

# West Africa Seasonal Monitor

2021 Season



**vam**  
food security analysis



World Food Programme, Regional Bureau Dakar

Jun (Dekad 1), 2021

# Contents

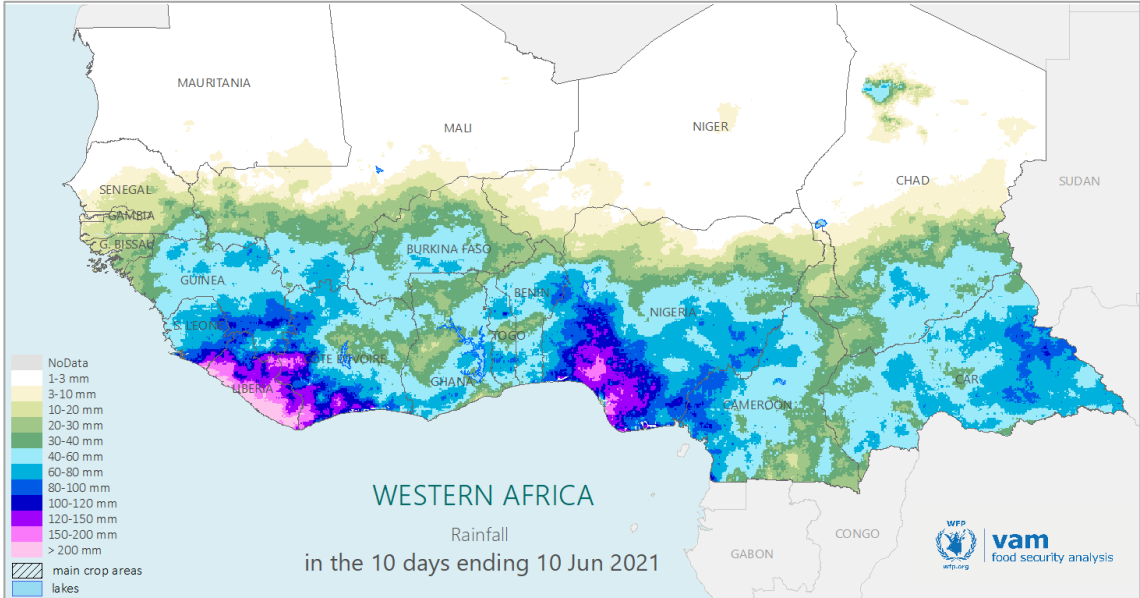
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## Highlights

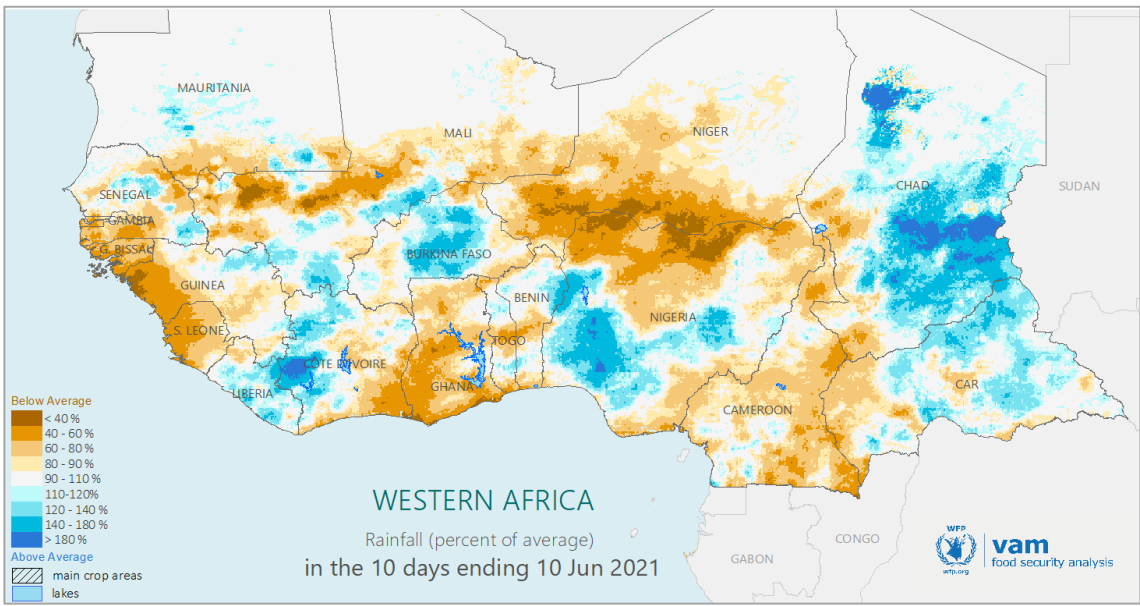
- In early June, West Africa experienced a slight increase in rainfall. Eastern Guinea, southern Mali and Burkina Faso received moderate rainfall (up to 80 mm). Meanwhile, more intense rains were recorded in coastal and inland areas in Liberia, Côte d'Ivoire and Nigeria. While the increase in rainfall relieved some dryness in parts of the region, the southern coastal areas of the region, southern Cote d'Ivoire to Benin continued to experience prolonged dry conditions due to poor rainfall performance. Rainfall in Northern Nigeria, southern Senegal, Guinea-Bissau, Western Guinea also remains below average.
- **In the past two months (between 11 April and 10 June)**, West Africa was characterised by drier than average conditions which mainly affected the westernmost parts of the region (southern Senegal, Guinea-Bissau, western Guinea and north-western Mali), some coastal areas (south-eastern Côte d'Ivoire, Ghana, Togo and southern Benin) as well as much of Niger, northern Nigeria, and the Lake Chad Basin. Conversely, rains have been above normal in Sierra Leone, northern Liberia, southern Cameroun and western CAR. In the Sahel region, some areas across Burkina Faso, Central Senegal, Eastern Chad benefited from normal to wetter than normal conditions. The early season dryness continues to affect vegetation conditions. In southern areas below average vegetation can be seen across a broad area from south-eastern Senegal and northern Guinea across northern Côte d'Ivoire, Ghana, Togo, Benin, southern Burkina Faso, central Nigeria continuing into central Cameroon (neighbouring areas of Far North and North regions) and far south-western Chad (in Tandjile, Mandoul, Logone Oriental and Logone Oriental regions).
- **According to short-term forecasts** covering the period until the end of June 2021, an improvement of seasonal rains is likely across the region, with the strongest rains (over 120 mm) expected over coastal areas in the south-western parts of the region (Sierra Leone, Liberia, Côte d'Ivoire) and in south-eastern Nigeria. If these forecasts materialise, an increase in rainfall will also be observed over the Sahel, except for northern Mali and western Niger. In the Gulf of Guinea, early seasonal dryness might be partly compensated. However, in the south-western Senegal, Guinea-Bissau and western Guinea, rainfall is likely to remain below normal.
- **According to the PRESASS 2021 seasonal forecast**, average to above average rainfall is expected over the Sahelian and Sudanian belt for June - August and July - September while below average cumulative rainfall for the entire season will likely be observed over coastal areas of Mauritania, Senegal, Gambia, Guinea Bissau, Guinea, northern Sierra Leone, eastern Liberia, Côte d'Ivoire, Ghana, Togo, Benin, Nigeria, and Cameroon. These conditions are associated with an early to normal onset of rains and long to medium dry spells over most of the Sahel. This could mean that the region might be affected by more irregular and extreme rainfall during the 2021 season, with an increased risk of prolonged dry spells affecting crop development, and intense rainfall leading to floods.



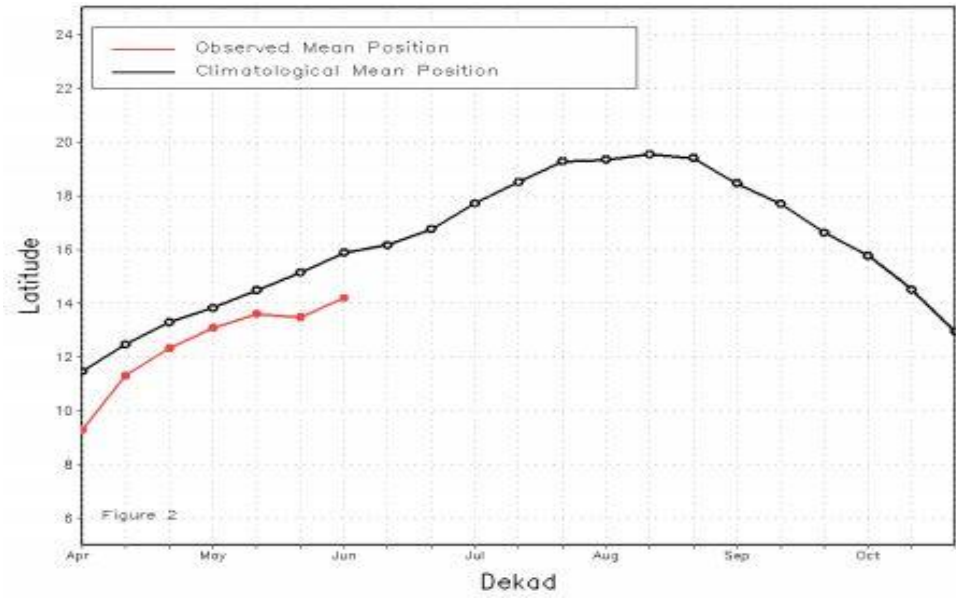
# Rainfall: latest developments (1-10 June 2021)



Cumulative rainfall (1-10 June 2021): The map to the left shows the total rainfall received over the last dekad, based on CHIRPS satellite rainfall estimates.



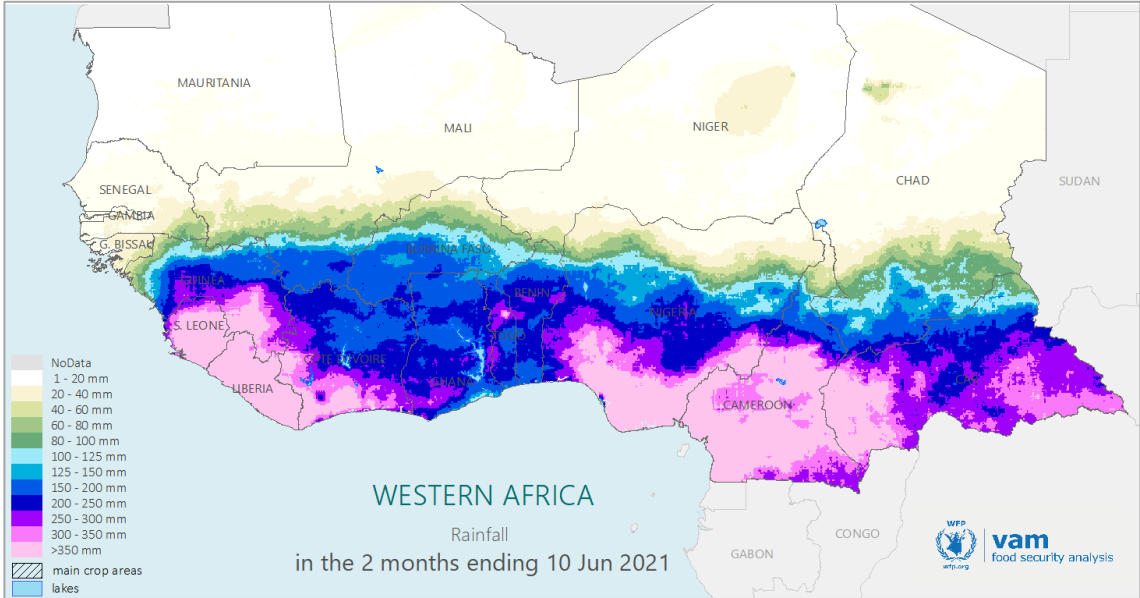
Rainfall anomaly (1-10 June 2021): The map to the left shows the rainfall anomaly over the last dekad in percentage of long-term average, based on CHIRPS satellite rainfall estimates.



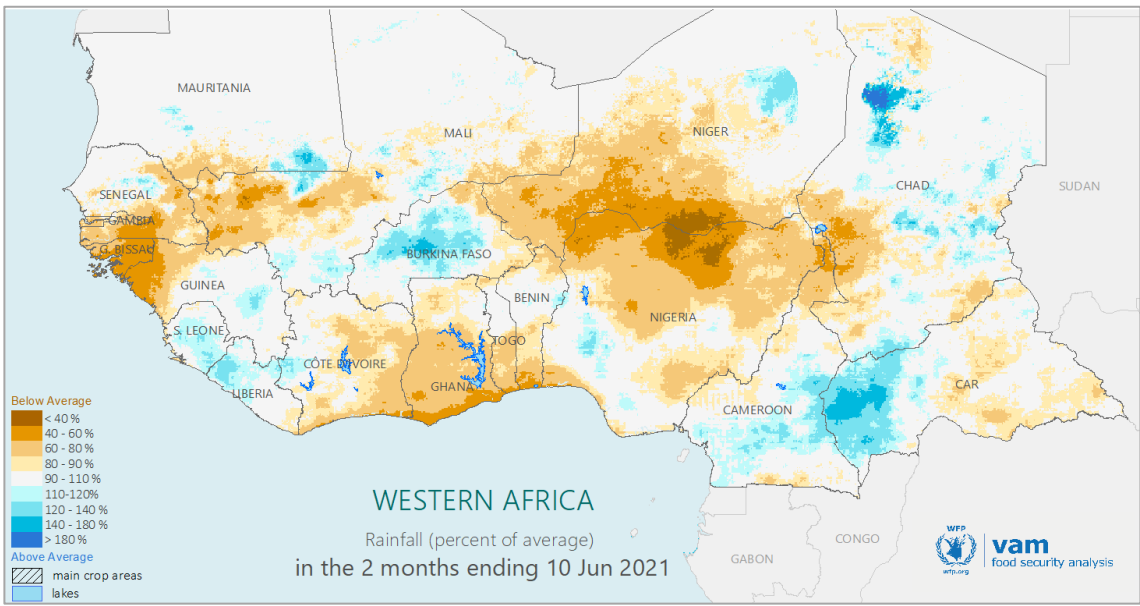
Current ITCZ position (red) vs long term average position (black) as of 10 June 2021: ITCZ: the Inter-Tropical Convergence Zone (ITCZ) is the border between dry areas and areas where the rainfall season is ongoing. It moves northwards as the monsoon advances, backtracking southwards as the monsoon wanes. Delays (advances) in this movement lead to drier (wetter) conditions on the ground.

- **Cumulative rainfall:** Over the reporting period, the seasonal rains moved northwards towards the Sahel, with moderate rainfall (up to 80 mm) in eastern Guinea, southern Mali and Burkina Faso. More intense rains were received in coastal and inland areas in Liberia, Côte d'Ivoire and Nigeria.
- **Rainfall anomaly:** Rainfall remained below normal levels over north-western Mali, Niger, northern Nigeria, as well as in coastal areas of southern Senegal, Guinea-Bissau, Guinea and Sierra Leone. Below normal rainfall was also recorded in eastern Côte d'Ivoire, Ghana, as well as northern Nigeria, Cameroon and western CAR. On the other hand, above normal rainfall was received in Liberia, western Côte d'Ivoire, Burkina Faso, south-western Nigeria, Chad and eastern CAR.
- **ITCZ:** The ITCZ moved further north compared to the previous dekad, but remains south of the long-term average. This explains the slow onset of seasonal rains across the western parts of the region and the abnormal dryness installed across the countries of the Gulf of Guinea. In the eastern parts of the region, its southern position compared to the long-term average is reflected in the increase in seasonal rainfall over eastern CAR and southern Chad.

# Rainfall: the season so far (11 April – 10 June 2021)



Cumulative rainfall (11 April – 10 June 2021): The map to the left shows the total rainfall received over the last two months, based on CHIRPS satellite rainfall estimates.

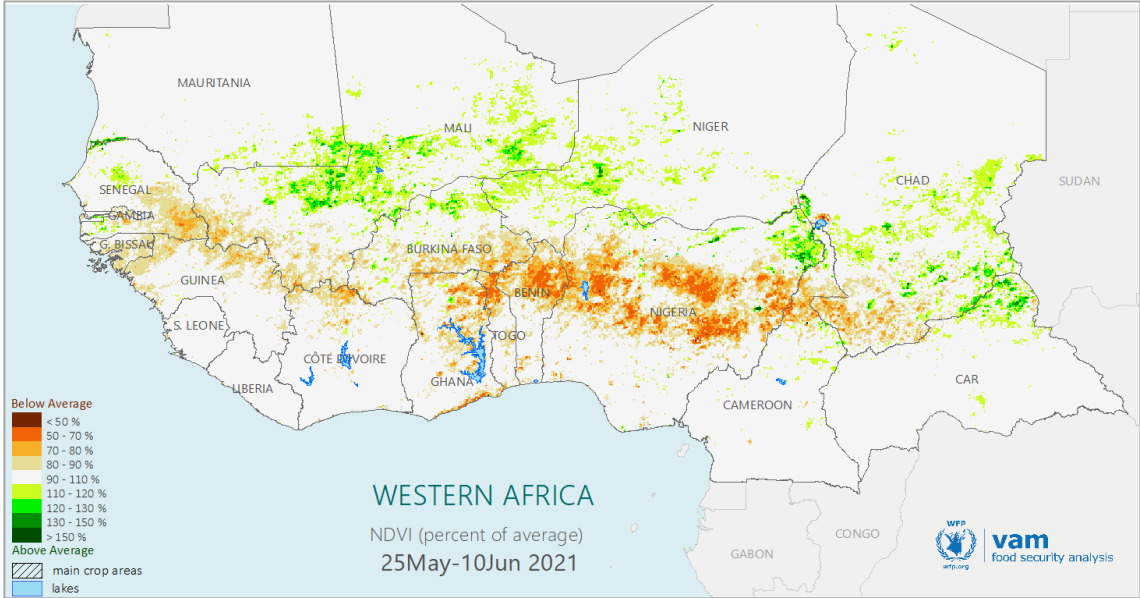


Rainfall anomaly (11 April – 10 June 2021): The map to the left shows the rainfall anomaly over the last two months in percentage of long-term average, based on CHIRPS satellite rainfall estimates.

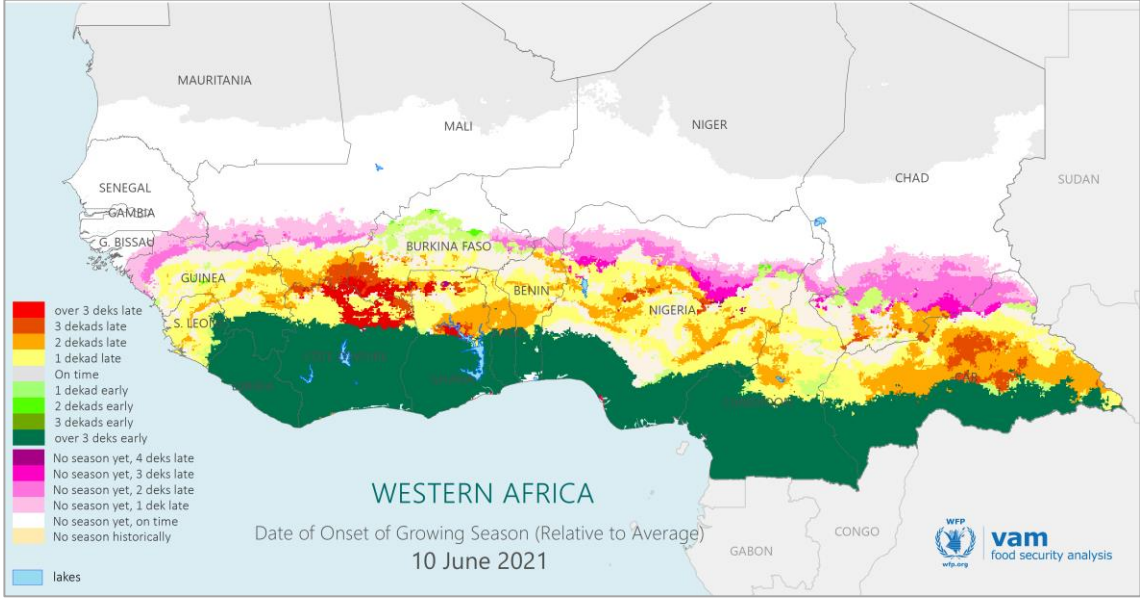
- **Cumulative rainfall:** Over the last two months, heavy rains (above 250 mm) have been recorded over some coastal countries in the south-western parts of the region (Sierra Leone, Liberia), as well as over southern coastal Nigeria, south-central Cameroon and CAR. Moderate rains of up to 250 mm were received further north (southern Mali, northern Côte d'Ivoire, southern Burkina Faso, Togo, Benin, central Nigeria, northern Cameroon and southern Chad), while the rainy season has not yet started in most of the Sahelian belt, from Senegal in the west, through central Mali, northern Burkina Faso, Niger, northern Nigeria and central Chad.
- **Rainfall anomaly:** Compared to the long-term average, rains have been below normal in the westernmost parts of the region (southern Senegal, Guinea-Bissau, western Guinea and north-western Mali), as well as in some coastal areas (south-eastern Côte d'Ivoire, Ghana, Togo and southern Benin). Moreover, below normal rainfall was recorded over much of Niger, northern Nigeria, and the Lake Chad Basin. Conversely, rains have been above normal in Sierra Leone, northern Liberia, Burkina Faso, southern Cameroon and western CAR during these early stages of the 2021 rainy season.
- **Summary:** This period corresponds to the *start of the rainy season in West Africa*. The current drier than normal conditions in the western parts, as well as over Niger and northern Nigeria, are unlikely to result in a significant impact on agricultural activities, given that planting activities in these areas usually start slightly later. However, the developments over the coming weeks will need to be monitored closely, as they coincide with the start of the sowing window in most of the Sahel. The current situation points towards a higher risk of a delayed start of the rainy season in the northern parts of the region.



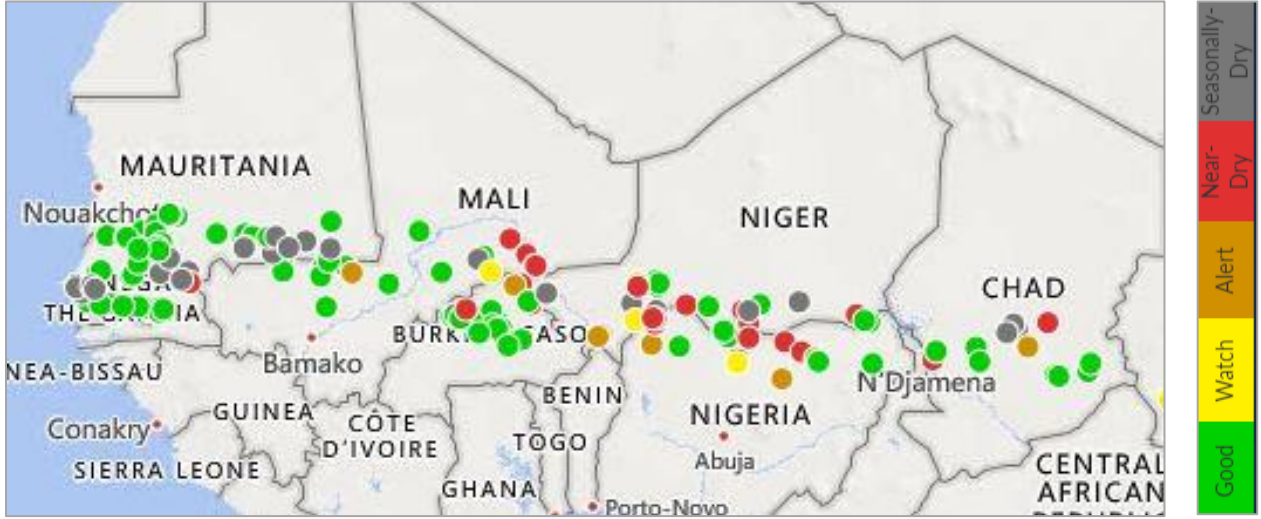
# Vegetation: current conditions (as of 10 June 2021)



NDVI (25 mai – 10 juin 2021) : la carte de gauche montre l'anomalie de la végétation en pourcentage de la moyenne, sur la base du MODIS NDVI



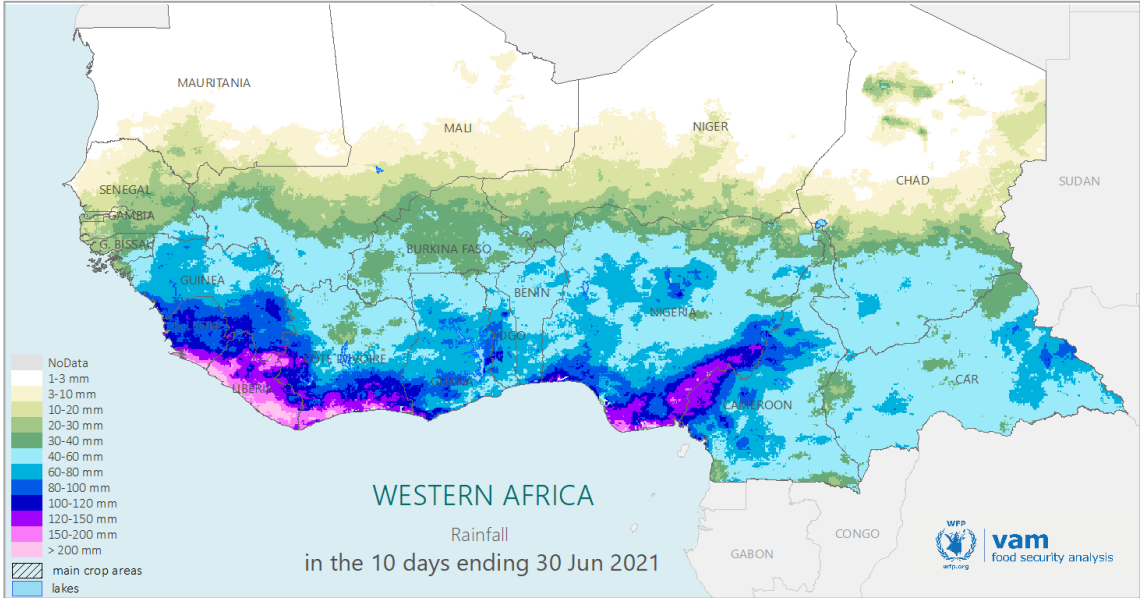
The onset of growing season anomaly (June 1-10, 2021): The map on the left shows the start of the growing season anomaly, using the vegetation phenological cycle to show the possible start of sowing activities.



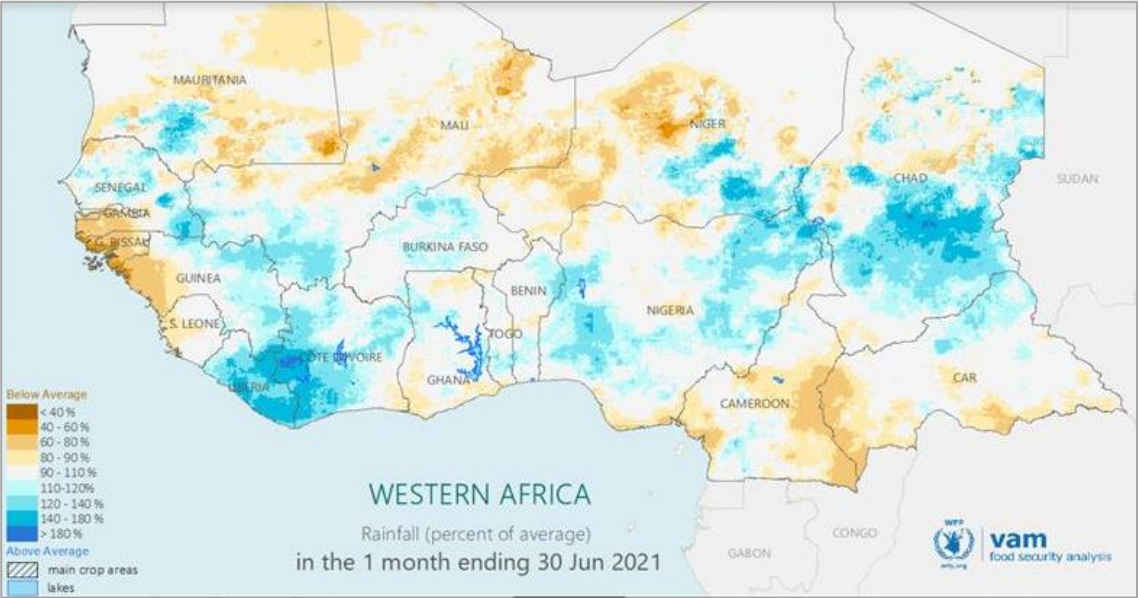
Water point status (as of 10 June 2021): Good: Higher than long term level (LTL), Watch: Between 50 to 100% of LTL, Alert: Between 3% and 50% of LTL, Near-Dry: Below 3% of LTL ( <https://earlywarning.usgs.gov/fews/waterpoint/index.php> )

- **Start of season:** The growing season onset map show that the 2021 growing season started early in the southern, coastal parts of West Africa. In the central parts of the region (from Guinea and Sierra Leone through northern Côte d'Ivoire, southern Mali, central Nigeria and northern CAR), the season started slightly later than normal (10-30 days), while an earlier than normal start of the season was recorded in Burkina Faso. The conditions for the potential start of planting activities have not yet been met in the Sahelian band, which for the southern areas indicates a later than normal start of the season (pink areas in the map below).
- **Vegetation:** Vegetation conditions are currently above normal in the northern part of the Sahel (northern Mali, northern Burkina Faso, northern Niger, as well as north-eastern Nigeria and most of Chad. Below normal vegetation conditions are recorded in the western parts of the region (south-eastern Senegal, south-western Mali), in southern Burkina Faso, northern Ghana, northern Benin, and particularly in central Nigeria. This is likely to be associated with the later than usual start of the rainy season in these areas, while the above normal conditions further north could be linked to the above average 2020 rainy season.
- **Water resources:** The availability of water resources in the region is generally favourable. However, in the eastern part of the Sahel (eastern Mali, Niger, northern Nigeria and Chad) the situation is deteriorating, with some water points in near-dry conditions.

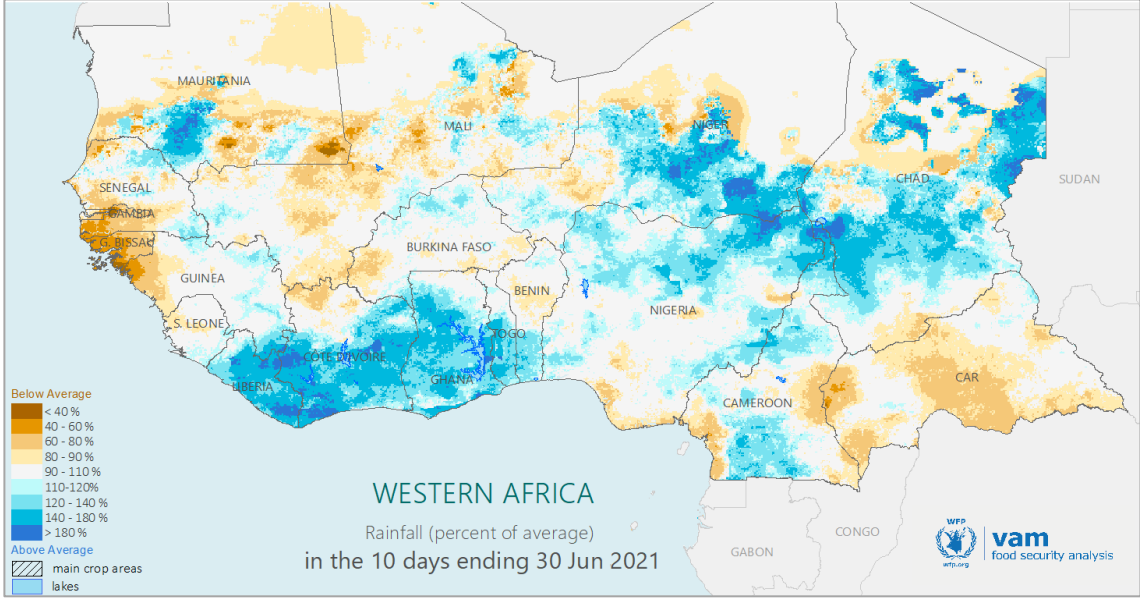
# Rainfall: short-term forecasts (21-30 June 2021)



Rainfall forecast (21-30 June 2021): The map to the left shows the short-range CHIRPS-GEFS forecasts for the period 21-30 June 2021, expressed in cumulative rainfall total.



Rainfall forecast (1-30 June 2021): The map to the left shows the short-range CHIRPS-GEFS forecasts for the period 1-30 June 2021, expressed in percentage of long-term average.

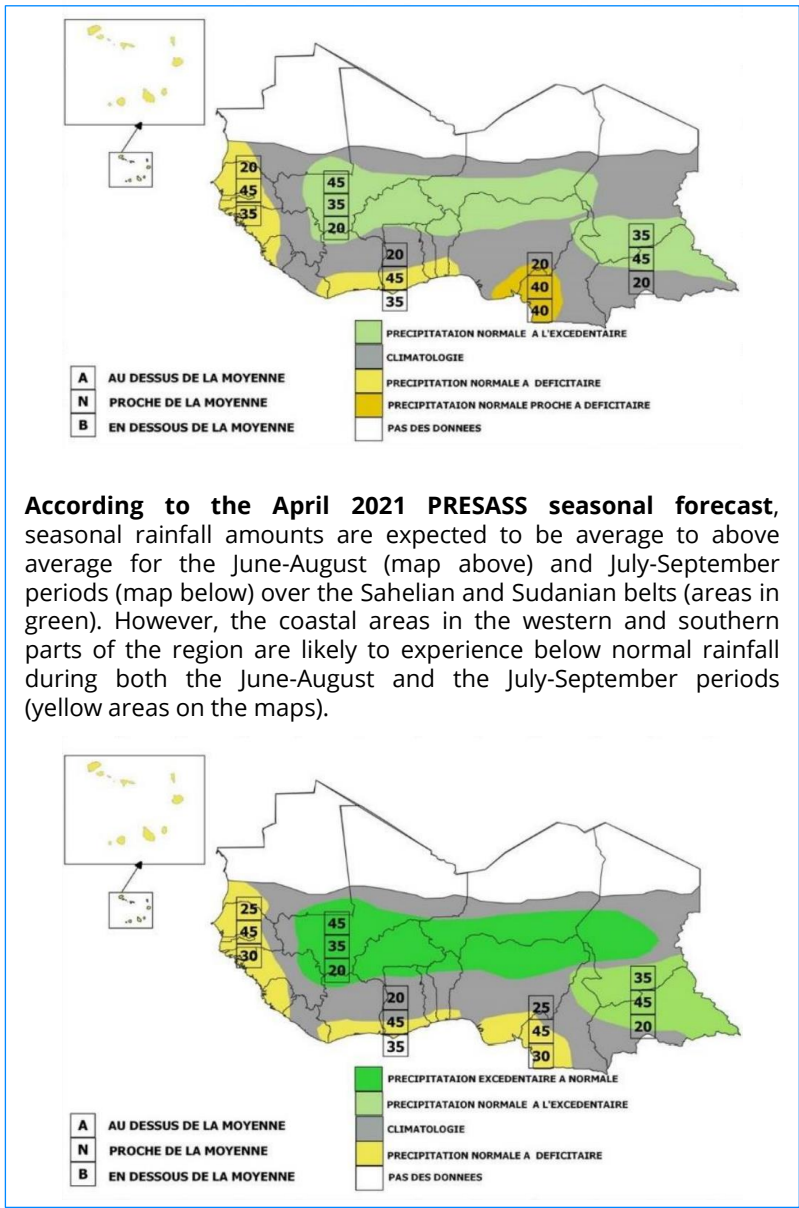


Rainfall forecast (21-30 June 2021): The map to the left shows the short-range CHIRPS-GEFS forecasts for the period 21-30 June 2021, expressed in percentage of long-term average.

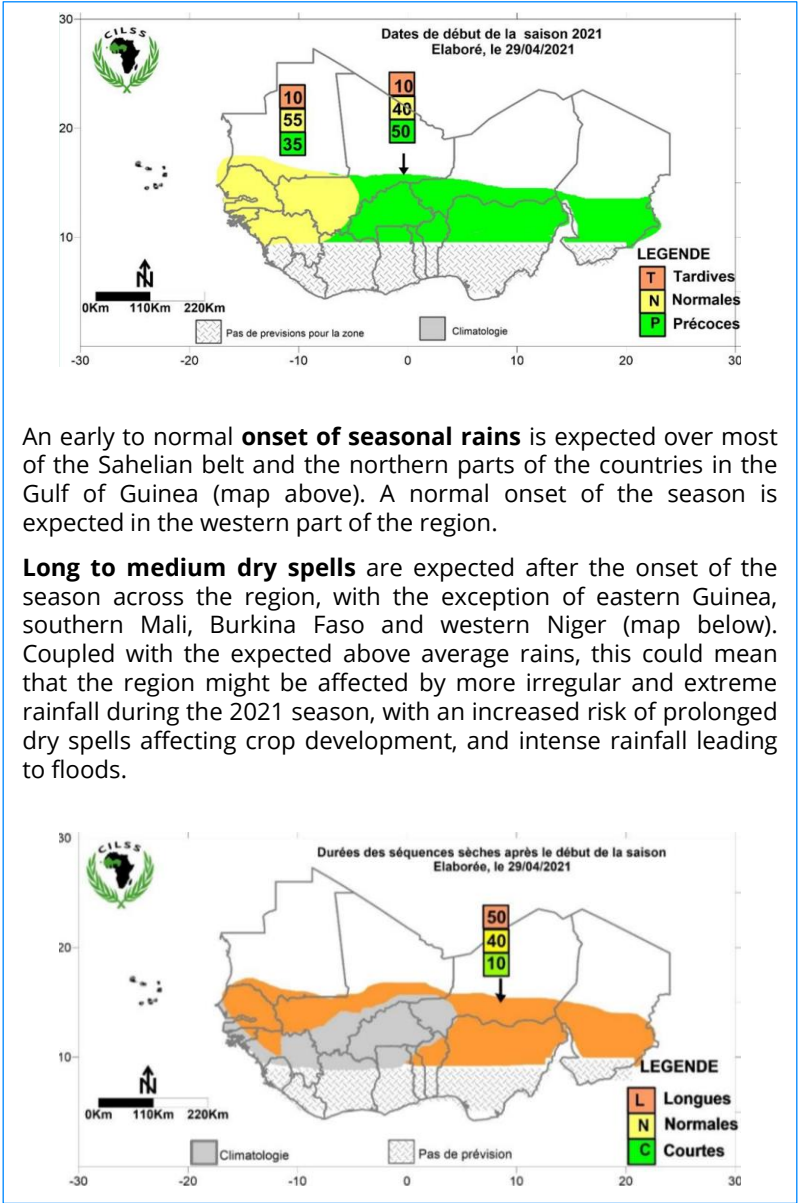
- **Cumulative rainfall forecast:** Over the forecast period (21-30 June 2021), heavy rains (over 120 mm) are expected over coastal areas in the south-western parts of the region (Sierra Leone, Liberia, Côte d'Ivoire) and in south-eastern Nigeria. Moderate rains of up to 120 mm are likely to be received further inland, including in most of Guinea, south-western Mali, northern Côte d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon, southern Chad and CAR. The rest of the region is expected to receive light to moderate rains (up to 40 mm), including some parts of the Sahel.
- **Rainfall anomaly forecast:** Compared to the long-term average, conditions are expected to be wetter than normal in the south-western parts of the region (Liberia, Côte d'Ivoire, Ghana, Togo), as well as in the eastern Sahel (Niger, northern Nigeria, southern Chad). Drier than normal conditions are likely to prevail in southern Senegal and Guinea-Bissau, as well as in parts of central Mali, coastal areas of Cameroon and in CAR (see map to the left).
- For the entire month of June, the forecasted anomaly suggests that drier than normal conditions will be recorded in coastal areas of southern Senegal, Guinea-Bissau and Guinea, as well as in northern Mali, western Niger and parts of Cameroon and CAR (see map above). Wetter than normal conditions are expected in Liberia and Côte d'Ivoire, south-western Mali, south-western Nigeria and the wider Lake Chad Basin, including in central Chad.



# Rainfall: long-term forecasts (June-September 2021)

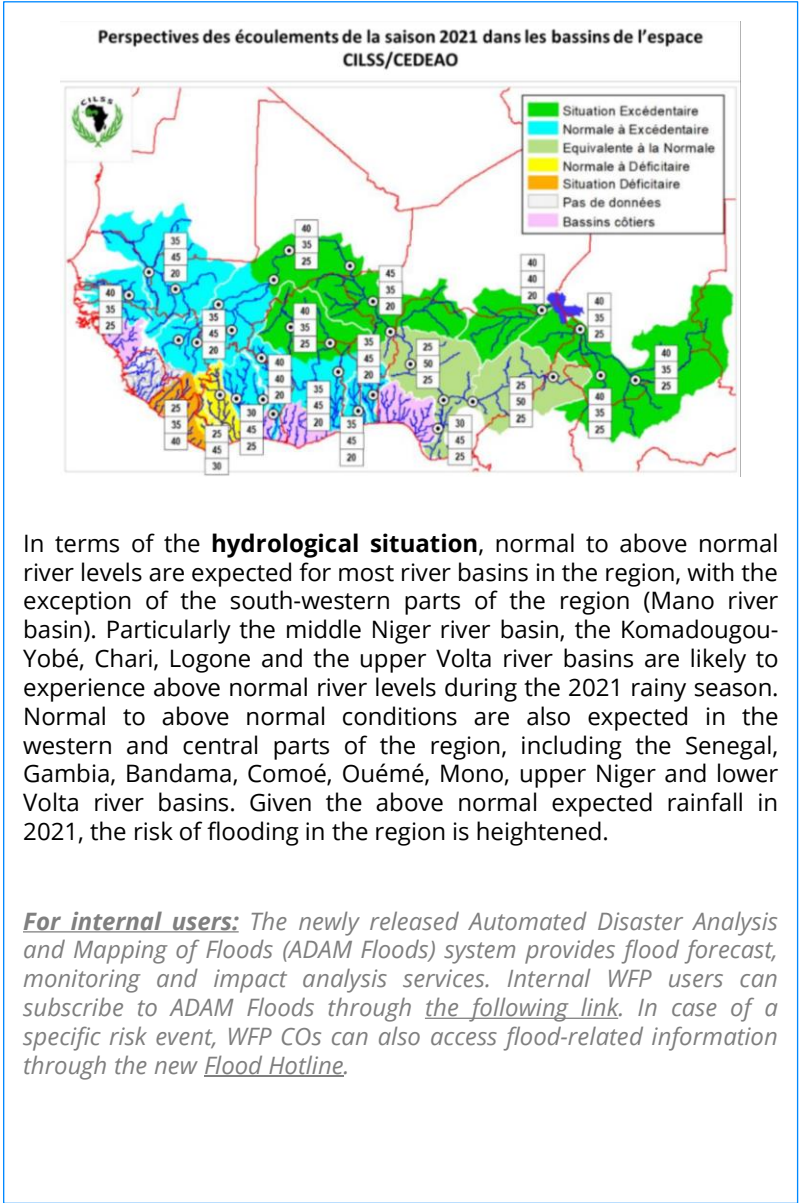


According to the April 2021 PRESASS seasonal forecast, seasonal rainfall amounts are expected to be average to above average for the June-August (map above) and July-September periods (map below) over the Sahelian and Sudanian belts (areas in green). However, the coastal areas in the western and southern parts of the region are likely to experience below normal rainfall during both the June-August and the July-September periods (yellow areas on the maps).



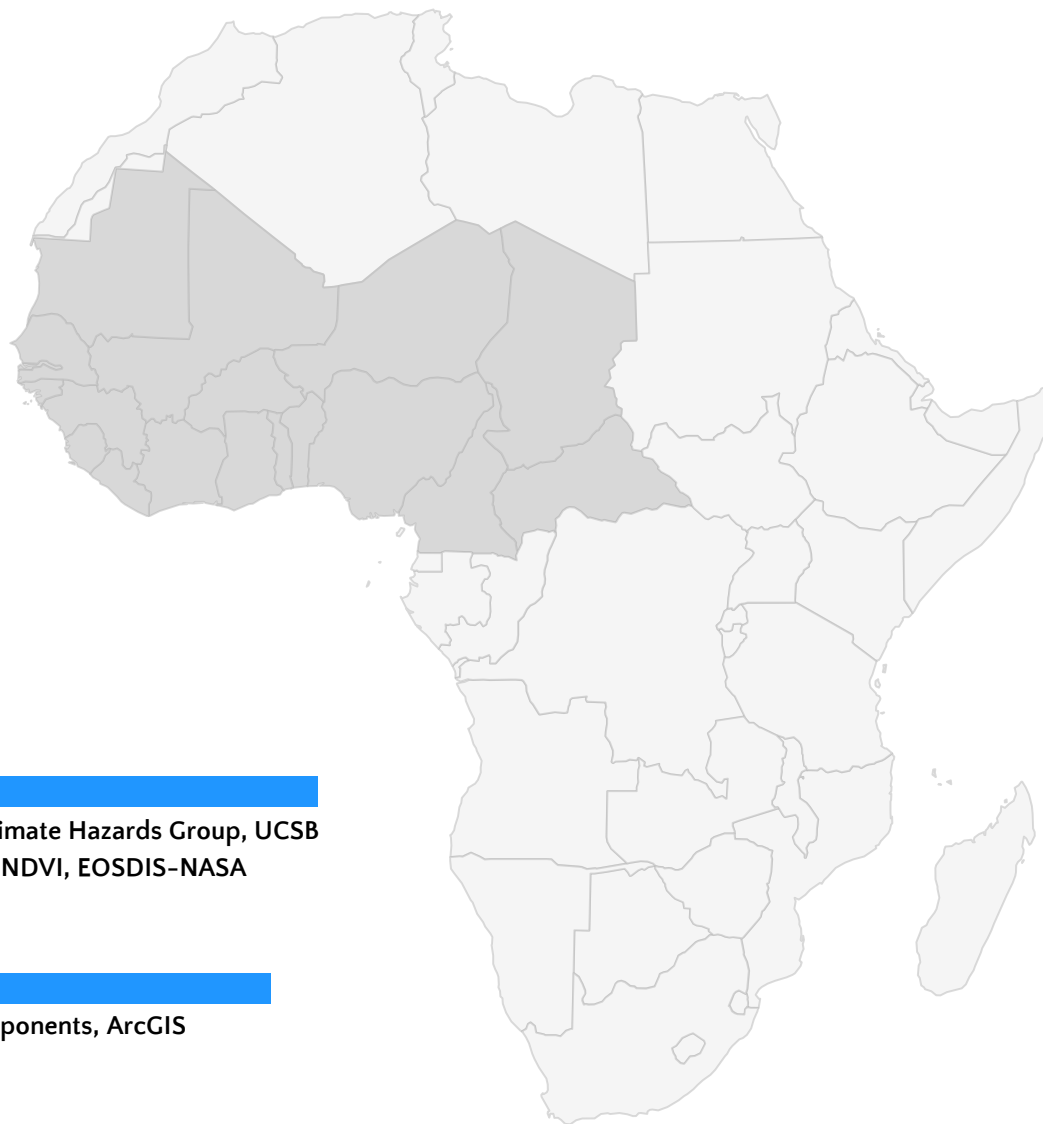
An early to normal **onset of seasonal rains** is expected over most of the Sahelian belt and the northern parts of the countries in the Gulf of Guinea (map above). A normal onset of the season is expected in the western part of the region.

**Long to medium dry spells** are expected after the onset of the season across the region, with the exception of eastern Guinea, southern Mali, Burkina Faso and western Niger (map below). Coupled with the expected above average rains, this could mean that the region might be affected by more irregular and extreme rainfall during the 2021 season, with an increased risk of prolonged dry spells affecting crop development, and intense rainfall leading to floods.



In terms of the **hydrological situation**, normal to above normal river levels are expected for most river basins in the region, with the exception of the south-western parts of the region (Mano river basin). Particularly the middle Niger river basin, the Komadougou-Yobé, Chari, Logone and the upper Volta river basins are likely to experience above normal river levels during the 2021 rainy season. Normal to above normal conditions are also expected in the western and central parts of the region, including the Senegal, Gambia, Bandama, Comoé, Ouémé, Mono, upper Niger and lower Volta river basins. Given the above normal expected rainfall in 2021, the risk of flooding in the region is heightened.

***For internal users:** The newly released Automated Disaster Analysis and Mapping of Floods (ADAM Floods) system provides flood forecast, monitoring and impact analysis services. Internal WFP users can subscribe to ADAM Floods through [the following link](#). In case of a specific risk event, WFP COs can also access flood-related information through the new [Flood Hotline](#).*



#### DATA SOURCES:

Rainfall: CHIRPS, Climate Hazards Group, UCSB  
Vegetation: MODIS NDVI, EOSDIS-NASA

#### PROCESSING:

VAM software components, ArcGIS

#### FOR FURTHER INFORMATION:

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