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DEFINITIONS OF ACRONYMS

RFE = Rainfall Estimates
NDVI = Normalized Difference Vegetation Index
SDVI = Standardized Difference Vegetation Index
ADVI = Absolute Difference Vegetation Index
LTA = Long Term Average (Historical Mean)
Dekad = Ten Days

HIGHLIGHTS

- Abundant rainfall received across the country during May 2017. Planting season has already started in Northern Nigeria

- Above average vegetation development observed in large parts of Southwestern and North-central Nigeria in May, 2017

- Delay in rainfall at season onset resulted in reduced vegetation development for parts of Kogi State in May, 2017

Nigerian Rainfall Estimates (May, 2017)

The month of May opened with abundant rainfall which was more pronounced in the southern part of the country, particularly in the southwestern and southeastern regions, with states like Osun, Ondo, as well as parts of Oyo, Ekiti and Edo States receiving much rainfall than their neighboring regions (Figure 1a).
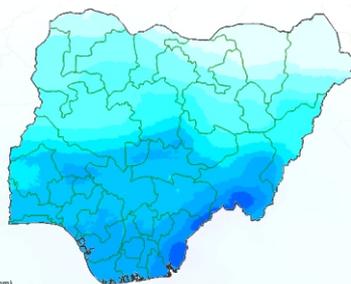

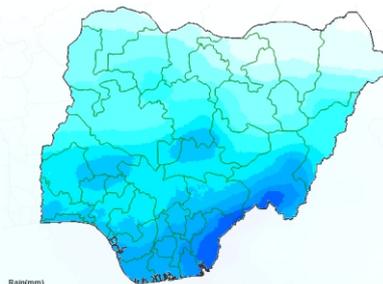Figure 1a: RFE Map of Nigeria
April 21-May 01, 2017

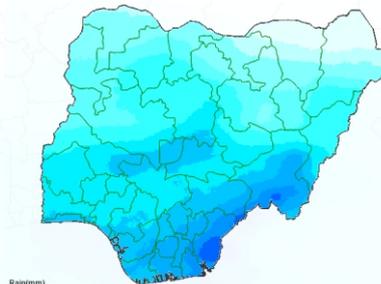Figure 1b: RFE Map of Nigeria
May 01-11, 2017
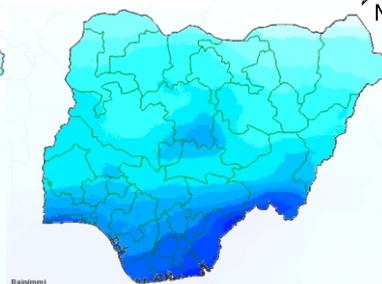
Figure 1c: RFE Map of Nigeria
May 11-21, 2017

Figure 1d: RFE Map of Nigeria
May 21-June 01, 2017

Other regions worthy of note for high rainfall during this period are the Federal Capital Territory, parts of Plateau, Nassarawa and Kaduna States in the northcentral (middle belt) region, Cross-River State in the southeastern region, and also Taraba and parts of Adamawa States in the northeastern region.

The amount of rainfall gradually reduced towards the North in the second dekad of May (Figure 1b), with Cross-River and Taraba States, as well as parts of Osun, Oyo, FCT, Plateau and Kaduna still retaining good rainfall

estimates. The reduction in rainfall during this period may affect crops planted by farmers during the previous dekad, but the effect is not escalated, as rainfall estimates of the affected regions picked up during the third dekad of May (Figure 1c), and by the first dekad of June, the rainfall estimates for most southern, northeastern and middle-belt regions have been well upgraded once again (Figure 1d), therefore vegetation development is expected to increase in the following dekads for most of these regions.
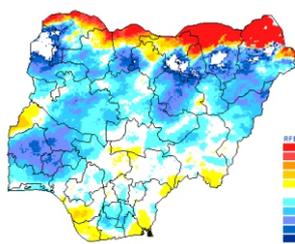
Nigerian RFE Anomalies (May, 2017)

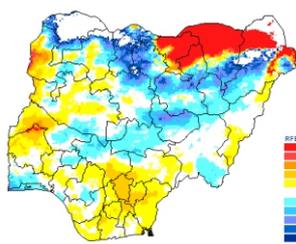**Figure 2a: RFE Anomaly Map of Nigeria**
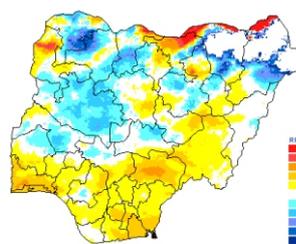**April 21-May 01, 2017**

Figure 2b: RFE Anomaly Map of Nigeria
May 01-11, 2017

Figure 2c: RFE Anomaly Map of Nigeria
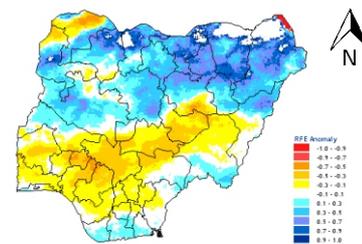**May 11-21, 2017**

Figure 2d: RFE Anomaly Map of Nigeria
May 21- June 01, 2017

Both the Southern and Northern parts of Nigeria recorded positive departure from historical RFE mean (Long-Term Average). In the Southwestern and Northcentral regions, rain started early and in more quantity than the historical RFE mean in parts of Osun, Ondo and Ekiti States such as Odo-Otin, Ila, Boluwaduro and Ifedayo Local Government Areas of Osun State, even though some parts of Kogi State like Ajaokuta, Ofu and Okene Local Government Areas recorded negative anomalies, with these areas receiving lesser rainfall than the historical RFE mean (Figures 2a-d).

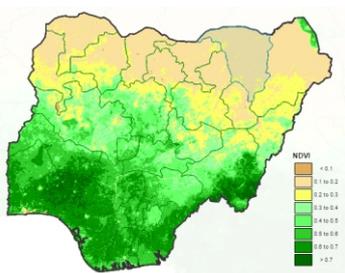## Vegetation Development and NDVI Anomalies in Nigeria (May, 2017)

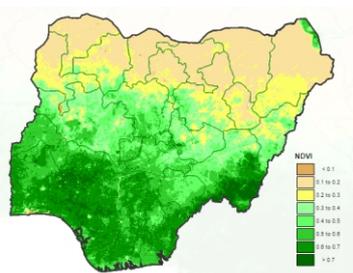**Figure 3a: NDVI Map of Nigeria**
April 21-May 01, 2017

Figure 3b: NDVI Map of Nigeria
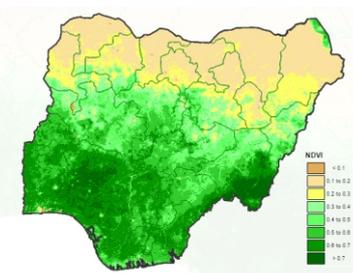**May 01-11, 2017**

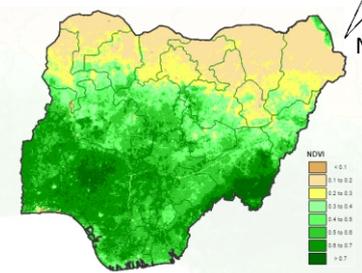**Figure 3c: NDVI Map of Nigeria**
May 11-21, 2017

Figure 3d: NDVI Map of Nigeria
May 21-June 01, 2017

The Normalized Difference Vegetation Index for the month of May revealed a general increase in vegetation development, with progressive greenness observed for the first, second and third dekads of the month (Figures 3a-c). The greenness bloomed exceptionally in the first dekad of June (Figure 3d), and is readily observable in the nouthwestern, northcentral and northeastern regions.

The good vegetation development observed in these regions can be attributed to the abundant rainfall received in the previous dekads. Crops that have been planted since the second dekad of April are expected to do well in most areas of these regions

The Standardized Difference Vegetation Index (SDVI) showed that most regions in the Northern part of the country experience negative departure from historical NDVI mean.

Places such as the Lake Chad areas in the northeastern region were observed to experience extreme negative NDVI anomaly. Although the northern parts of Oyo State and parts of Kogi State also experienced negative anomalies, they are not as emphasized as those experienced in the northern part of the country.

▶ START OF PLANTING SEASON IN NORTHERN NIGERIA

Phenological analyses for start of season (Figure 4) have revealed that, based on the rainfall estimates and vegetation development recorded in the agroecological zones of Northern Nigeria during the month of May, planting should have successfully commenced for the 2017 season. Planting of crops such as maize and sorghum should have started from the first dekad of May, while planting of Soybeans, peanuts and cotton should have commenced from between the second and third dekads of May. Also, the planting of millet, rice and cassava should have started from the first dekad of June.
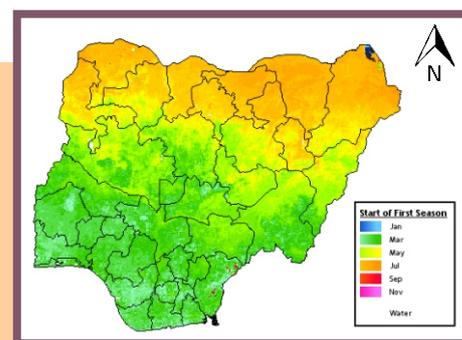

Figure 4: Start of Season in Nigeria (2017)

NDVI and RFE Analyses for Selected Areas (May, 2017)

(1) Ila Local Government Area, Osun State

Between May 01 and June 01, 2017, Ila Local Government Area in Osun State is one of the areas in the southwestern region observed to show significant increase in greenness for the month of May when compared to the historical NDVI mean of the area. Further analyses revealed that the observed vegetation development can be attributed to the amount of rainfall recieved during the preceding dekads (from last dekad of March).
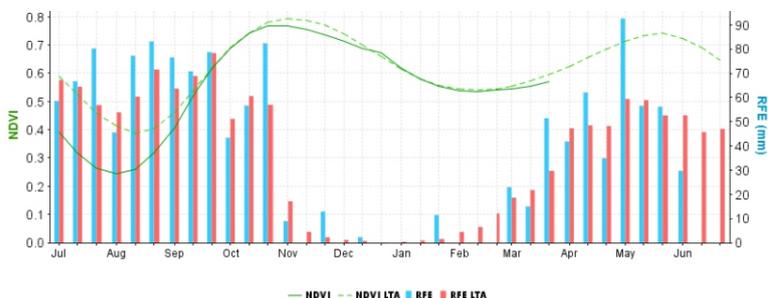

Figure 5a: NDVI and RFE Analyses for Ila LGA

Figure 5b: Cumulative RFE for Ila LGA

The area received exceptionally high rainfall during the second dekad of April and the first dekad of May compared to the historical RFE mean (Figure 5a), and even though the RFE values for the second dekad of May was lower than the h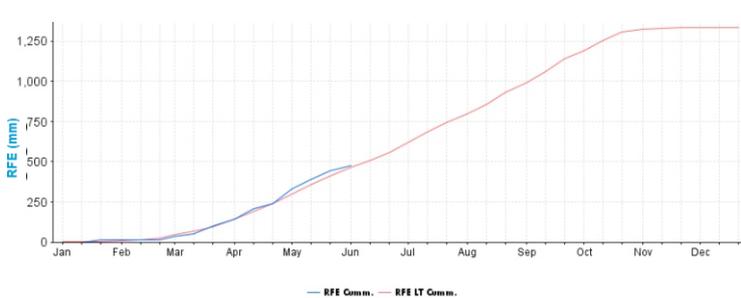istorical RFE mean, cumulative RFE (Figure 5b) showed that there is enough water (cumulative RFE higher than historical RFE) available to recharge the soil. Therefore, the vegetation development for the area during the current dekad (third dekad in May) progressed positively.

(2) Ajaokuta Local Government Area, Kogi State

On the other hand, Ajaokuta Local Government Area in Kogi State experienced much less greenness compared to the historical NDVI mean of the area within the same time period. This, also, is largely due to anomalies recorded in rainfall estimate values for the area since the month of April.
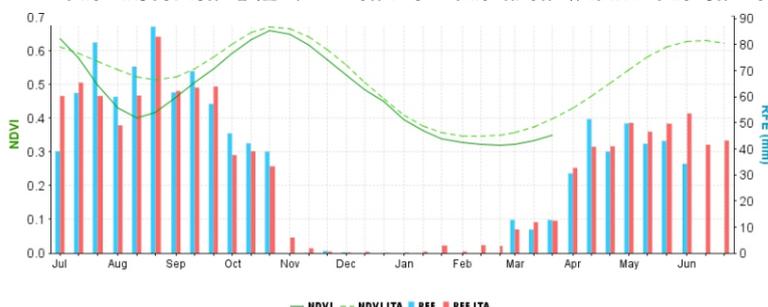

Figure 6a: NDVI and RFE Analyses for Ajaokuta LGA

Figure 6b: Cumulative RFE for Ajaokuta LGA

The rainfall estimates for the area from the third dekad of April to the first dekad of June were significantly lower than the corresponding historical RFE means. The cumulative RFE during this period was also lower than the histori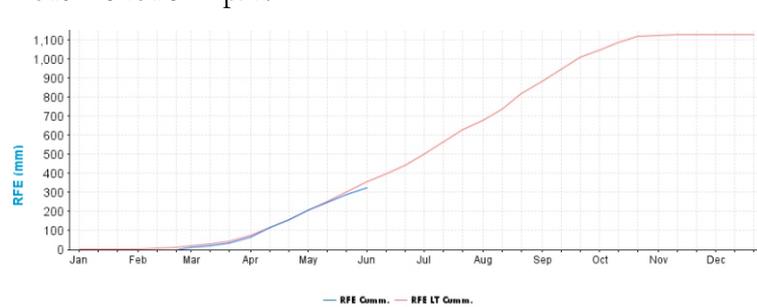cal cumulative RFE, hence the vegetation for the area developed poorly. Since the RFE is yet to pick up during the current dekad, vegetation development for the next dekad is not expected to be as good as those of other areas.