly (August, 2017)

Satellite images of Nigeria vegetation development for August, 2017 (MODIS NDVI) (Figure 4) showed readily observable disparity in the distribution of greenness across the southern and northern parts of the country, with the northern part recording higher NDVI. It was observed that Kaduna and Kano States, as well as Abuja (FCT), recorded the highest NDVI during the three dekads of the month (Figures 5a-c). The pattern observed indicates a shift in greenness from southern Nigeria towards the northern region and corroborates the fact that, at this period of the year, the crop growing season in northern Nigeria is well under way. The blooming greenness in the northern region was also observed to have obliterated long periods of dryness earlier observed in some parts of the region. On the other hand, poor vegetation development was recorded in Akwa-Ibom, Lagos and Bayelsa States in the southern part of the country. This observation could be indicative of the start of harvest season for major crops grown in the area.

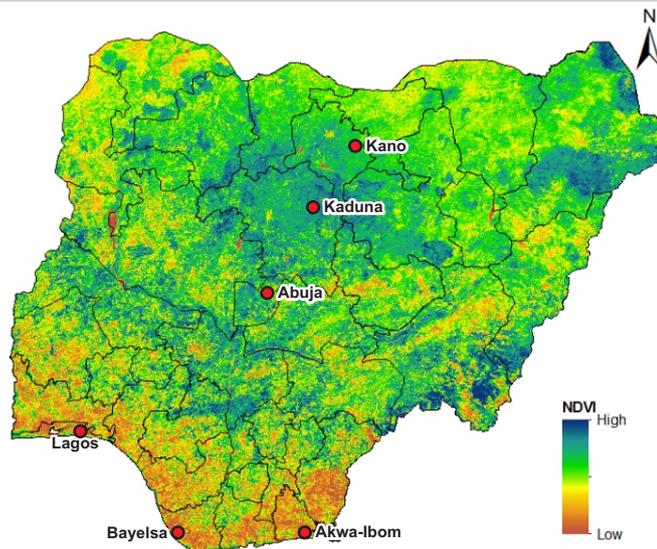


Figure 4: Nigeria NDVI (August, 2017)

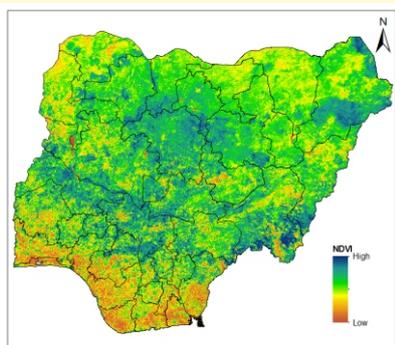


Figure 5a: NDVI of Nigeria- August, 2017  
1st dekad (August 01-10)

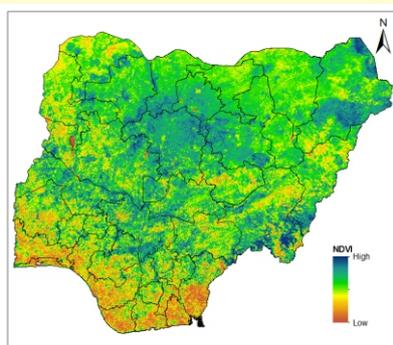


Figure 5b: NDVI of Nigeria- August, 2017  
2nd dekad (August 11-20)

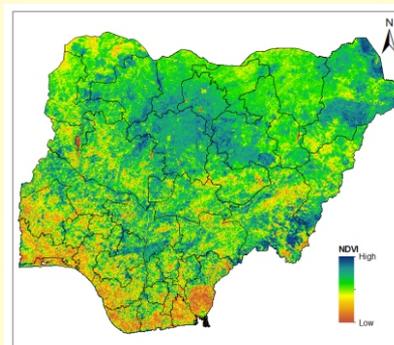


Figure 5c: NDVI of Nigeria- August, 2017  
3rd dekad (August 21-31)

Highly positive NDVI anomaly was observed in Osun, Abuja and Rivers States during the three dekads of August, 2017. Other areas with significant positive anomaly during the period include much of Kaduna, Zamfara and Bayelsa States. However, negative departure from historical NDVI mean

(2000-2016) was observed in States like Lagos, Adamawa and Cross-River. Prolonged negative NDVI anomaly may eventually lead to drought in some parts of Adamawa State. Other notable areas where negative NDVI anomaly was recorded are parts of Taraba and Plateau States.

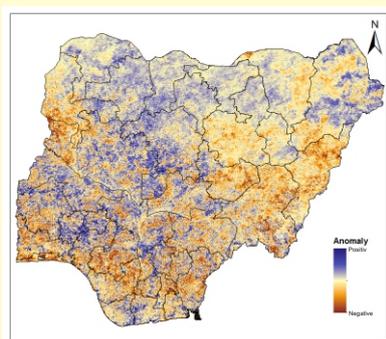


Figure 6a: Nigeria NDVI Anomaly- August, 2017  
1st dekad (August 01-10)

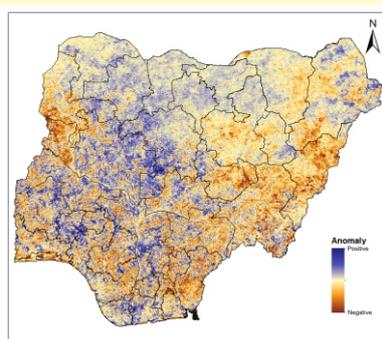


Figure 6b: Nigeria NDVI Anomaly- August, 2017  
2nd dekad (August 11-20)

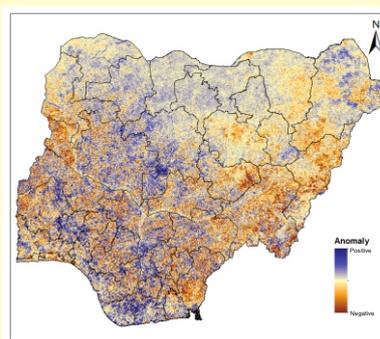


Figure 6c: Nigeria NDVI Anomaly- August, 2017  
3rd dekad (August 21-31)

### Crop Yield Forecast for Nigeria Agro-Ecological Zones (2017)

The crop yield forecast was performed in **four** stages:

1. Extraction of specific crop regions of Nigeria with a global hybrid crop-dominance mask,
2. Performance of most-similar year analysis (NDVI and phenology), in which historical years with most similar NDVI pixel properties to the current season were assigned class values. These were later used as indicators for yield projection.

3. Retrieval of yield data for major Nigerian crops (1961-2014) from the FAO crop-yield portal. The yield data was extrapolated through regression analysis with NDVI as predictive variable to 2016, and
4. The yield forecast analysis for different crops was run in SPIRITS software environment.

In this issue, the forecast was done for cassava and maize.

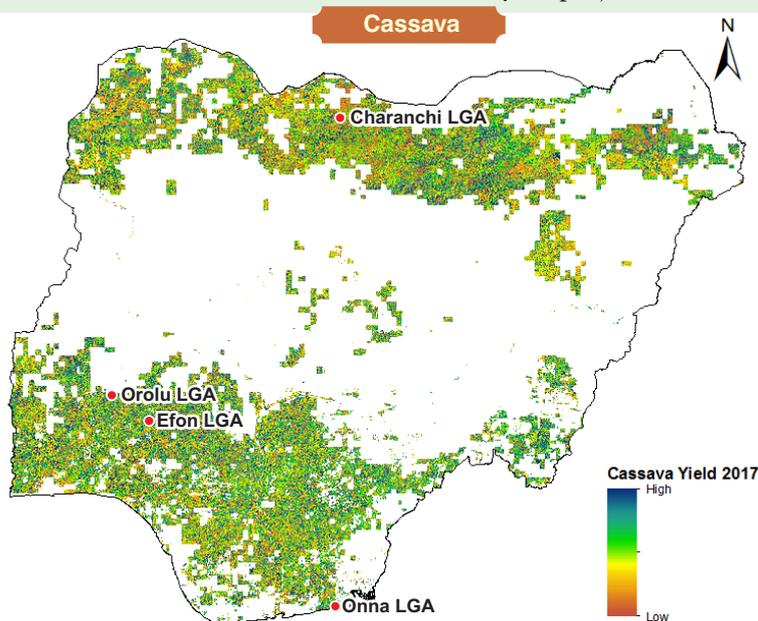


Figure 7: Yield Forecast for Cassava in Nigeria (2017)

According to the forecast, cassava yield for the 2017 crop season (Figure 7) is expected to be highest in many parts of Southwest and Southeast Nigeria, as well as in some northern cultivation zones. Among other areas, particularly high yield is to be expected in Efon (10.23 ton/ha) and Ido-Osi (10.26 ton/ha) Local Government Areas of Ekiti State; Obowo (10.30 ton/ha) and Aboh Mbaise (10.28 ton/ha) Local Government Areas of Imo State; Orolu (10.40 ton/ha), Olaoluwa (10.30 ton/ha) and Atakunmosa East (10.23 ton/ha) Local Government Areas of Osun State. Other areas where high cassava yield may be expected in 2017 include: Onna LGA in Akwa-Ibom State (10.42 ton/ha), Charanchi LGA in Katsina State (10.41 ton/ha), Zaki LGA in Bauchi State (10.33 ton/ha), Ogo-Oluwa LGA in Oyo State (10.29 ton/ha), Takai LGA in Kano State (10.28 ton/ha), Udenu LGA in Enugu State (10.24 ton/ha) and Ogadibo LGA in Benue State (10.25 ton/ha).

Also, based on the same forecast, maize yield for 2017 (Figure 8) is expected to be highest in Keffi LGA of Nassarawa State (1.82 ton/ha), Mubi North LGA of Adamawa State (1.81 ton/ha), Zaria LGA of Kaduna State (1.80 ton/ha) and Ilorin-South LGA of Kwara State (1.80 ton/ha). Other areas where maize yield is expected to be high in the 2017 growing season are Gbako Local Government Area in Niger State with 1.78 ton/ha, Kanke Local Government Area of Plateau State with

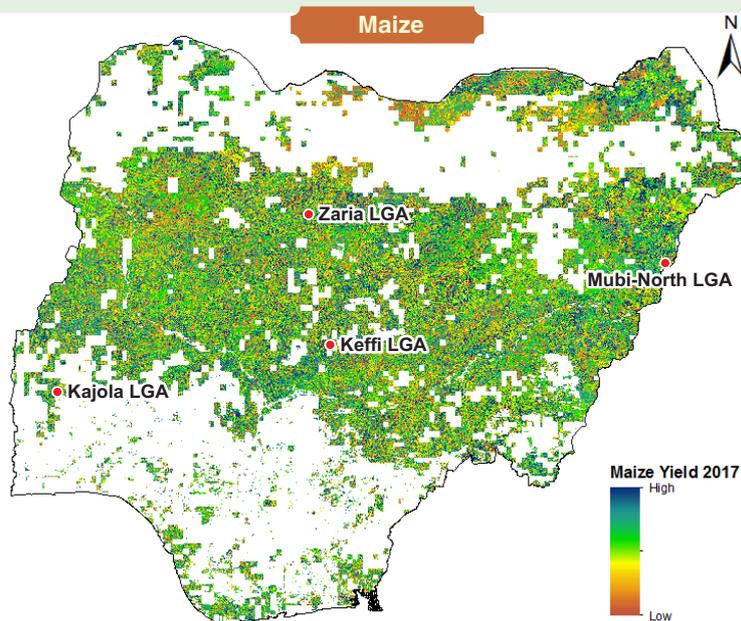


Figure 8: Yield Forecast for Maize in Nigeria (2017)

1.77 ton/ha, as well as Kajola Local Government Area of Oyo State with 1.51 ton/ha.

#### CURRENT PRICES OF AGRICULTURAL COMMODITIES

##### September, 2017

Commodity	Market	Price
Rice (50 kg)	Oyingbo, Lagos	N13,200
	Dawanau, Kano	N15,200
	Gombe, Gombe	N17,000
Drum beans (100 kg)	Oyingbo, Lagos	N33,000
	Dawanau, Kano	N27,000
	Gombe, Gombe	N36,000
Maize (100 kg)	Oyingbo, Lagos	N15,000
Maize (100 kg)	Dawanau, Kano	N14,800
Maize (95 kg)	Gombe, Gombe	N14,900
Garri (55 kg)	Oyingbo, Lagos	N7,500
	Dawanau, Kano	N10,800
	Gombe, Gombe	N18,000
Groundnut (100 kg)	Oyingbo, Lagos	N33,500
	Dawanau, Kano	N27,000
Palm Oil (25L)	Dawanau, Kano	N13,000
	Gombe, Gombe	N10,700
Soybeans (100 kg)	Oyingbo, Lagos	N16,500
	Dawanau, Kano	N14,800
	Gombe, Gombe	N15,300
Sorghum (100 kg)	Oyingbo, Lagos	N18,000
	Dawanau, Kano	N14,400
	Gombe, Gombe	N18,500
Onion (100kg)	Gombe, Gombe	N10,700

Source: www.novusagro.com



Selected Areas of NDVI and RFE Anomalies (August, 2017)

(1) Atakunmosa East Local Government Area, Osun State

Long-term RFE and NDVI analyses revealed that Atakunmosa Local Government Area of Osun State (Figure 9) recorded well above average vegetation development during the three dekads of August, 2017. The NDVI of the area surpassing historical NDVI mean is mainly due to the abundant rainfall received during the previous dekads, particularly in the months of June

and July. The observation is good for croplands in the area, as most major crops being cultivated in the area will be in their flowering stage or nearing harvest period. Coincidentally, from the crop yield forecast for 2017 crop year, cassava is expected to turn out high yield in the area.

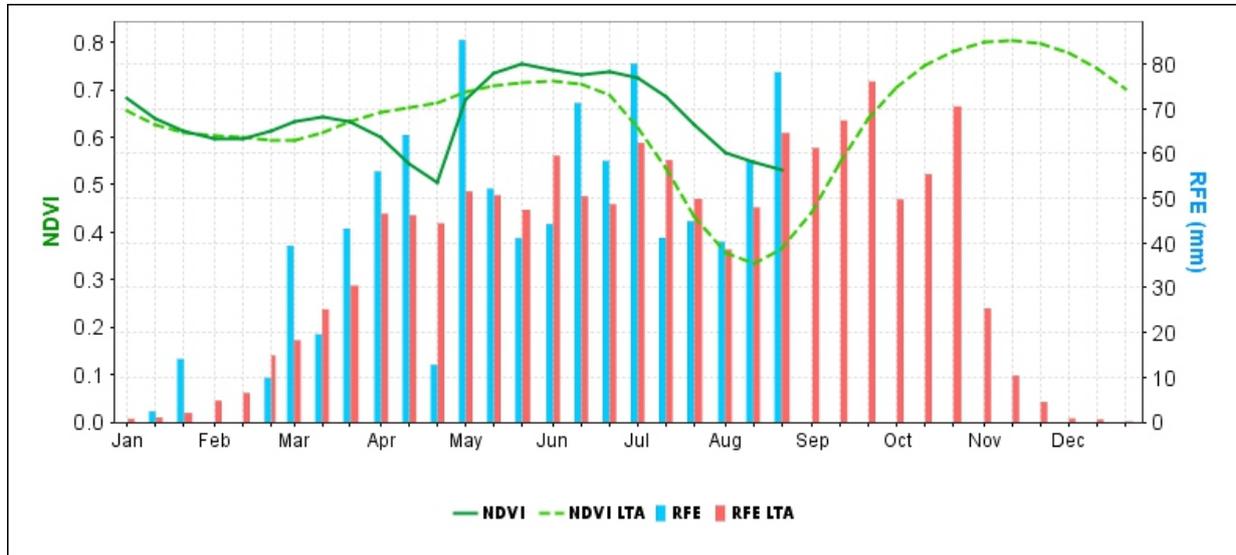


Figure 9: NDVI and RFE Anomalies of Atakunmosa East LGA, Osun State

(2) Ini Local Government Area, Akwa-Ibom State

On the other hand, negative NDVI anomaly was recorded in Ini Local Government Area of Akwa-Ibom State (Figure 10) during the same time period. The area was observed to have received very low rainfall during the preceding dekads (in the month of July) which was low enough to impact negatively on

vegetation development in the month of August. Prolonged negative RFE anomaly in this area has serious implications for crop development, and may ultimately result in drastic reduction in crop yield.

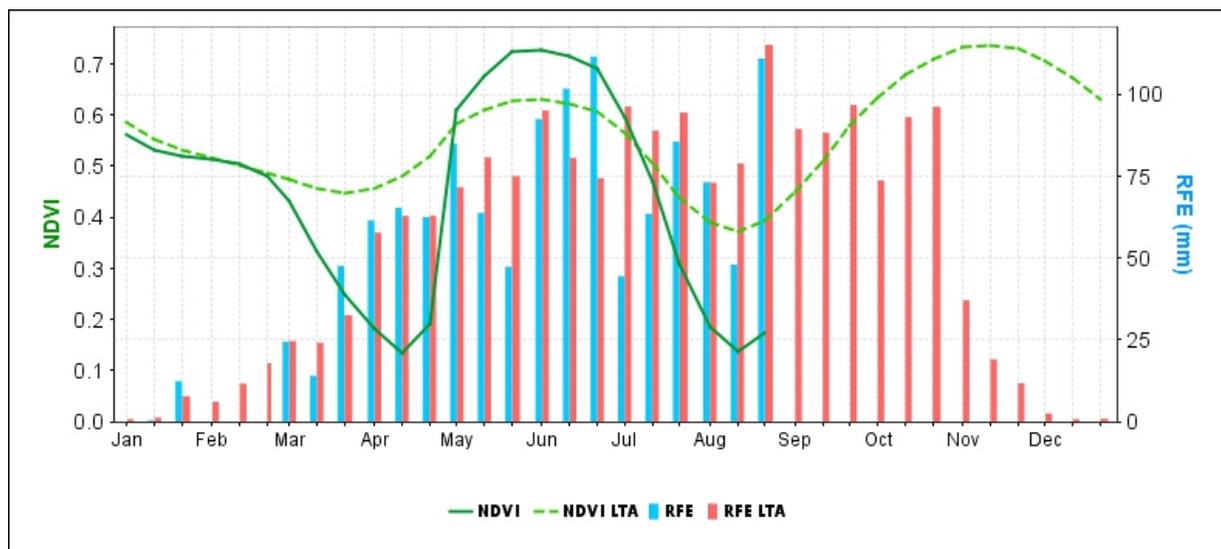


Figure 10: NDVI and RFE Anomalies of Ini LGA, Akwa-Ibom