

# West Africa Seasonal Monitor

2021 Season



World Food Programme, Regional Bureau Dakar

July Update, 2021

# Contents

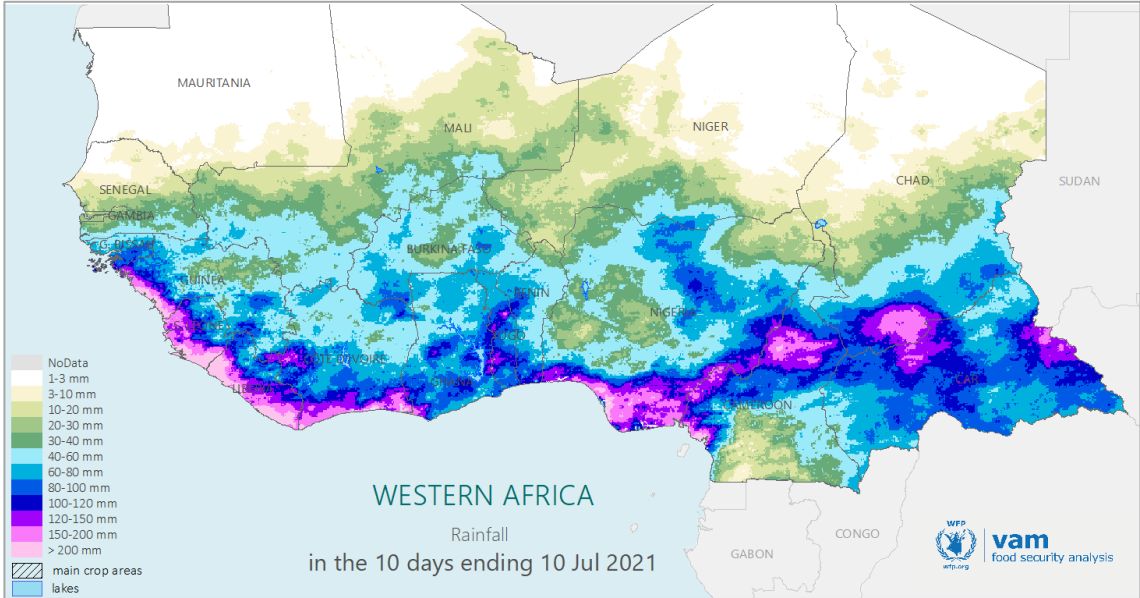
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## Highlights

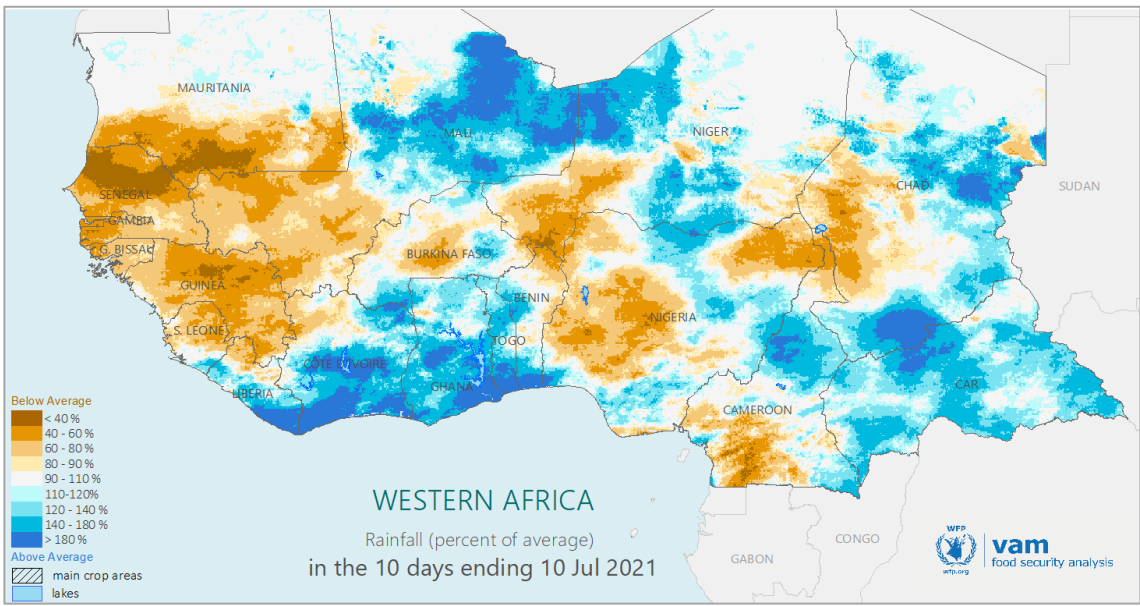
- **As of late July, the early stages of the core period of the rainy season** in West Africa continue to be characterised by variable conditions and the deficits persist in the western parts of the region (northern and western Senegal and most of Mauritania) as well as in western Guinea, Sierra Leone and north-western Liberia. Below average rains are also noticeable over southern and central Nigeria and southern Cameroon. The eastern Sahel benefited from more favourable condition with above average rainfall over Niger and Chad. July provides respite and rainfall improvement has offset deficits in many areas over the Sahel (*particularly over eastern Sahel in Niger, Nigeria and Chad*)
- Overall, the rainy season has so far **(between 1 April and 31 July)**, been characterised by variable conditions across the region. Rainfall deficits mainly affected the westernmost areas of the region (Mauritania, northern and western Senegal, western Guinea, Guinea Bissau). Furthermore, in the coastal areas of the Gulf of Guinea, below average rainfall was recorded, namely in southern Cote d'Ivoire, Togo, Benin, western and southern Nigeria. In contrast, seasonal rainfall is average to above average over the eastern Sahel in Niger and Chad. Rainfall is also above average in the arid regions of northern Mali, Niger and Chad. *As a result, drier than average conditions persist across the westernmost parts of the region, although better rains towards the end of the month brought improvements in the eastern Sahel ( Nigeria and Chad). Southern and central Nigeria and southern Cameroon, as well as western Guinea, Sierra Leone and north-western Liberia, experienced unfavourable conditions.* Early rainfall deficits have had a significant impact on the vegetation conditions that are currently below average in most of the region. Below normal vegetation conditions are currently recorded in a wide area over the western parts of the region (eastern and western Senegal, south-western Mali and southern Mauritania), in south-western Burkina Faso, southern Niger and particularly in central Nigeria as well as central Chad. Above average vegetation can be seen in the northern part of the Sahel (northern and central Mali, northern Burkina Faso, Niger, as well as north-eastern Nigeria and northern and southern Chad with favourable vegetation conditions in Mali, Niger and southern Chad.
- **According to short-term forecasts covering the period until 20 August 2021**, an improvement of seasonal rains will likely observed with wetter than normal conditions across most of West Africa. The Sahel will likely benefit from more favourable conditions and receive above normal rains except western Senegal . However, coastal areas in the southern parts of West Africa (Sierra Leone, Liberia, Cote d'Ivoire, Ghana, southern Benin, southern Togo, southern Nigeria) as well as southern Cameroon will be drier than average.
- **According to the PRESASS 2021 seasonal forecast June Update**, average to above average seasonal rainfall (in June-August 2021) is expected over most of the Sahelian and Sudanian belt, except for the coastal areas of southern Mauritania, Senegal, The Gambia, Guinea Bissau, Guinea and Sierra Leone. These conditions are associated with an early to normal **onset of seasonal rains** in the western parts of the region (Mauritania, Senegal, Guinea Bissau, Guinea, western Mali and western Burkina Faso), and normal to late in the eastern sector (eastern Burkina Faso, Niger, northern Nigeria and Chad) and **long to medium dry spells** throughout most of the region. 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 July 2021)



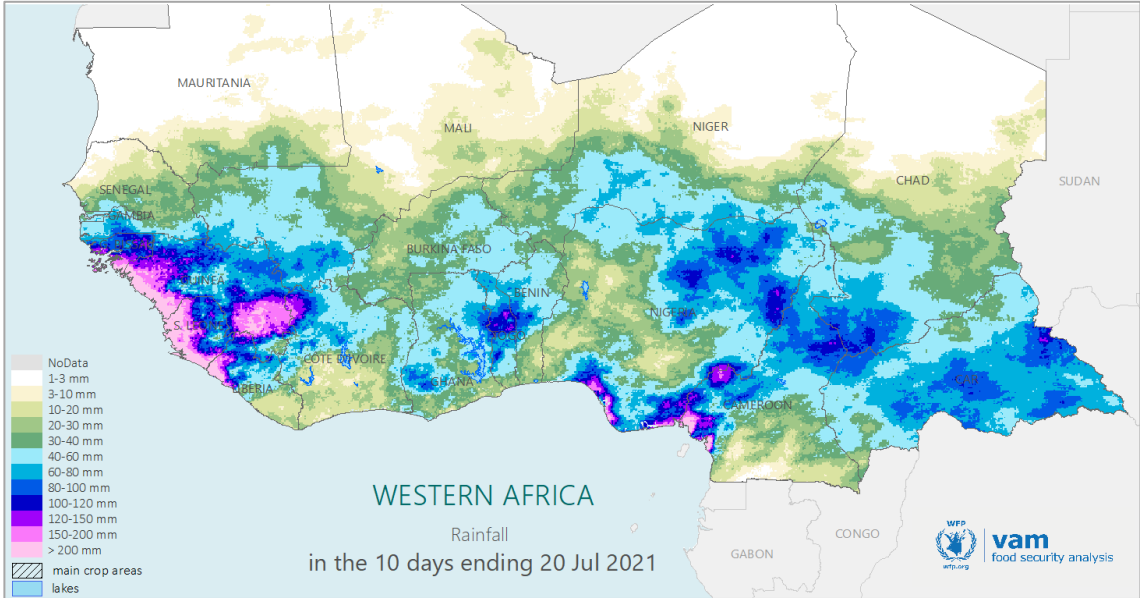
Cumulative rainfall (1-10 July 2021): The map to the left shows the total rainfall received over the last dekad, based on CHIRPS satellite rainfall estimates.



Rainfall anomaly (1-10 July 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.

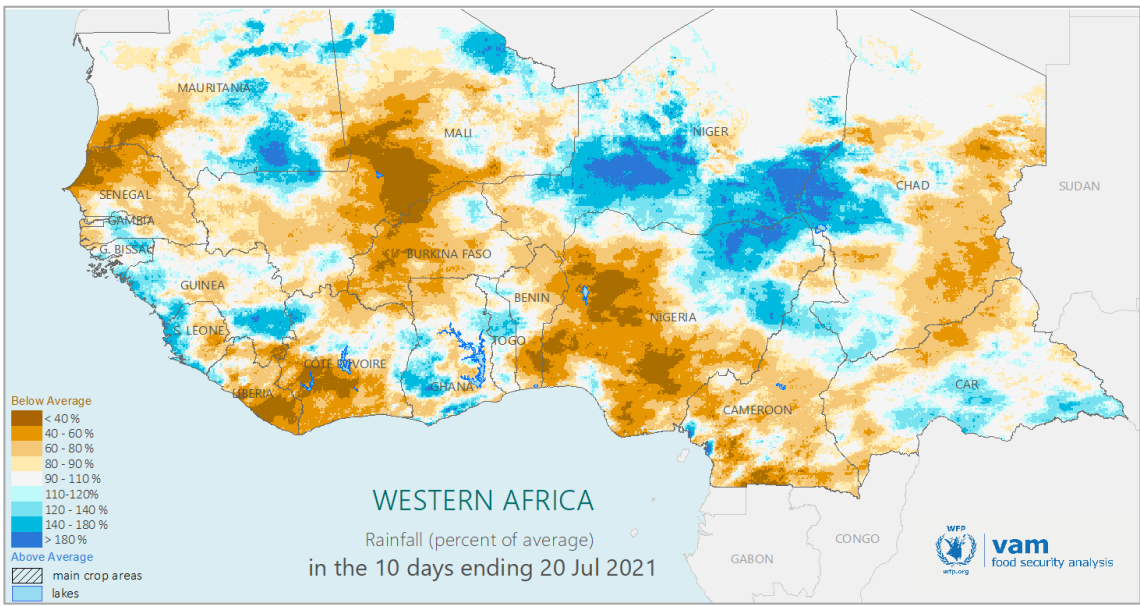
- **Cumulative rainfall:** During the first dekad of the month (1-10 July), the most important seasonal rainfall remained located in southern parts of the region. The heaviest rains were recorded over southern coastal areas in western Guinea, Sierra Leone, Liberia, southern (Cote d'Ivoire, Ghana, Togo, Benin and Nigeria) as well as central Cameroon, southern Chad and most of CAR. The Sahel generally received light to moderate seasonal rainfall. In the westernmost areas over northern Senegal and Mauritania conditions remained neutral.
- **Rainfall anomaly:** Rainfall remained below average over the western parts of the region– (Senegal, Mauritania, Gambia, Guinea Bissau, Guinea, Sierra Leone). Below average rainfall was observed in central Burkina Faso, western, parts of Nigeria, western Niger, western Chad and southern Cameroon. The rest of region benefited from wetter than normal conditions, including the arid areas of northern Mali and northern Niger.

# Rainfall: latest developments (11-20 July 2021)



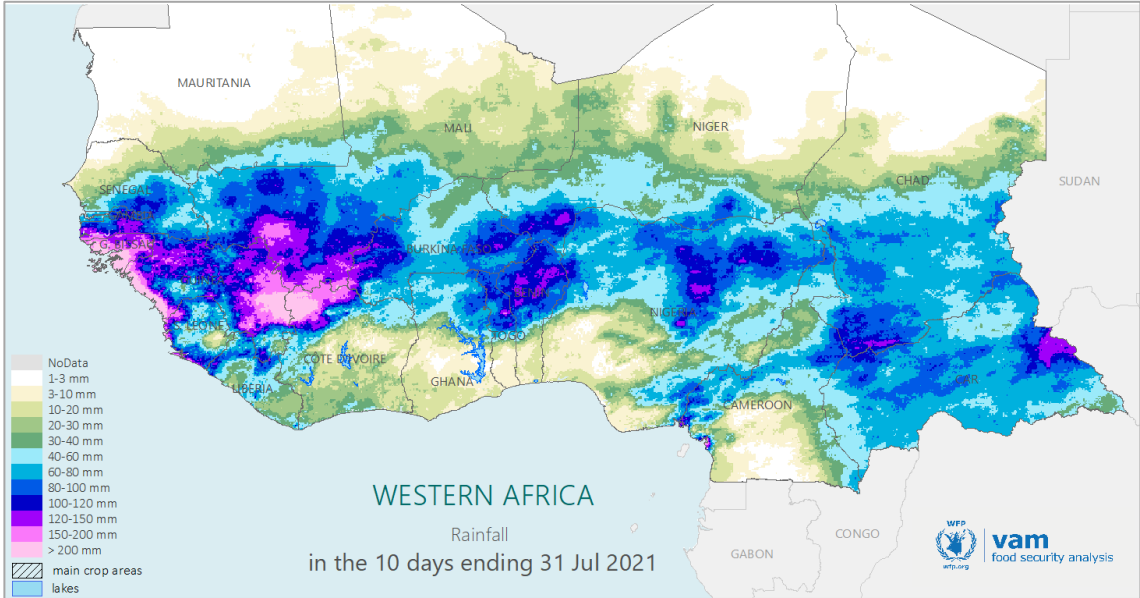
Cumulative rainfall (11-20 July 2021): The map to the left shows the total rainfall received over the last dekad, based on CHIRPS satellite rainfall estimates.

- **Cumulative rainfall:** During the second dekad of the month (11-20 July), little rainfall was received throughout the region. Only Guinea Bissau, western and eastern Guinea, Sierra Leone, central Togo, as well as coastal areas of Nigeria and south-western Cameroon recorded important seasonal rainfall. Elsewhere light to moderate rains were received with the highest amounts recorded in CAR, south-western Chad, central Cameroon, north-eastern Nigeria and western Mali.
- **Rainfall anomaly:** During this dekad the region remain characterised by below average conditions. Only central Niger, western Chad, north-eastern Nigeria and south-eastern Mauritania experienced above average rainfall, as well as localised areas in Guinea, Ghana, Togo and CAR. The areas most affected by abnormal dryness include northern Senegal and western Mauritania, central Mali, southern Liberia and Côte d'Ivoire, as well as southern and central Nigeria, most of Cameroon and eastern Chad.

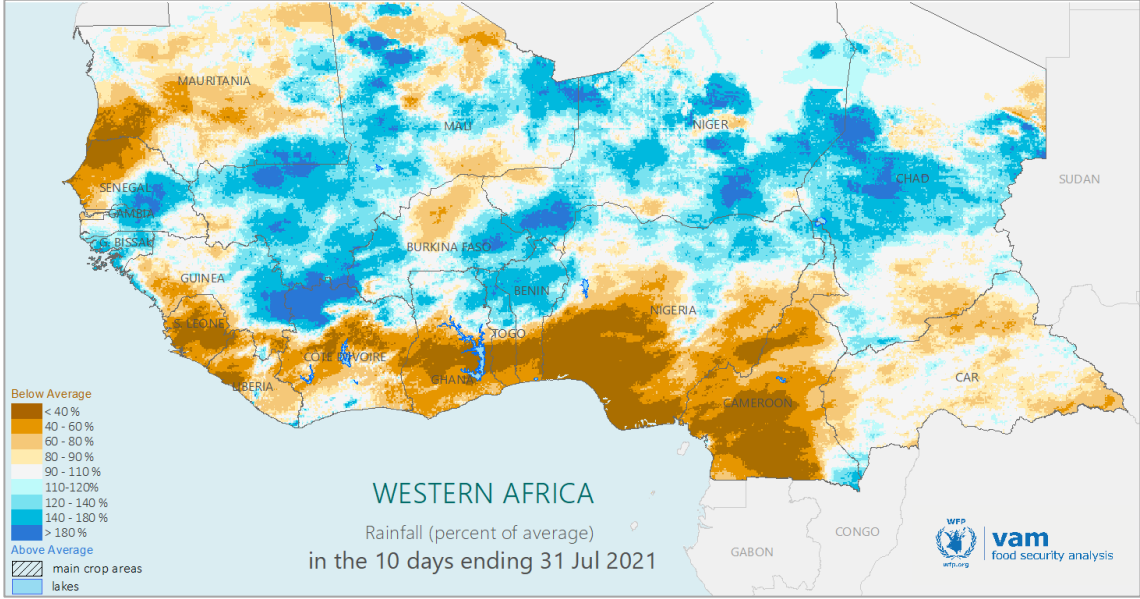


Rainfall anomaly (11-20 July 2021): The map to the left shows the rainfall anomaly over the last dekad in percentage of long-term average, based on CHIRPS satellite rainfall estimates.

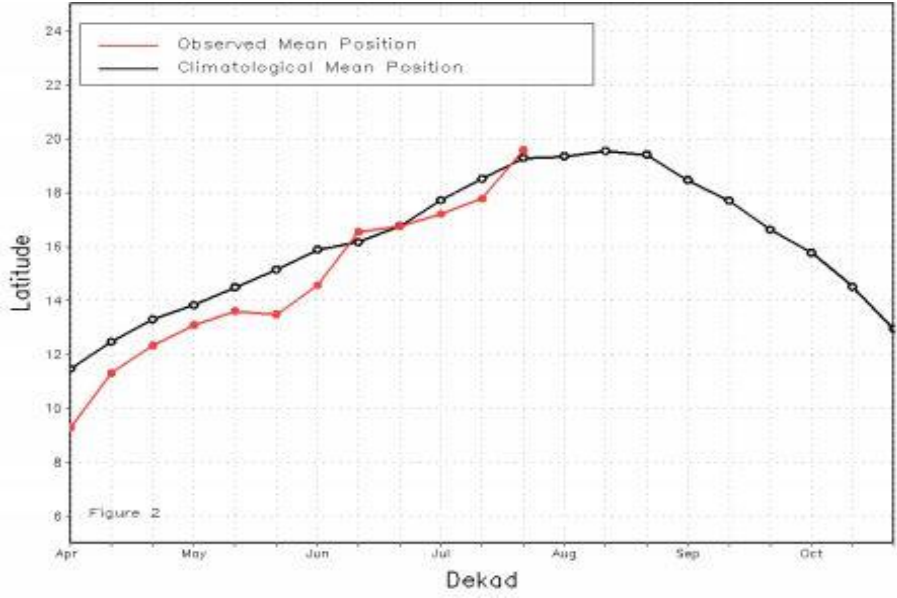
# Rainfall: latest developments (21-31 July 2021)



Cumulative rainfall (21-31 July 2021): The map to the left shows the total rainfall received over the last dekad, based on CHIRPS satellite rainfall estimates.



Rainfall anomaly (21-31 July 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.

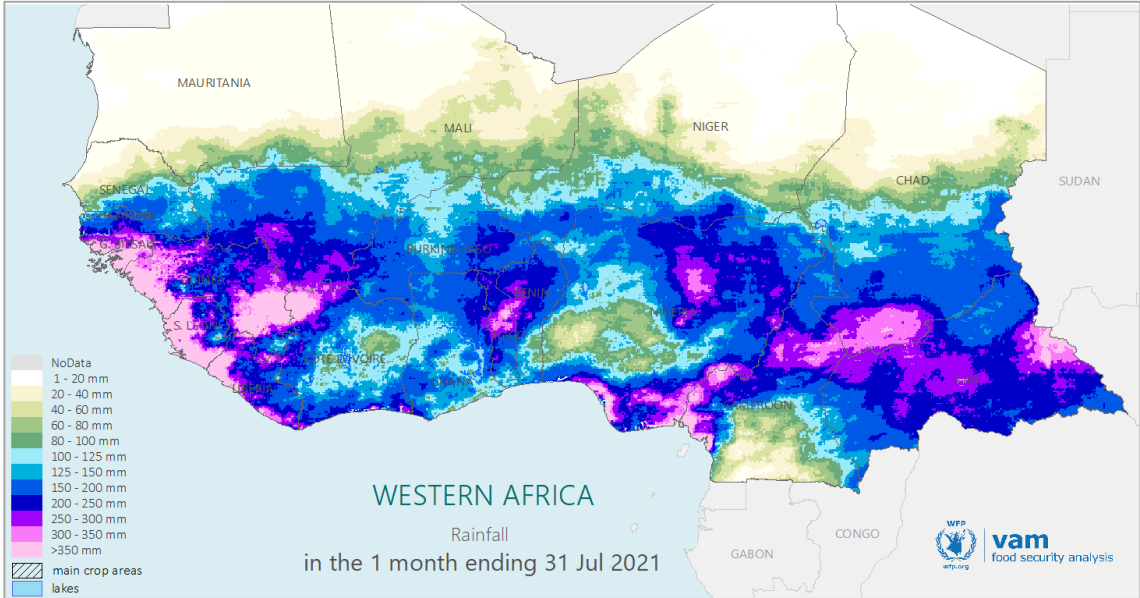


Current ITCZ position (red) vs long term average position (black) as of 31 July 2021: ITCZ: the Inter-Tropical Convergence Zone (ITCZ) is the border between dry areas and areas where the rainfall season is ongoing. It moves northwards as the monsoon advances, backtracking southwards as the monsoon wanes. Delays (advances) in this movement lead to drier (wetter) conditions on the ground.

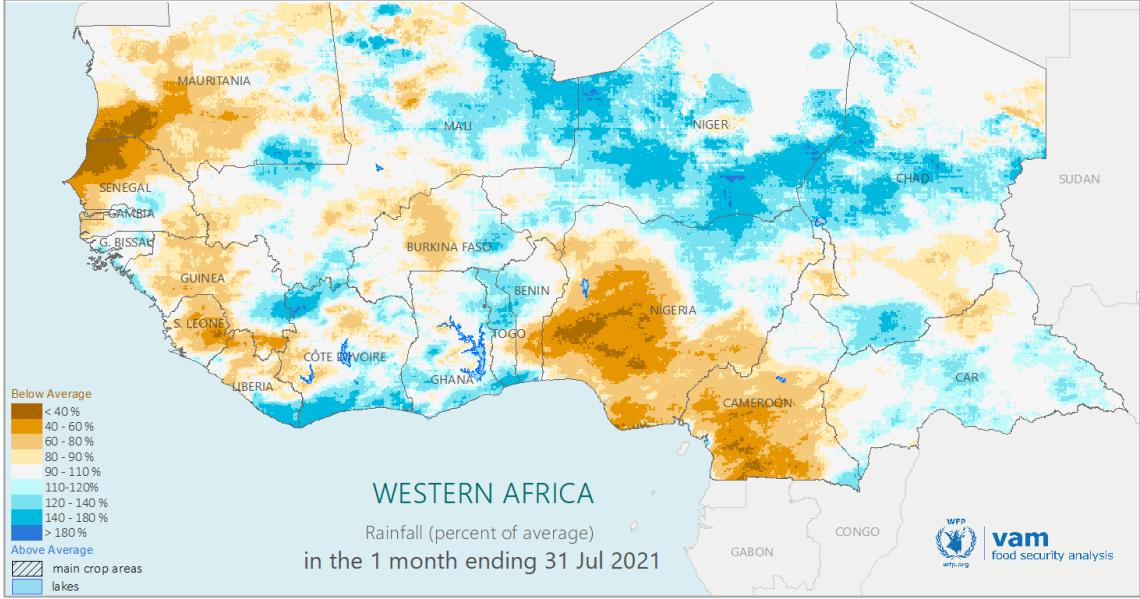
- **Cumulative rainfall:** During the last dekad of July, the seasonal rainfall increased in the Sahel. Moderate to heavy rains were received in southern Senegal, southern Mali, Burkina Faso, southern Niger and southern Chad. In the rest of Sahel, including over the northern areas from Senegal to Chad, light to moderate seasonal rainfall was recorded. In the coastal areas of the Gulf of Guinea, as well as southern Cameroon, light to moderate rains were received.
- **Rainfall anomaly:** Rainfall remained below average over the western parts of the region (northern and western Senegal and western Mauritania) while the rest of the Sahel benefited from wetter conditions during this period. This will help to offset the early season dryness and improve vegetation condition and sowing activities. In the coastal areas from Guinea to Cameroun, seasonal rainfall is also below normal.
- **ITCZ:** Over the western areas of the region the ITCZ moved further north and is now located around the 19.6N, north of the long-term average. This explains the ongoing moderate to heavy seasonal rainfall in the western Sahel. Over the eastern part of the region the ITCZ has shifted south compared to previous dekad but remains north of its average position which may explain the unfavourable rainfall conditions in the Gulf of Guinea, northern Cameroon, and CAR.



# Rainfall: the last month (1-31 July 2021)



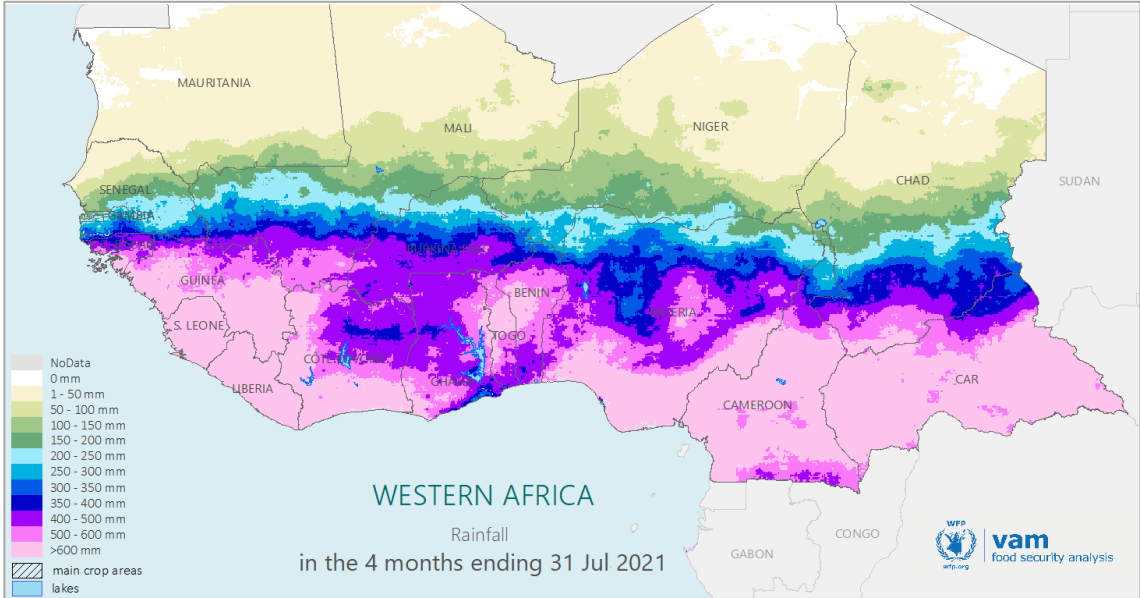
Cumulative rainfall (1-31 July 2021): The map to the left shows the total rainfall received over the last decade, based on CHIRPS satellite rainfall estimates.



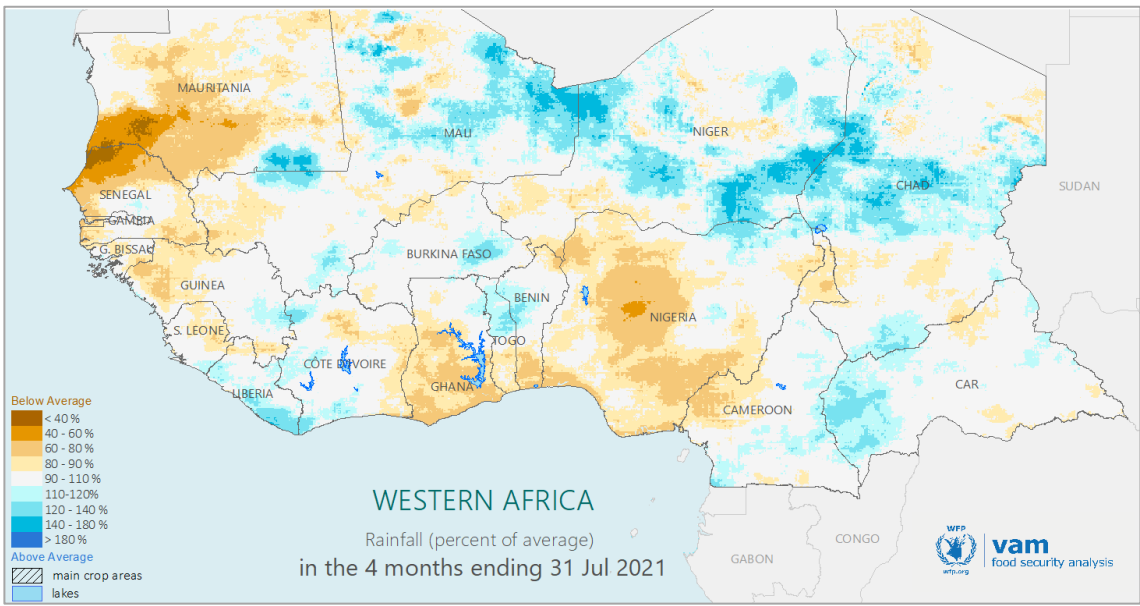
Rainfall anomaly (1-31 July 2021): The map to the left shows the rainfall anomaly over the last decade in percentage of long-term average, based on CHIRPS satellite rainfall estimates.

- **Cumulative rainfall:** In July, an adequate distribution of rainfall was observed throughout the region, with the exception of southern Cameroon and central Nigeria, which only recorded very light rainfall during the month. Significant rainfall was received over most of the region. Only the northern areas of the Sahel received little to moderate (up to 100 mm) rains. The heaviest seasonal rains (over 350 mm) were received in Guinea Bissau, Guinea, Sierra Leone, Liberia, northern Mali, northern Togo and Benin, NE and SE Nigeria, Cameroon and the whole of CAR.
- **Rainfall anomaly:** As of late July, the early stages of the core period of the rainy season, West Africa continue to be characterised by variable conditions. Rainfall deficits persist in the western parts of the region (northern and western Senegal and most of Mauritania) as well as in western Guinea, Sierra Leone and north-western Liberia. Below average rains are also noticeable over southern and central Nigeria and southern Cameroon. The eastern Sahel benefited from more favourable condition with above average rainfall over Niger and Chad.
- **Summary:** July saw the continuation of drier than average conditions across the westernmost parts of the region, though better rains towards the end of the month brought improvement in the eastern Sahel (Niger, Nigeria and Chad). Southern and central Nigeria and southern Cameroon, as well as western Guinea, Sierra Leone and half north-western Liberia, experienced unfavourable conditions.

# Rainfall: the season so far (1 April – 31 July 2021)



Cumulative rainfall (01 April – 31 July 2021): The map to the left shows the total rainfall received over the last two months, based on CHIRPS satellite rainfall estimates.

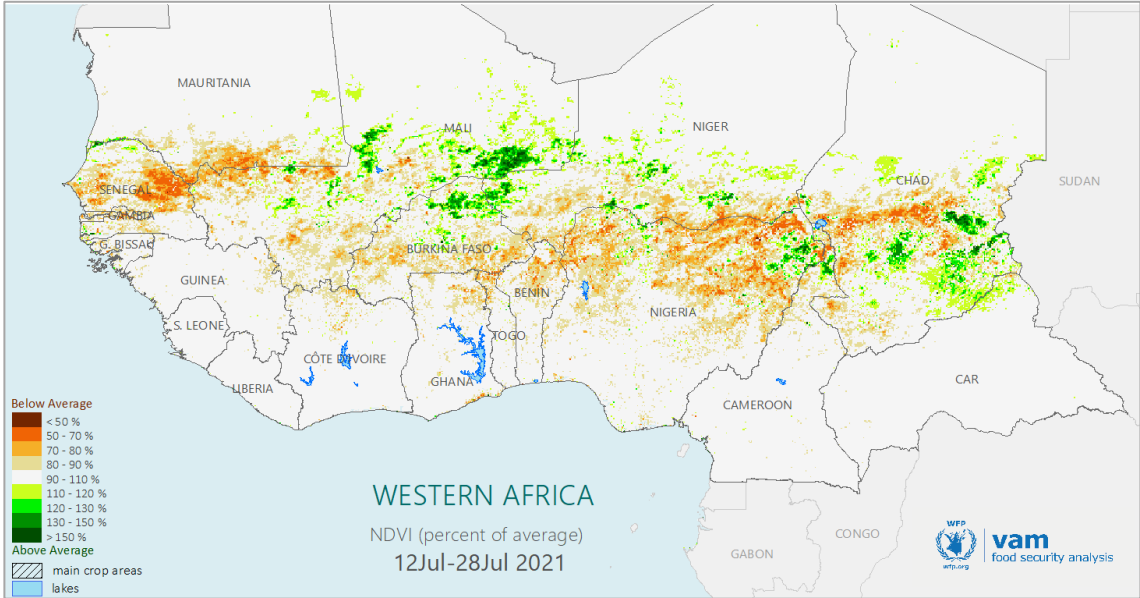


Rainfall anomaly (1 April – 30 July 2021): The map to the left shows the rainfall anomaly over the last two months in percentage of long-term average, based on CHIRPS satellite rainfall estimates.

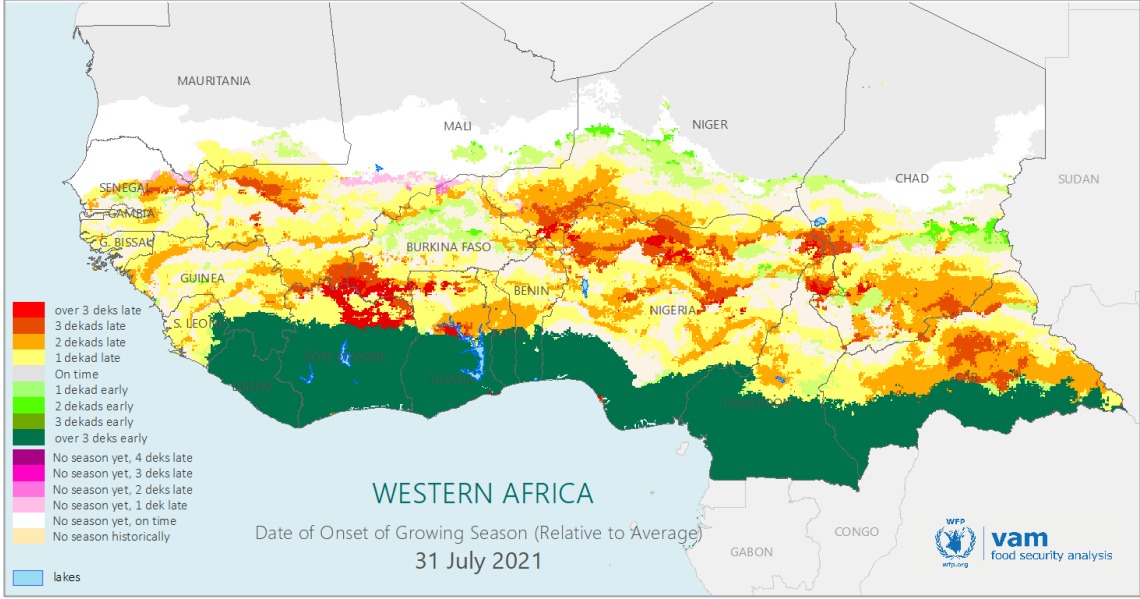
- **Cumulative rainfall:** By the end of July, the region has reached the early stages of the core period of the rainy season. Over the past four months, heavy rains (above 600 mm) have been recorded over some coastal countries in the south-western parts of the region (Sierra Leone, Liberia, southern Guinea), as well as over southern coastal areas of Nigeria, south-central Cameroon and CAR. Meanwhile, moderate seasonal rainfall (up to 250 mm) was received over southern Mali, southern Senegal, northern Côte d'Ivoire, southern Burkina Faso, Togo, Benin, central Nigeria, northern Cameroon and southern Chad. Further north in the Sahelian belt the rainy season has recently started with light to moderate rains.
- **Rainfall anomaly:** Overall, the rainy season has so far been characterised by variable conditions across the region. Rainfall deficits mainly affected the westernmost areas of the region (Mauritania, northern and western Senegal, western Guinea, Guinea Bissau). Furthermore, in the coastal areas of the Gulf of Guinea, below average rainfall was recorded, namely in southern Cote d'Ivoire, Togo, Benin, western and southern Nigeria. In contrast, seasonal rainfall is average to above average over the eastern Sahel in Niger and Chad. Rainfall is also above average in the arid regions of northern Mali, Niger and Chad.
- **Summary:** So far, these deficits are of no great concern, given that the region is only now entering the critical stages of its rainy season. In the western parts of the region, the below average rainfall received so far is unlikely to significantly impact agricultural activities, as these occur mostly in late July/early August, when more favourable rains were recorded. In western Guinea and coastal parts of Côte d'Ivoire, Togo, Benin and Nigeria, rainfall deficits might be offset by the overall rainfall and the length of the season. However, the current situation does point towards a higher risk of deficits which could impact crop yields in the western parts of the region. It is also important to note the ongoing abnormal dryness recorded in Ghana, Togo, Benin and south-western Nigeria over the last 4 months



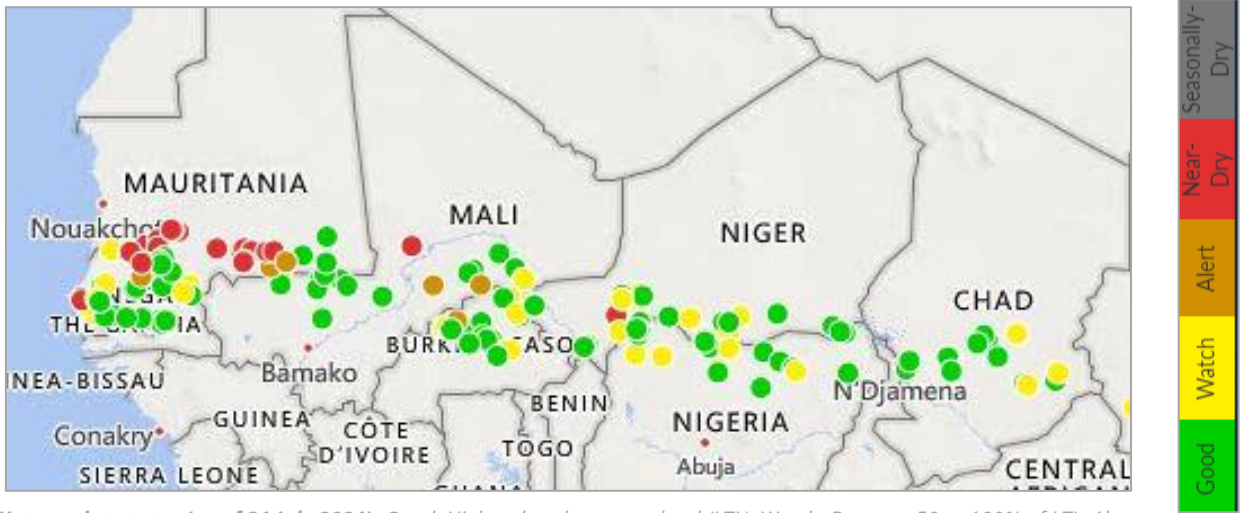
# Vegetation: current conditions (as of 31 July 2021)



NDVI (July 12 - July 28 2021): the map on the left shows the vegetation anomaly as a percentage of the average, based on the MODIS NDVI



2021 Onset of growing season anomaly (as of July 31, 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.

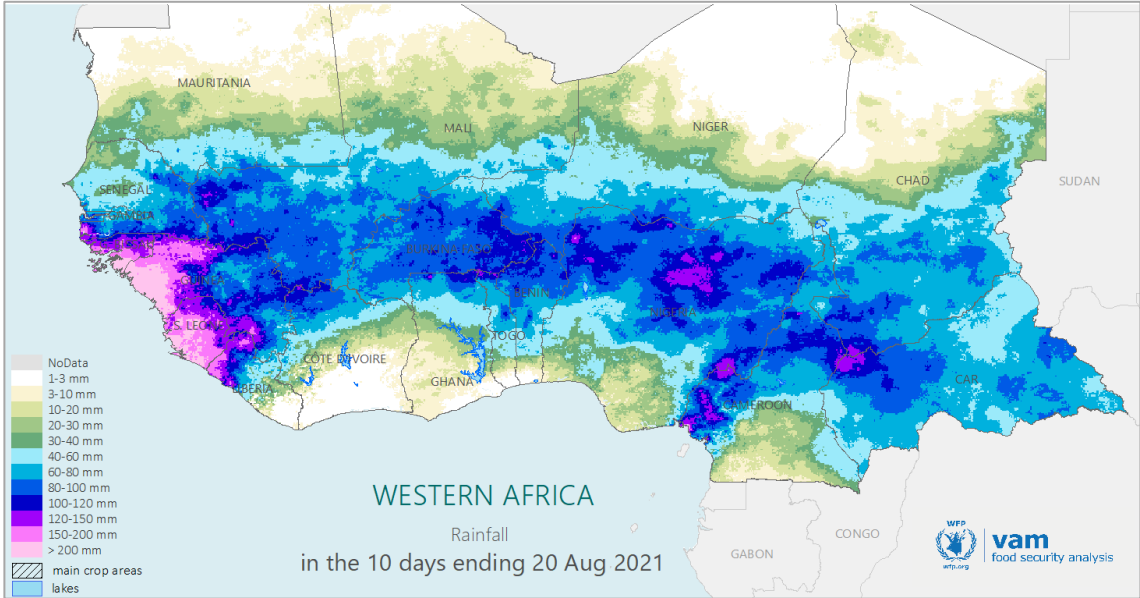


Water point status (as of 31 July 2021): Good: Higher than long term level (LTL), Watch: Between 50 to 100% of LTL, Alert: Between 3% and 50% of LTL, Near-Dry: Below 3% of LTL ( <https://earlywarning.usgs.gov/fews/waterpoint/index.php> )

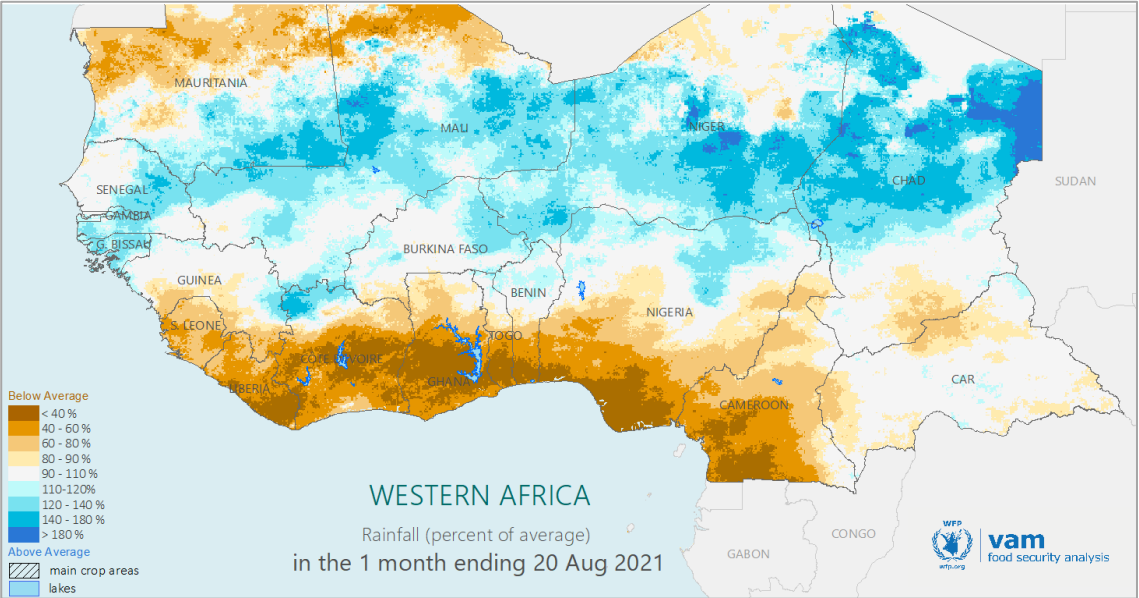
- **Start of season:** The growing season onset map suggests that the 2021 growing season started early in the southern, coastal parts of West Africa. In the central parts of the region (from Guinea and Sierra Leone through northern Côte d'Ivoire, southern Mali, central Nigeria, southern Chad and northern 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, central Senegal, eastern Chad and Northern Niger. Until the end of July, the conditions for the potential start of planting activities have not yet been met in the westernmost areas (northern Senegal and most of Mauritania).
- **Vegetation:** Early rainfall deficits have had an significant impact on the vegetation conditions that are currently below average in most of West Africa. Below normal vegetation conditions are currently recorded in a wide area over the western parts of the region (eastern and western Senegal, south-western Mali and southern Mauritania), in south-western Burkina Faso, southern Niger and particularly in central Nigeria as well as central Chad. Above average vegetation can be seen in the northern part of the Sahel (northern and central Mali, northern Burkina Faso, Niger, as well as north-eastern Nigeria and northern and southern Chad with favourable vegetation conditions in Mali, Niger and southern Chad. This can 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 westernmost part of the Sahel (northern and western Senegal and southern Mauritania) the situation is deteriorating, with some water points in near-dry conditions.



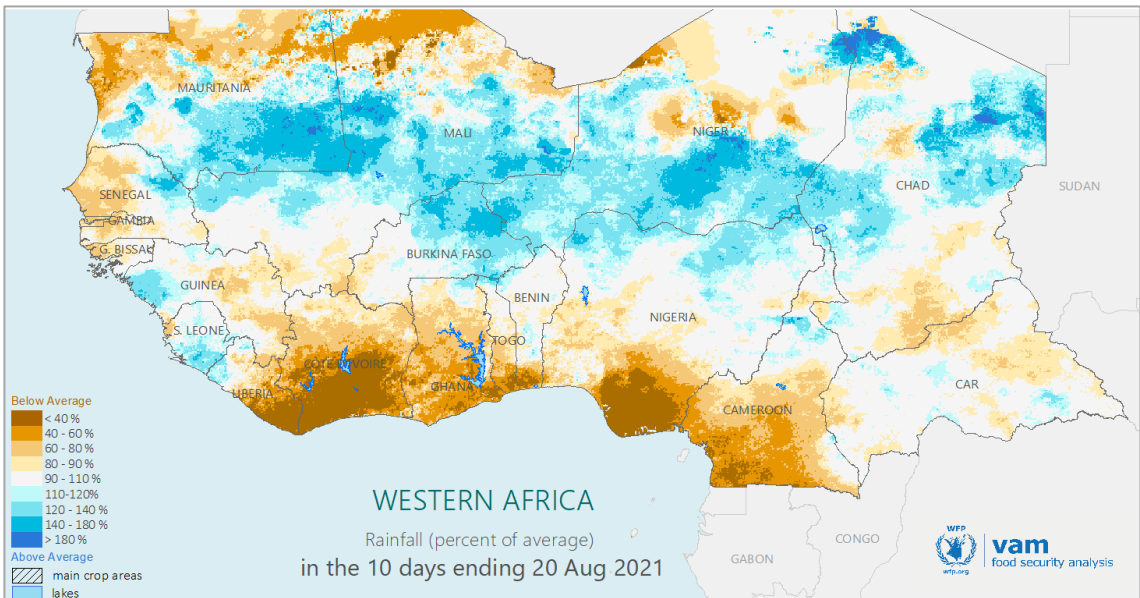
# Rainfall: short-term forecasts (10-20 August 2021)



Rainfall forecast (11 - 20 August 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.



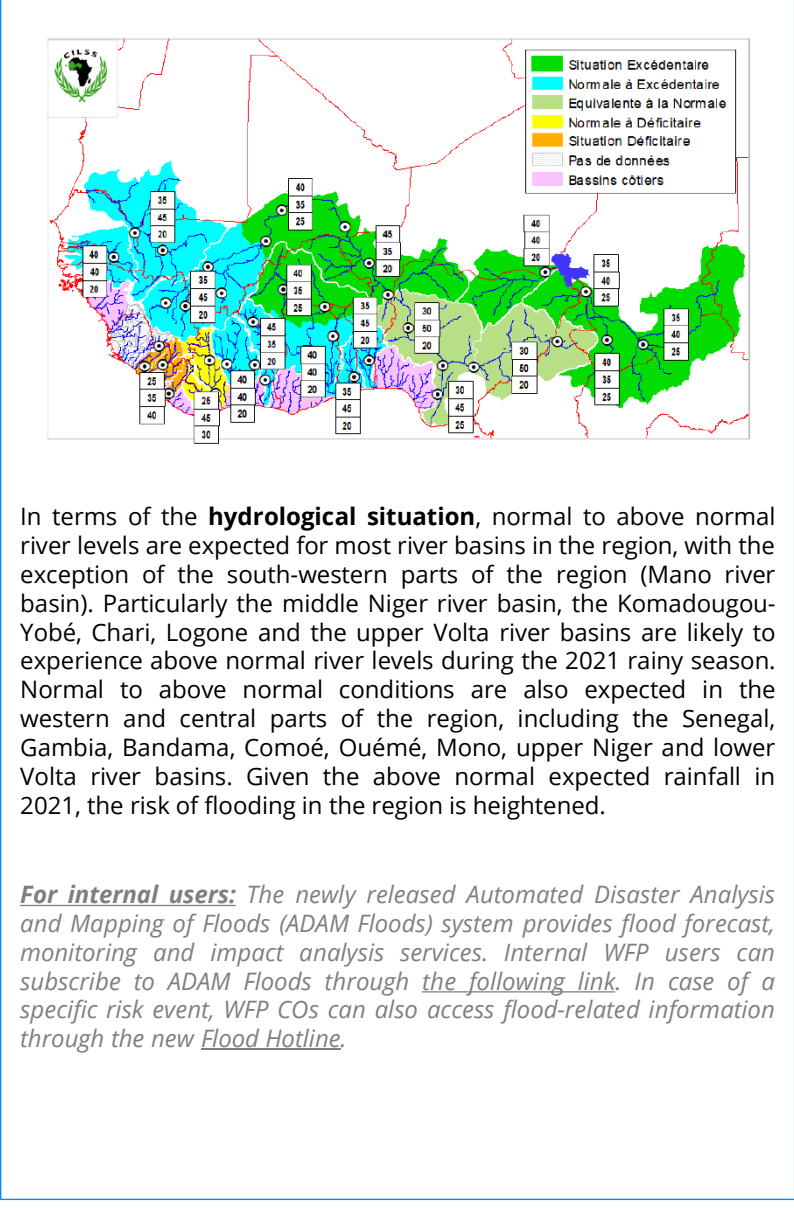
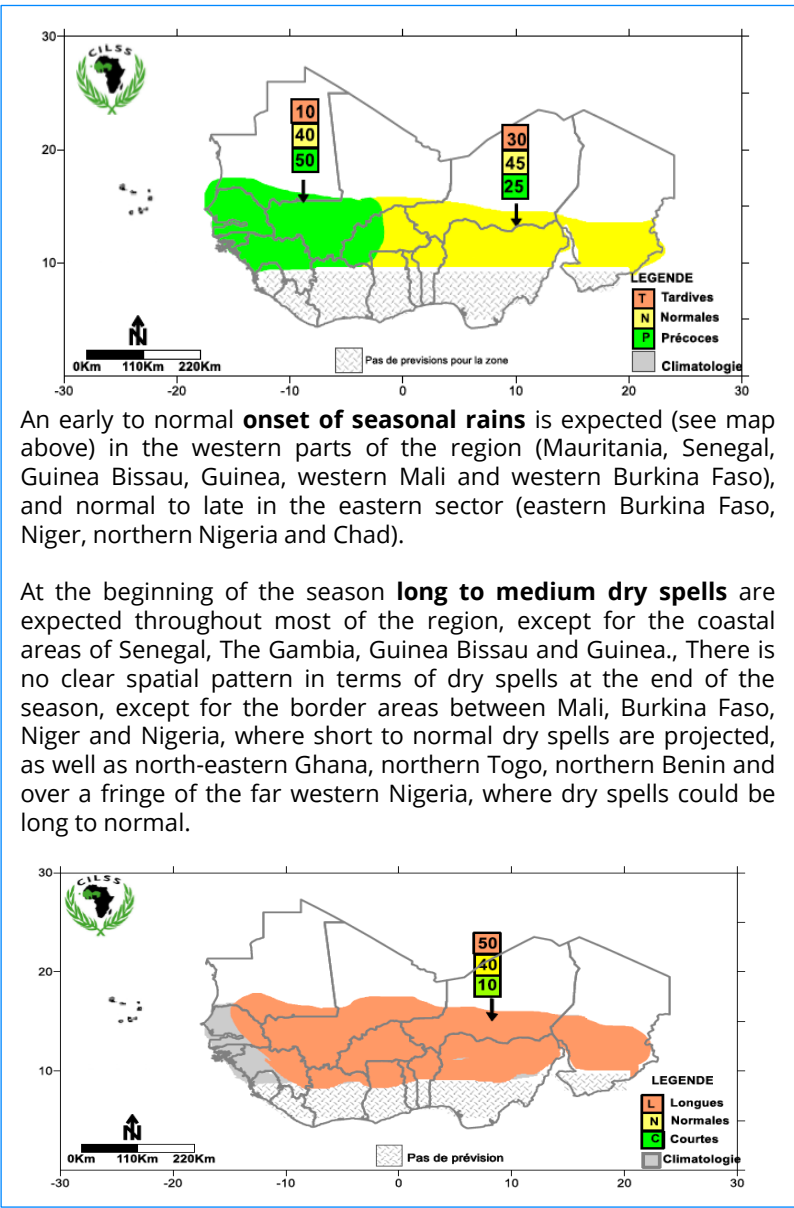
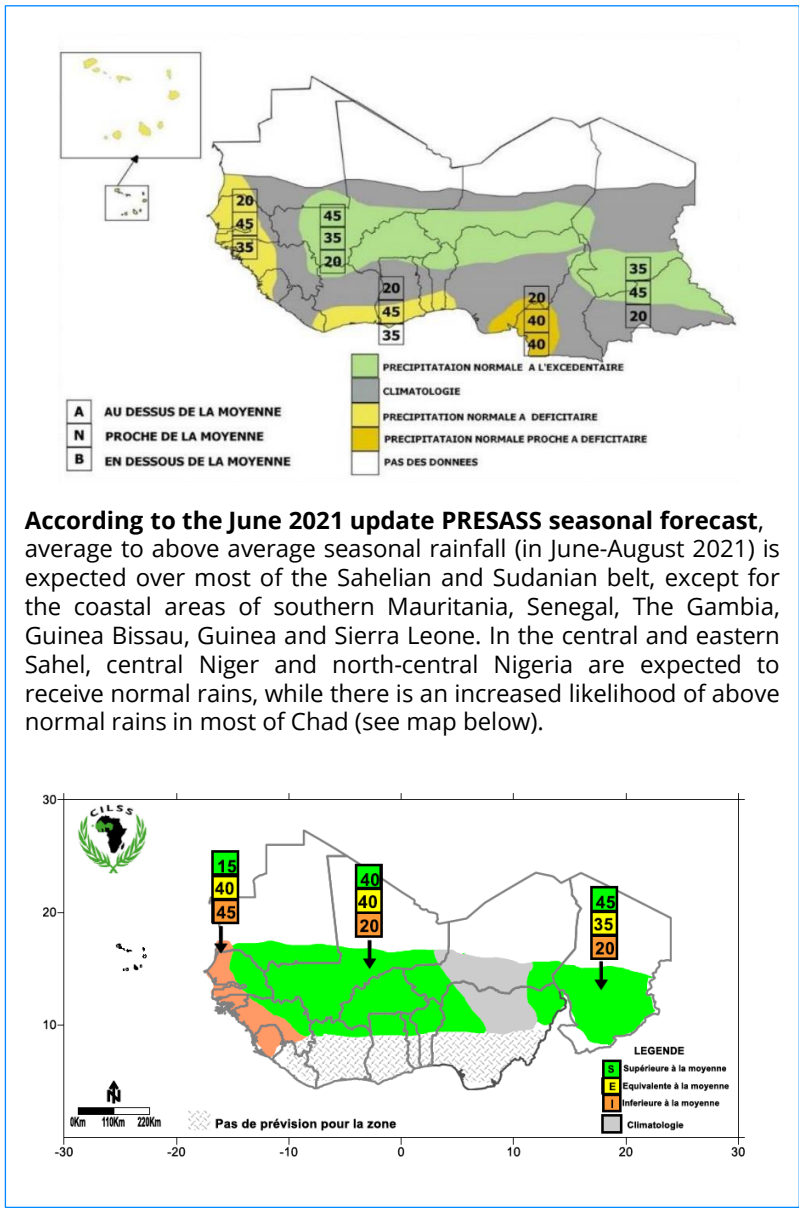
Rainfall forecast (11 July-20 August 2021): The map to the left shows the short-range CHIRPS-GEFS forecasts for the period 1-30 June 2021, expressed in percentage of long-term average.



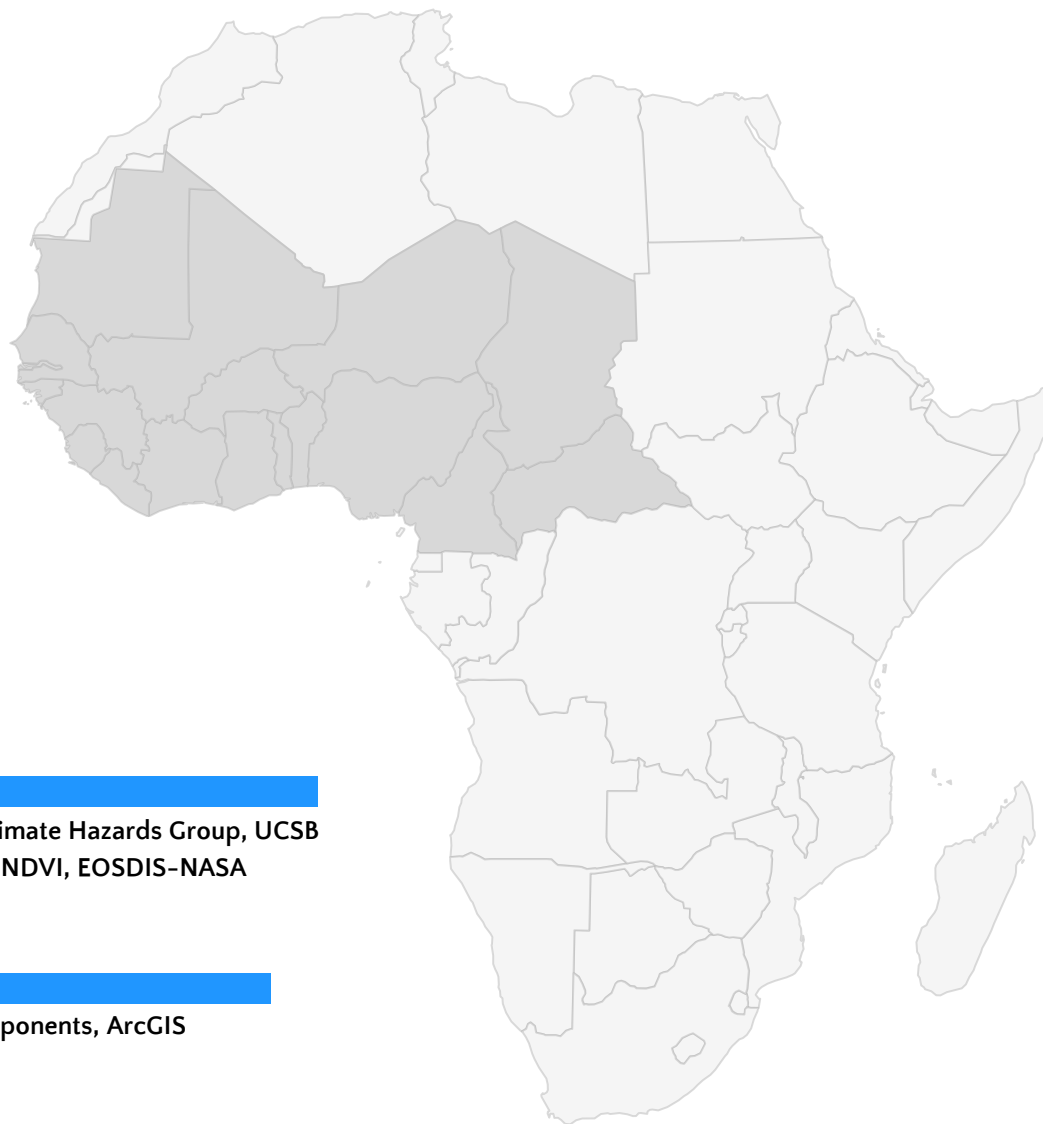
Rainfall forecast (11 - 20 August 2021): The map to the left shows the short-range CHIRPS-GEFS forecasts for the period 21-30 June 2021, expressed in percentage of long-term average.

- **Cumulative rainfall forecast:** Over the forecast period (10-20 August 2021) heavy rains (over 200 mm) are expected over western coastal area (southern Senegal, Guinea-Bissau, Guinea, Sierra Leone, Liberia). Moderate rains (100-200 mm) are expected in western Mali, Burkina Faso, northern Nigeria, central Cameroon and western CAR, as well as in parts of Sahel in southern Mauritania, eastern Senegal, central Mali, southern Niger, southern Chad and most of CAR. In the Gulf of Guinea very little rains are expected as well as light to moderate rains in the northern part of Sahel.
- **Rainfall anomaly forecast (10-20 August):** Rainfall will be average to above average in most of the region and particularly in the Sahel. Only western Senegal and the Gulf of Guinea (Cote d'Ivoire, Ghana, southern Benin, southern Nigeria and southern Cameroon) will likely experience below average rains.
- **The one-month forecast ending on 20 August** suggests that average to above average rainfall will be recorded in most of the region in August. The Sahel will likely benefit from more favourable conditions and receive above normal rains. However, coastal areas in the southern parts of West Africa (Sierra Leone, Liberia, Cote d'Ivoire, Ghana, southern Benin, southern Togo, southern Nigeria as well as southern Cameroon) will be drier than average.

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







#### 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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