

West Africa Seasonal Monitor

2021 Season



vam
food security analysis

World Food Programme, Regional Bureau Dakar

August Update, 2021

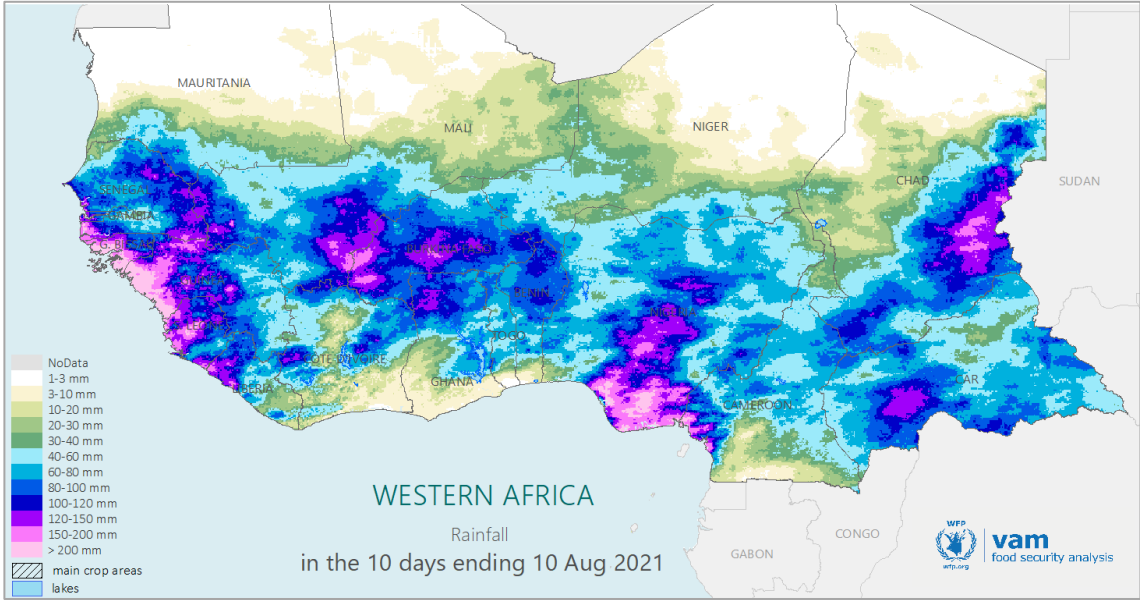
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Highlights

- **As of late August, in the core period of the rainy season,** West Africa continue to be characterised by variable conditions. Rainfall deficits persist over some areas in the western parts of the region (northern Mali and most of Mauritania) as well as in southern Guinea extending into Sierra Leone. Below average rains are also noticeable over eastern Niger, around Lac Chad, south-eastern Nigeria extending into southern Cameroon and north-eastern CAR. August provided respite and offset early season dryness in most of the Sahel. Due to much improved rainfall since mid- July, above average-to-average rainfall are now widespread in the Sahel region and most of the region except some areas in the eastern parts of the region. The Westernmost areas of the Sahel benefited from more favourable conditions. Heavy rainfall of above 200 mm has affected large areas in Senegal, western central Nigeria, southwestern Mali, the western half of Guinea, southern Chad, and western Sierra Leone raising flooding concerns
- Overall, the rainy season has so far **(between 1 May and 31 August,** been characterised by mostly average to above average conditions in the west Africa region. Rainfall deficits mainly affected northern Mauritania. Furthermore, in pockets in central Nigeria, extending south – eastern Nigeria and neighbouring region southwestern Cameroon, southern Lac Chad, south-western Guinea, north-eastern Sierra Leone and north-eastern Mali below average rainfall were recorded. *Beginning from mid-July, the rainfall situation over the region has improved resulting in a significant decline in the rainfall deficits. The seasonal cumulative rainfall from May 1st to August 31, has been above average over most of the region. However, negative impact of dryness on crop and pasture development over areas where dryness has persisted for a very long time such as northern Senegal, southern Mauritania, northern Nigeria, and Lac Chad is expected. As a result of the continued widespread wetter than average conditions across the region since mid- July, markedly above average vegetation cover extends over much of the Sahel across Mali, North-eastern Burkina Faso, Niger, Chad, Far NE Nigeria, North-western Nigeria and northern Senegal. Meanwhile it can be observed low vegetation recovery from some pockets over far western of the region (over southern Mauritania, Northern Senegal, central Mali), northern Nigeria and around Lac Chad due to early rainfall deficits.*
- **According to short-term forecasts covering the period until 20 September 2021,** average to above average rainfall will be recorded in most of the region in August. The Sahel, the mono river and Gulf of Guinea will likely benefit from more favourable conditions and receive above normal rains. However, northern and western Mauritania, Eastern Chad, south-eastern Nigeria, northern and Southern Cameroon and CAR 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.

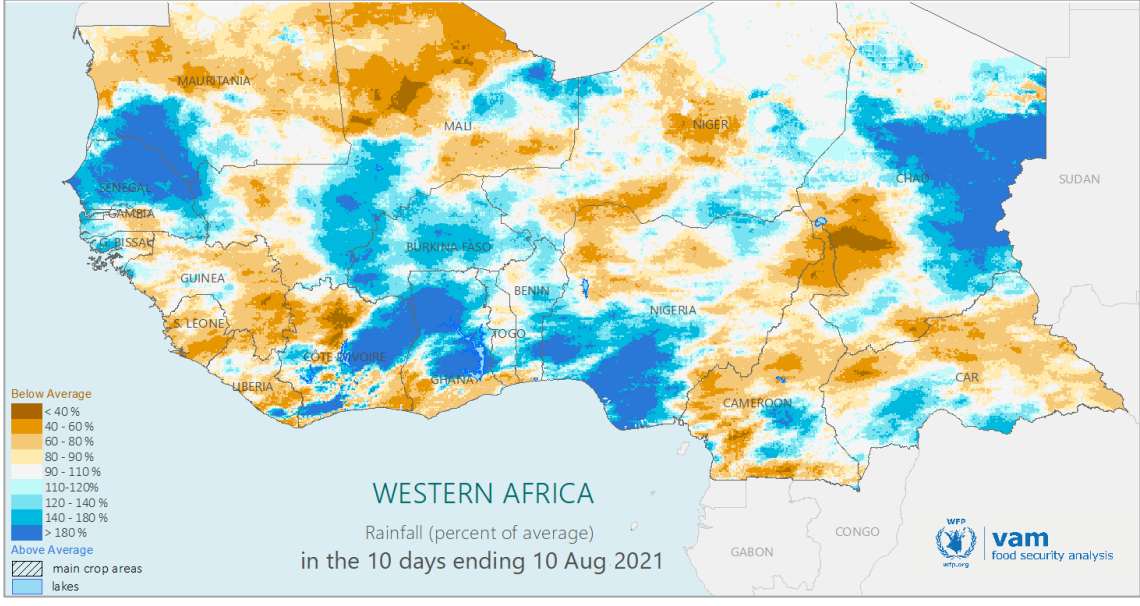
Rainfall: latest developments (1-10 August 2021)



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

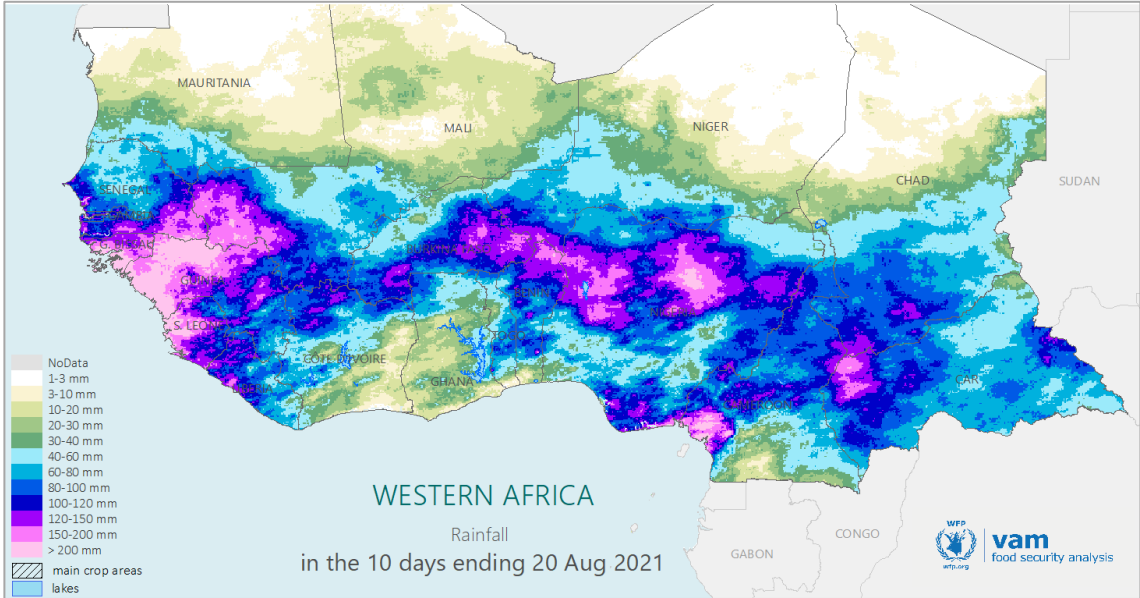
- **Cumulative rainfall:** During the first dekad of August (1-10 August), seasonal rainfall amount increased over the westernmost parts of the region. The heaviest rains were recorded over western coastal areas in Senegal, Guinea Bissau, Guinea, Sierra Leone, northern Liberia as well as western Mali, most of Burkina Faso, northern Ghana, Benin, south coastal Nigeria. far south –eastern Chad. 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 most of Mauritania. Below average rainfall was also observed in Sierra Leone, Liberia, western Guinea, north-western Cote d'Ivoire, south-western Niger, north-western Nigeria, around Lake Chad area and extending into most of Cameroon and northern and eastern CAR. The rest of region benefited from wetter than normal conditions and the westernmost parts of the region, Senegal and southern Mauritania (experienced drier than average conditions until late July) benefited from wetter conditions.



Rainfall anomaly (1-10 August 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.

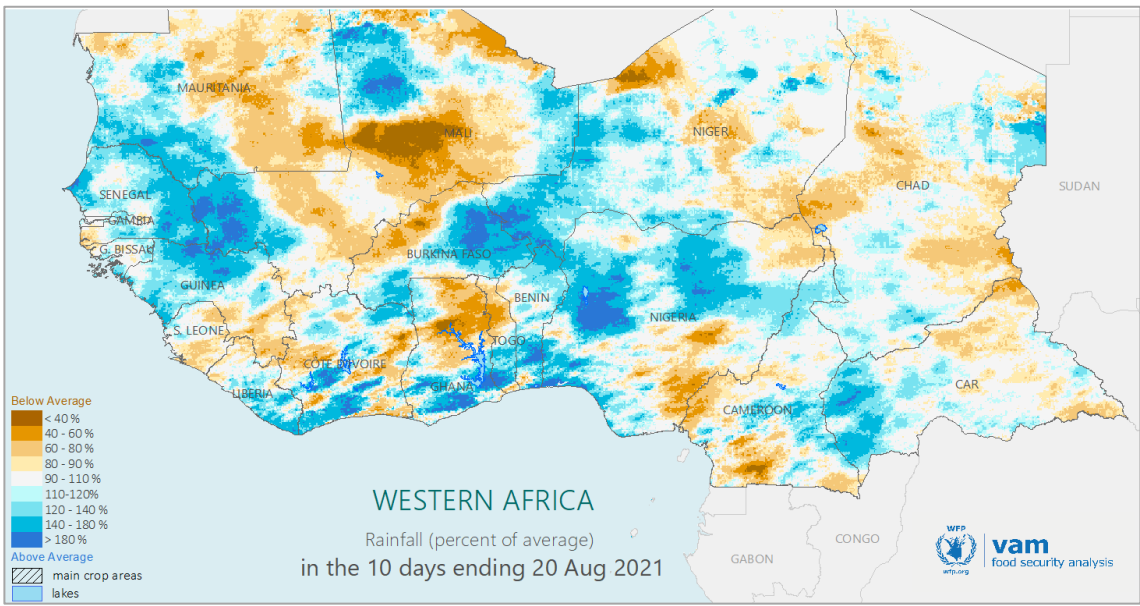
Rainfall: latest developments (11-20 August 2021)



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

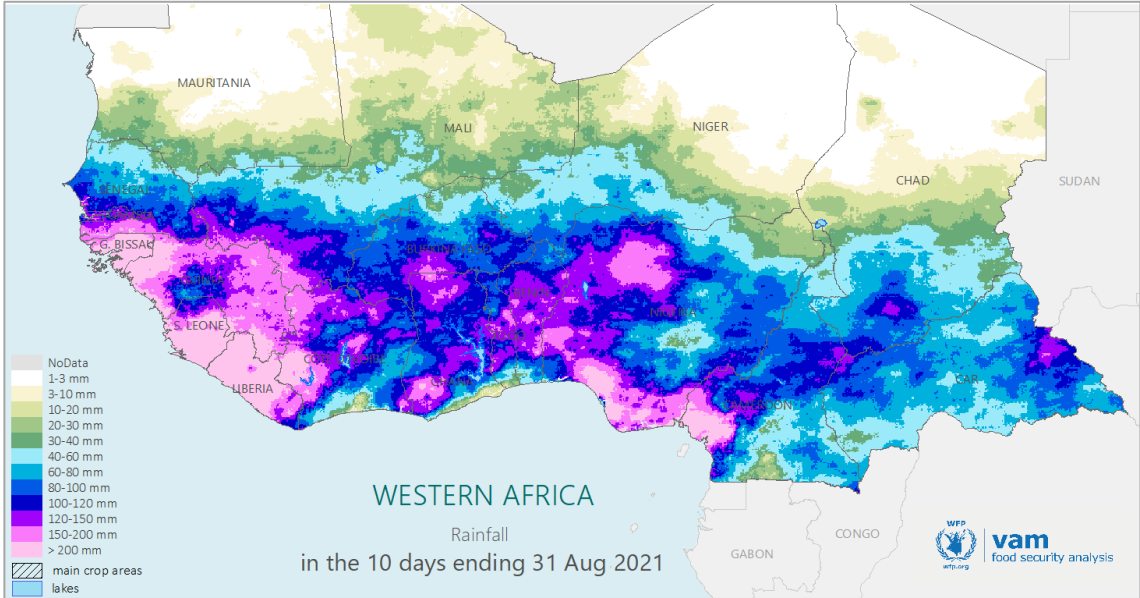
- Cumulative rainfall:** During the second dekad of the month (11-20 August), seasonal rainfall increased over most of the Sahel. Rainfall amount remain important over western costal areas in Senegal, Guinea Bissau, Guinea, Sierra Leone, Liberia as well as western Mali, most of Burkina Faso, northern Ghana. Northern Cote d'Ivoire, Benin, Nigeria, most of Cameroon, CAR and southern Chad. In the coastal areas of the Gulf of Guinea, as well as far southern Cameroon, light to moderate rains were received.

- Rainfall anomaly:** During this dekad the region remain generally characterised by average to above average conditions while deficits mainly affected central and northern Mali and eastern and northern Mauritania and around Lake Chad. Some pockets of dryness are also observed in Sierra leone, northern Liberia, central Ghana, central Togo southeastern Nigeria, far southern Cameroon, south-eastern Chad and eastern CAR. Meanwhile the westernmost parts of the region over Senegal and southern Mauritania, conditions remain well above normal.

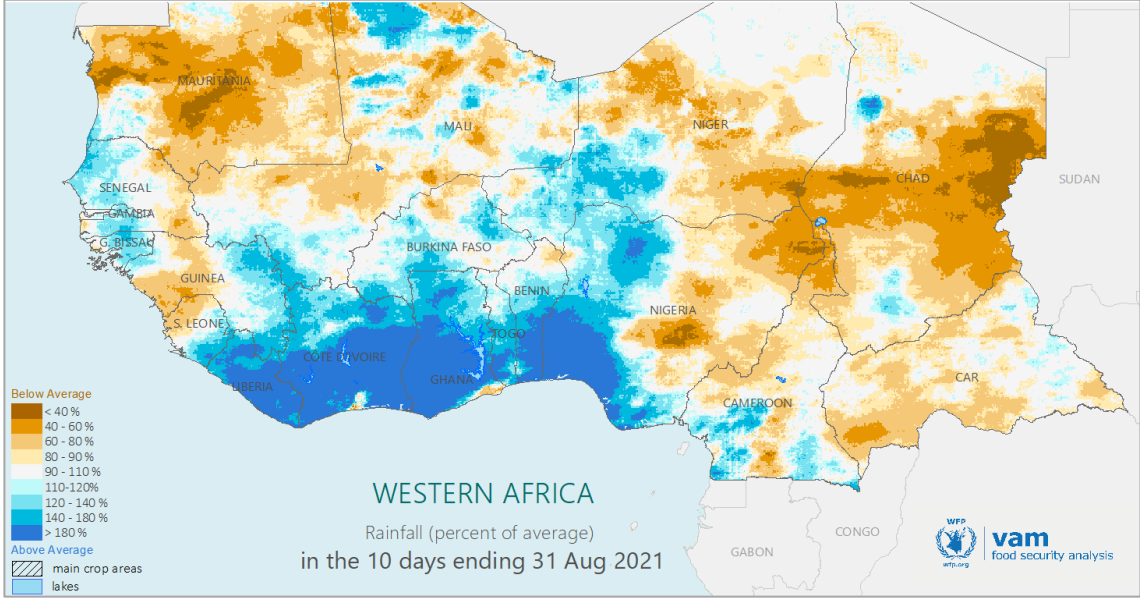


Rainfall anomaly (11-20 Aug 2021): The map to the left shows the rainfall anomaly over the last dekad in percentage of long-term average, based on CHIRPS satellite rainfall estimates.

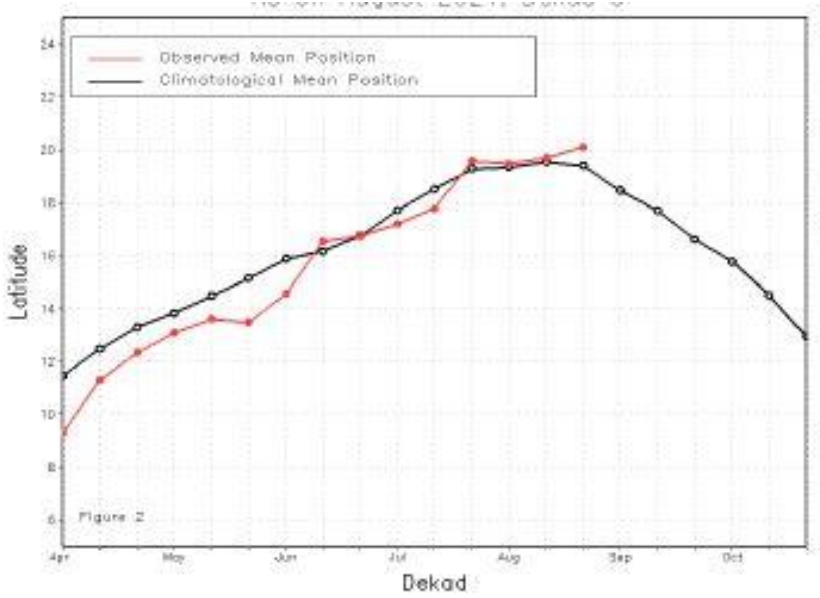
Rainfall: latest developments (21-31 August 2021)



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



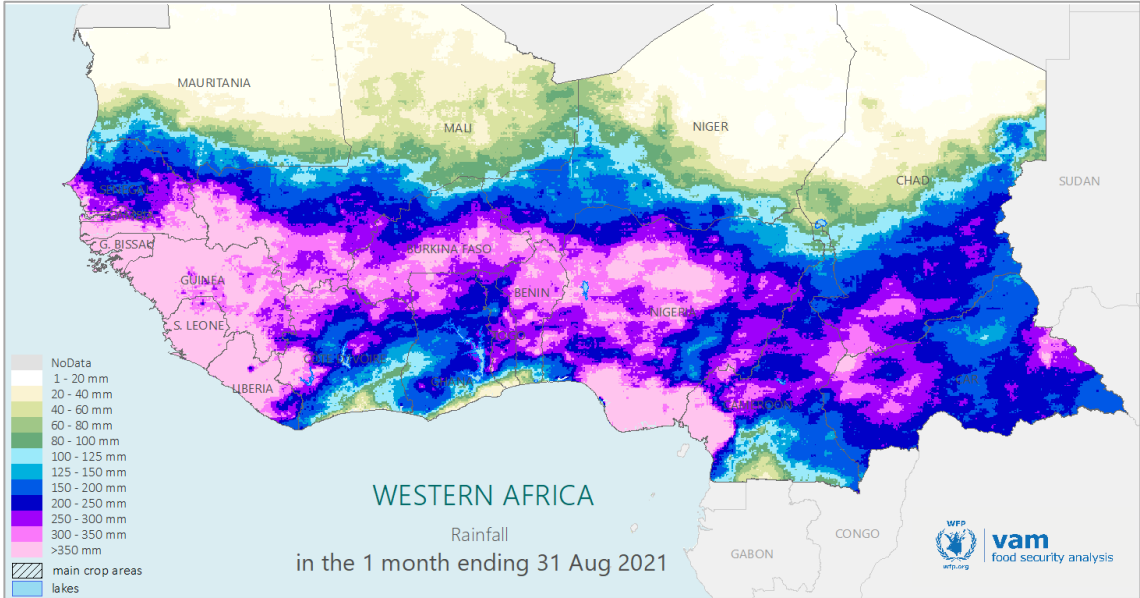
Rainfall anomaly (21-31 August 2021): The map to the left shows the rainfall anomaly over the last dekad in percentage of long-term average, based on CHIRPS satellite rainfall estimates.



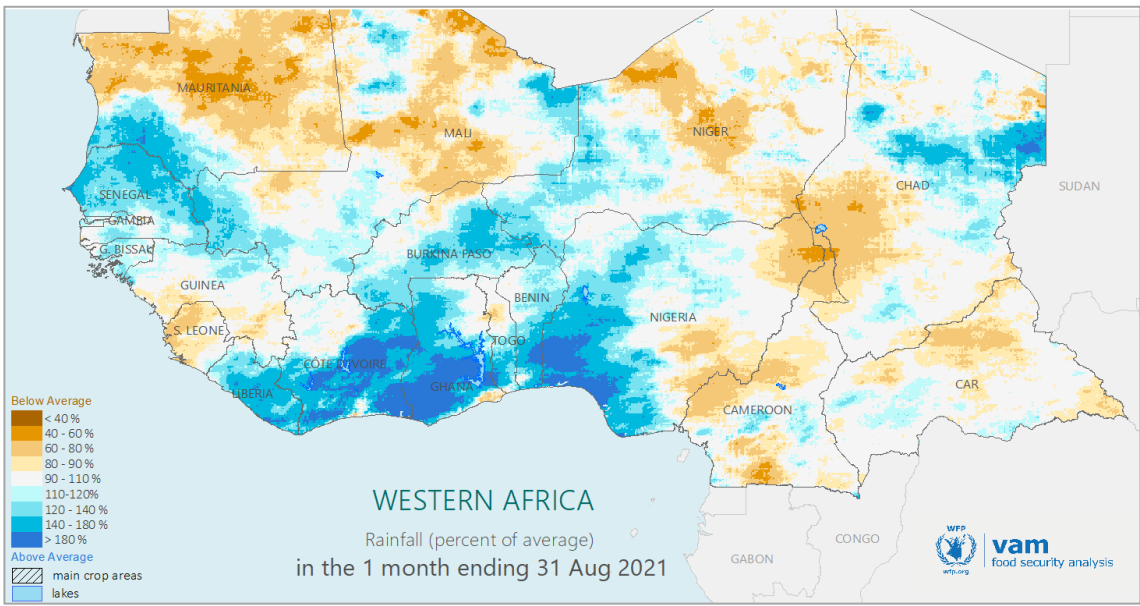
Current ITCZ position (red) vs long term average position (black) as of 31 August 2021: ITCZ: the Inter-Tropical Convergence Zone (ITCZ) is the border between dry areas and areas where the rainfall season is ongoing. It moves northwards as the monsoon advances, backtracking southwards as the monsoon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

- Cumulative rainfall:** During the last dekad of August, the seasonal rainfall increased in the Sahel. Moderate to heavy rains were received in Senegal, Mali, Burkina Faso and western Niger. However Eastern Niger, NE Nigeria and Chad Sahelian Belt received light rains. The rest of the region in the southern parts were received very important seasonal rainfall.
- Rainfall anomaly:** Rainfall remained below average over two broad distinct regions: in the eastern areas of the region including eastern Niger, eastern Nigeria, Cameroon, CAR and Chad and the western areas of the region including central Mali extending into most of Mauritania recorded drier than normal conditions. During this period eastern Mano river (southern Sierra Leone and Liberia) and the Gulf of Guinea benefited from more favourable conditions with well above average seasonal rainfall.
- ITCZ:** The ITCZ in the western parts of the region moved further north and is now located around the 20.1N, north of the long-term average. This explains the seasonal rainfall increase with 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 and is now located south of its average position which may explain the unfavourable rainfall conditions over Cameroon, CAR and around of Lac Chad region.

Rainfall: the last month (1-31 August 2021)



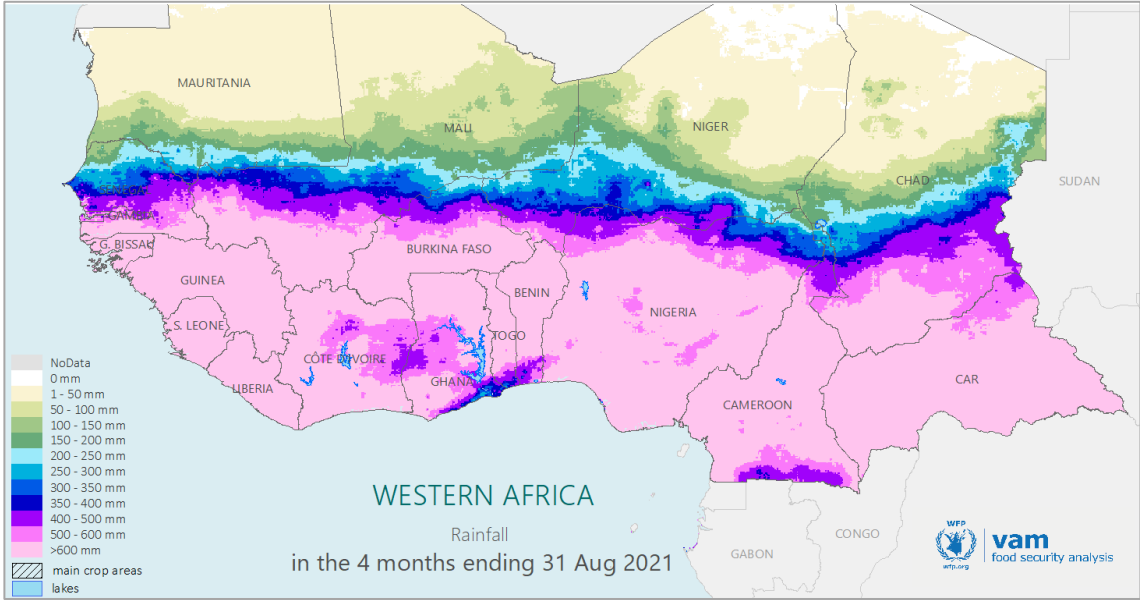
Cumulative rainfall (1-31 August 2021) : The map to the left shows the total rainfall received over the last dekad, based on CHIRPS satellite rainfall estimates.



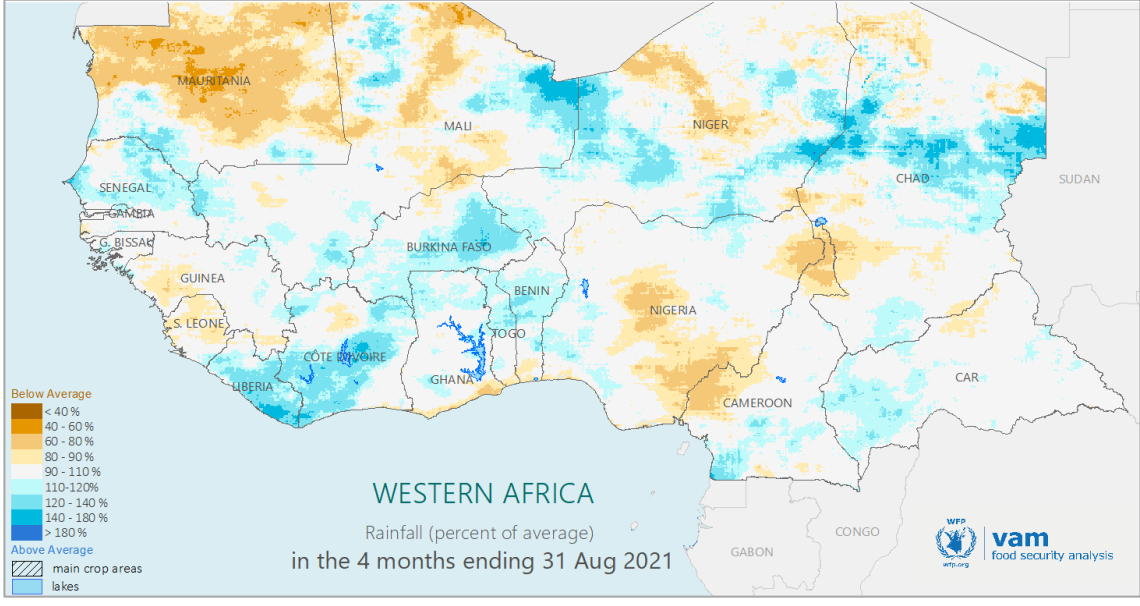
Rainfall anomaly (1-31 August 2021) : The map to the left shows the rainfall anomaly over the last dekad in percentage of long-term average, based on CHIRPS satellite rainfall estimates.

- Cumulative rainfall:** In August, well rainfall distribution was observed throughout the region, except for little areas in southern Cameroon and Gulf of Guinea, which only recorded very light rainfall during the month. Significant rainfall was received throughout the region even the Sahel region (over 250 mm). Only far northern parts of sahelian belt and far southern coastal of Cameroon, southern Cote d'Ivoire, southern Ghana, Benin and Togo received light to moderate seasonal rainfall (up to 100mm).
- Rainfall anomaly:** As of late August, in the core period of the rainy season, West Africa continue to be characterised by variable conditions. Rainfall deficits persist over some areas in the western parts of the region (northern Mali and most of Mauritania) as well as in southern Guinea extending into Sierra Leone. Below average rains are also noticeable over eastern Niger, around Lac Chad, south-eastern Nigeria extending into southern Cameroon and north-eastern CAR. The Westernmost areas of the Sahel benefited from more favourable conditions with above average rainfall over Senegal, Gambia, southern Mauritania, Guinea Bissau and far western Mali.
- Summary:** August provided respite and offset early season dryness in most of the Sahel. Due to much improved rainfall since mid- July, above average-to-average rainfall are now widespread in the Sahel region and most of the region except some areas in the eastern parts of the region. In these areas, due to recent bad seasonal rainfall distribution, rainfall deficits persist around Lac Chad, south-eastern Nigeria extending into southern Cameroon and north-eastern CAR while heavy rainfall of above 200 mm has affected large areas in Senegal, western central Nigeria, southwestern Mali, the western half of Guinea, southern Chad, and western Sierra Leone raising flooding concerns.

Rainfall: the season so far (1 May – 31 August 2021)



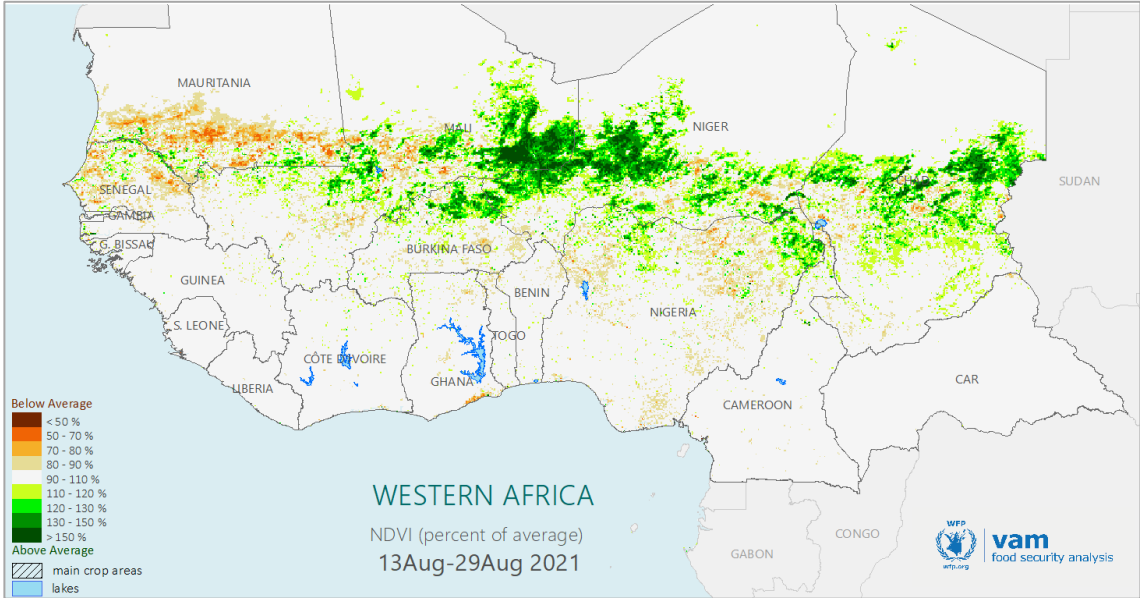
Cumulative rainfall (1 May – 31 August 2021) : The map to the left shows the total rainfall received over the last two months, based on CHIRPS satellite rainfall estimates.



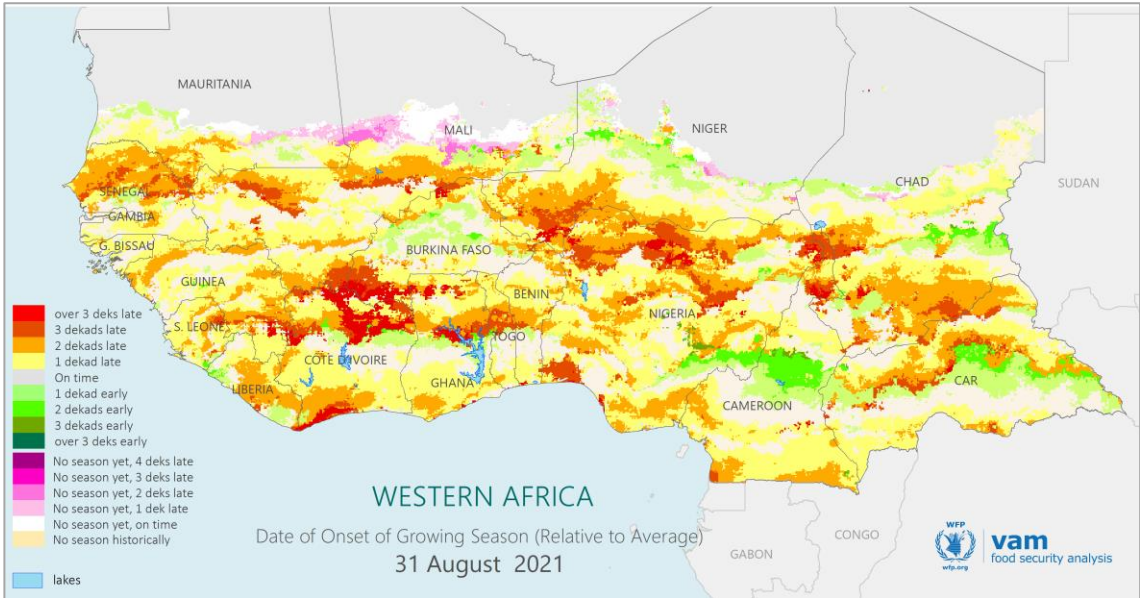
Rainfall anomaly (1 May – 31 August 2021) : The map to the left shows the rainfall anomaly over the last two months in percentage of long-term average, based on CHIRPS satellite rainfall estimates.

- Cumulative rainfall:** By the end of August, the region has reached the core period of the rainy season. Over the past four months (1 May – 31 August), heavy rains (above 500 mm) have been recorded over most of the region reaching the southern parts of the Sahel in half southern Senegal, Gambia, Guinea Bissau, Guinea, Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon, CAR, Southern Chad, most Burkina Faso, Far western Niger, Western Mali. Meanwhile, moderate seasonal rainfall (up to 150mm) was received in the northern parts of the Sahelian belt. Only northern Mauritania experienced very little rain.
- Rainfall anomaly:** Overall, the rainy season has so far been characterised by mostly average to above average conditions in the West Africa region. Rainfall deficits mainly affected northern Mauritania. Furthermore, in pockets in central Nigeria, extending south – eastern Nigeria and neighbouring region southwestern Cameroon, southern Lac Chad, south-western Guinea, north-eastern Sierra Leone and north-eastern Mali below average rainfall were recorded.
- Summary:** So far, the region entering in the *core period of its rainy season*, West Africa has been characterised by most adequate and well rainfall distribution. Beginning from mid-July, the rainfall situation over the region has improved resulting in a significant decline in the rainfall deficits. The seasonal cumulative rainfall from May 1st to August 31st, has been above average over most of the region. However, negative impact of dryness on crop and pasture development over areas where dryness has persisted for a very long time such as northern Senegal, southern Mauritania, northern Nigeria, and Lac Chad is expected.

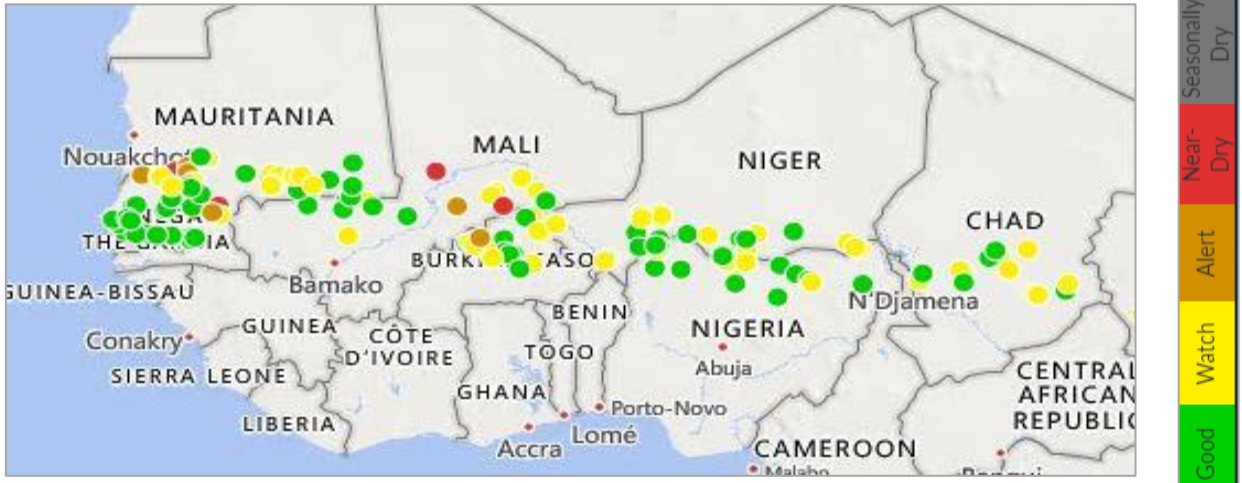
Vegetation: current conditions (as of 31 August 2021)



NDVI (August 123- August 29 2021): the map on the left shows the vegetation anomaly as a percentage of the average, based on the MODIS NDVI



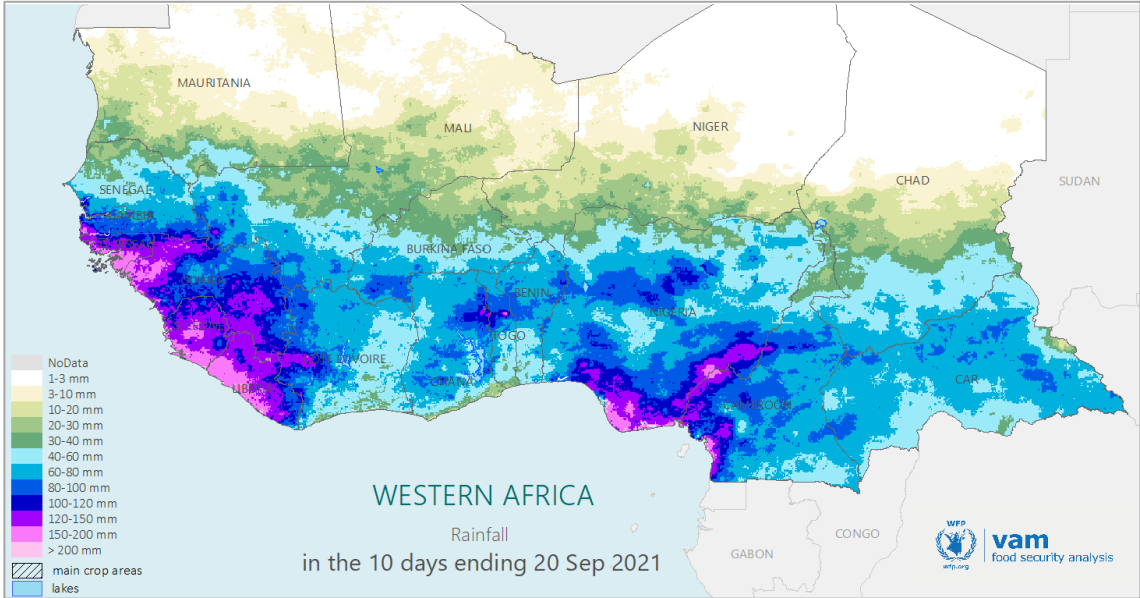
2021 Onset of growing season anomaly (as of August 31, 2021): The map on the left shows the start of the growing season anomaly, using the vegetation phenological cycle to show the possible start of sowing activities.



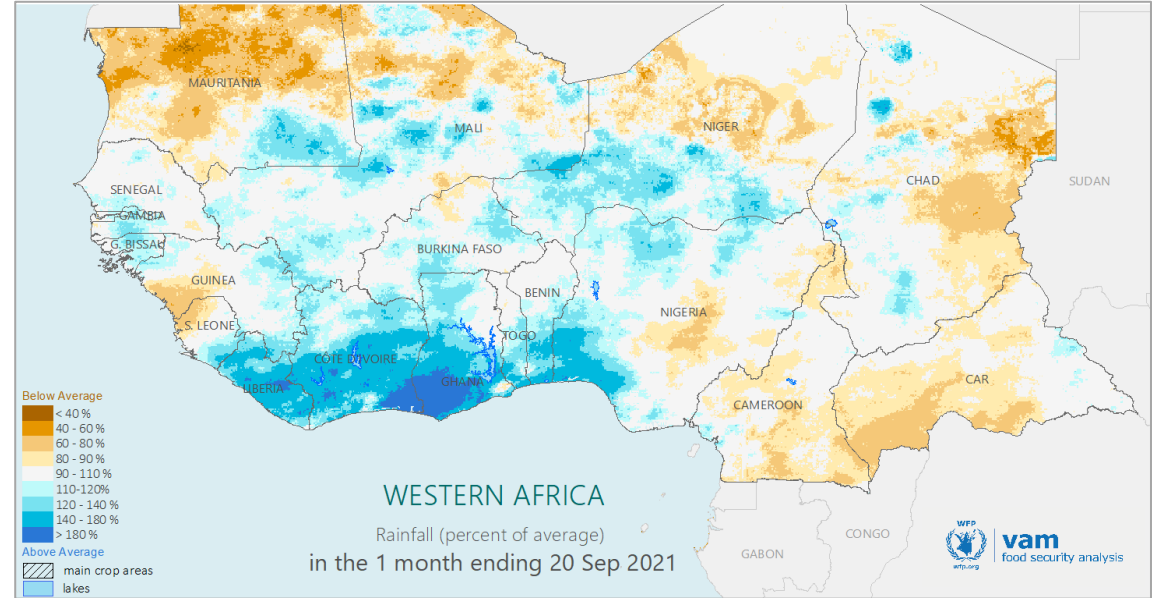
Water point status (as of 31 August 2021): Good: Higher than long term level (LTL), Watch: Between 50 to 100% of LTL, Alert: Between 3% and 50% of LTL, Near-Dry: Below 3% of LTL (<https://earlywarning.usgs.gov/fews/waterpoint/index.php>)

- Start of season:** The growing season onset map suggests that the 2021 most of west Africa region remain characterised by a growing 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, southern Mauritania, eastern Chad and Northern Niger. Until the end of August, delays of up to 4 weeks and over, as a result of poor rains in the earlier months of the season, maintained until now in south-eastern and central north Mali. The pink areas indication that the conditions for the potential start of planting activities have not yet been met over these areas.
- Vegetation:** As a result of the continued widespread wetter than average conditions across the region since mid- July, markedly above average vegetation cover extends over much of the Sahel across Mali, North-eastern Burkina Faso, Niger, Chad, Far NE Nigeria, North-western Nigeria and northern Senegal. . Meanwhile it can be observed low vegetation recovery from some pockets over far western of the region (over southern Mauritania, Northern Senegal, central Mali), northern Nigeria and around Lac Chad due to early rainfall deficits.
- Water resources:** The availability of water resources in the region is generally favourable. In the westernmost part of the Sahel (northern and western Senegal and southern Mauritania) where situation was deteriorating, water resources recovered during August due to rainfall improvement since mid-July.

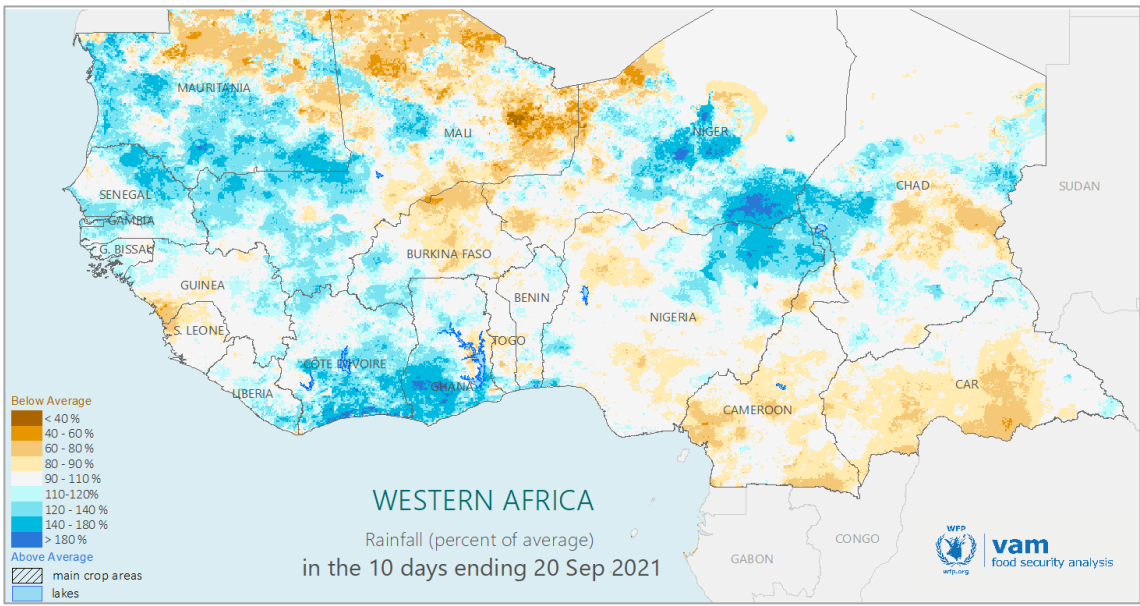
Rainfall: short-term forecasts (10-20 September 2021)



Rainfall forecast (11 - 20 September 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.



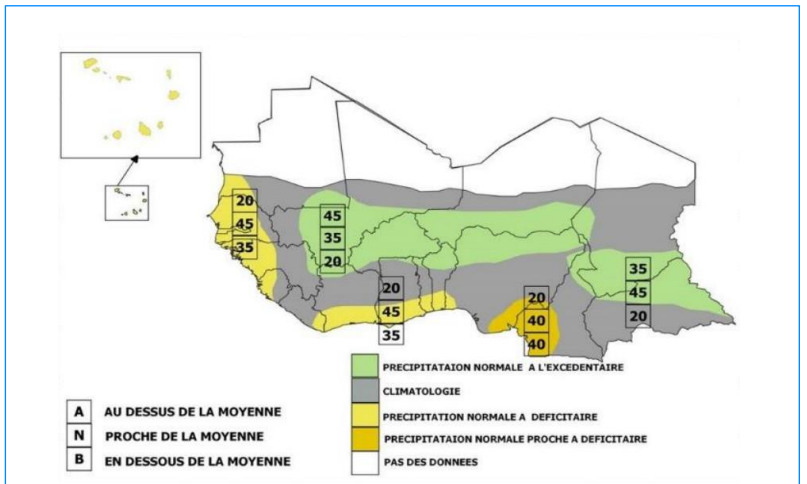
Rainfall forecast (11 July-20 September 2021): The map to the left shows the short-range CHIRPS-GEFS forecasts for the period 1-30 June 2021, expressed in percentage of long-term average.



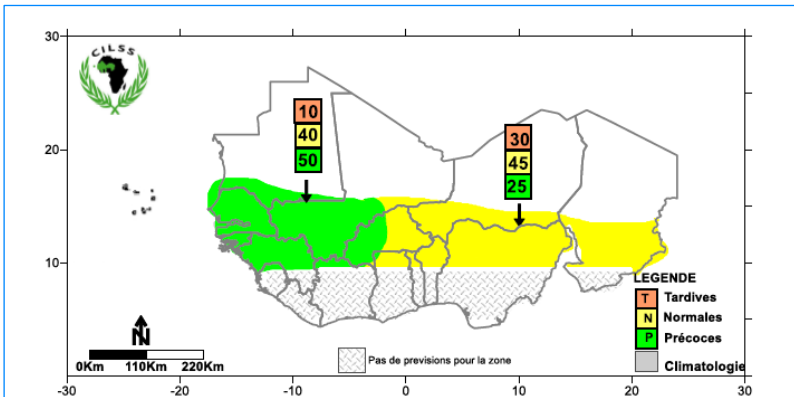
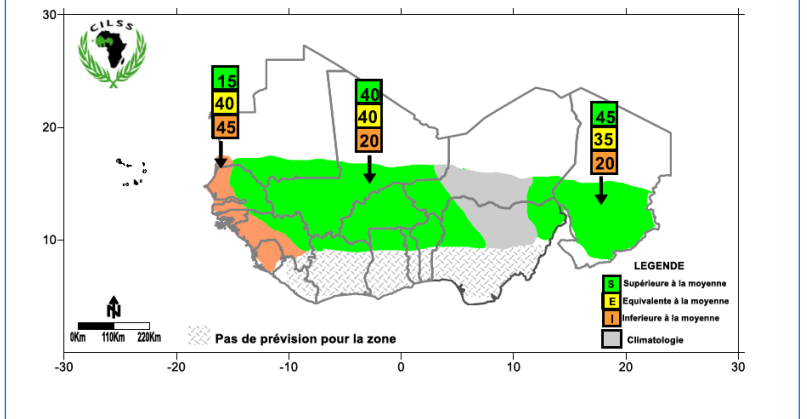
Rainfall forecast (11 - 20 September 2021): The map to the left shows the short-range CHIRPS-GEFS forecasts for the period 21-30 June 2021, expressed in percentage of long-term average.

- **Cumulative rainfall forecast:** Over the forecast period (10-20 September 2021) heavy rains (over 200 mm) are expected over western coastal area (south-western Senegal, Guinea Bissau, Guinea, Sierra Leone, Liberia) as well as far southern Nigeria and far south-western Cameroon.. Moderate rains (100-200 mm) are expected in western Mali, southern Senegal, Burkina Faso, northern Nigeria, central Cameroon and western CAR. In northern Sahel very little rains are expected as well as light to moderate rains in the rest of the region.
- **Rainfall anomaly forecast (10-20 September):** Rainfall will be average to above average in most of the region and particularly in the Sahel. Only central Sahel extending into north-western Nigeria, most of Cameroon, CAR and central eastern Chad will likely experience below average rains
- **The one-month forecast ending on 20 September** suggests that average to above average rainfall will be recorded in most of the region in August. The Sahel, the mono river and Gulf of Guinea will likely benefit from more favourable conditions and receive above normal rains. However, northern and western Mauritania, Eastern Chad, south-eastern Nigeria, northern and Southern Cameroon and CAR will be drier than average.

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

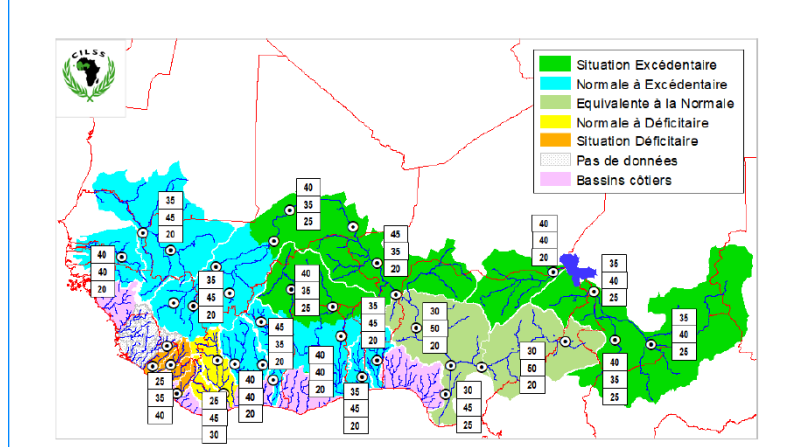
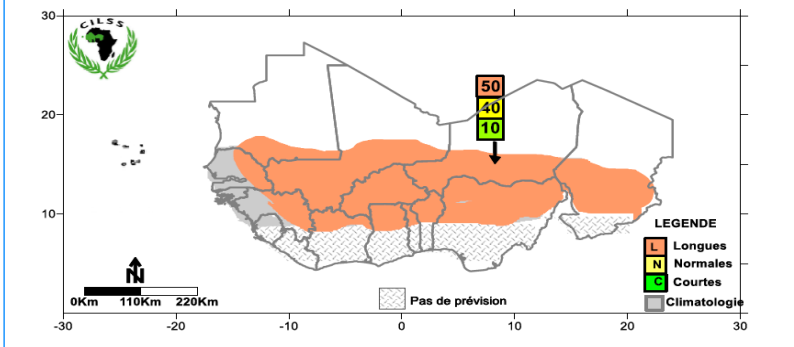


According to the June 2021 update PRESASS seasonal forecast, average to above average seasonal rainfall (in June-August 2021) is expected over most of the Sahelian and Sudanian belt, except for the coastal areas of southern Mauritania, Senegal, The Gambia, Guinea Bissau, Guinea and Sierra Leone. In the central and eastern Sahel, central Niger and north-central Nigeria are expected to receive normal rains, while there is an increased likelihood of above normal rains in most of Chad (see map below).



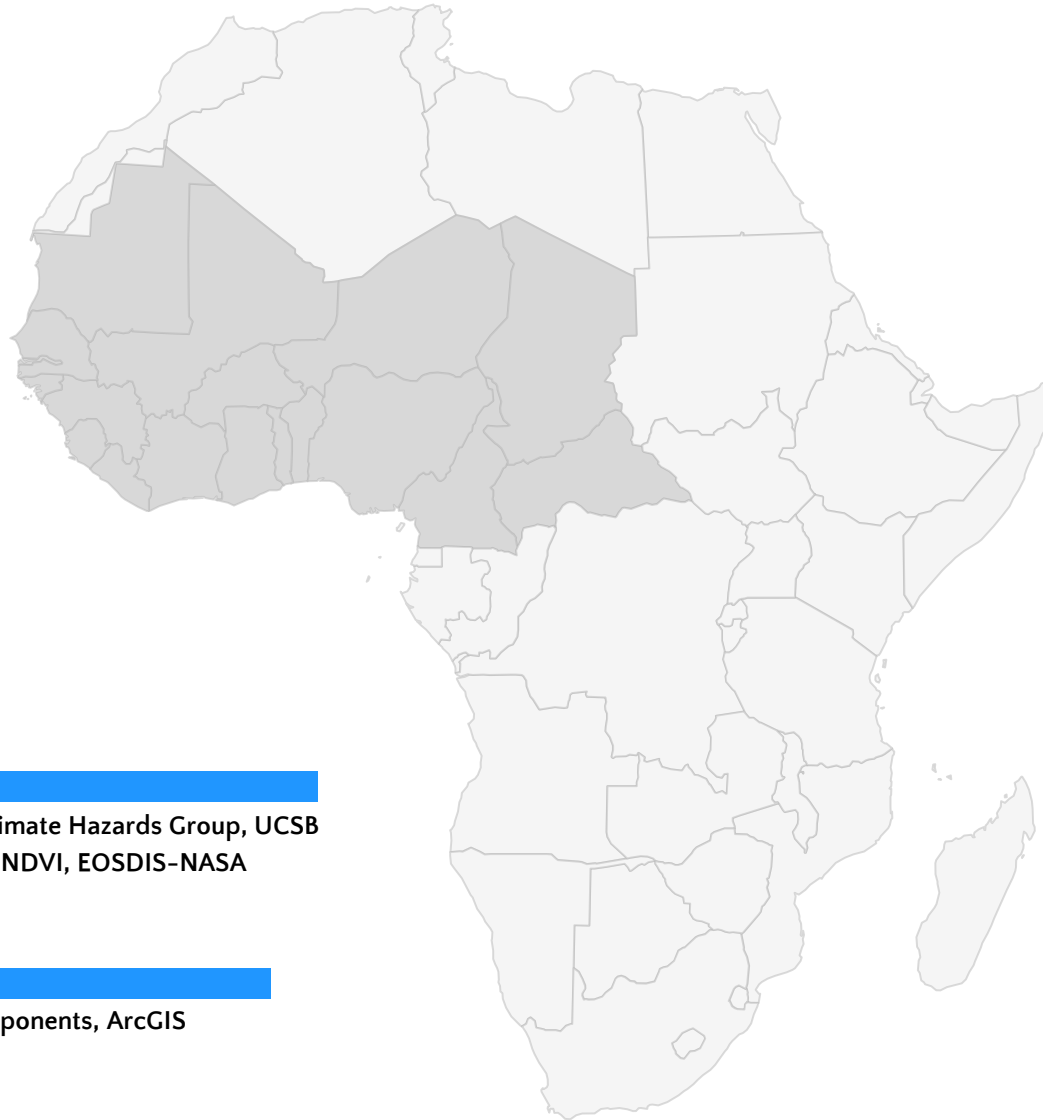
An early to normal onset of seasonal rains is expected (see map above) in the western parts of the region (Mauritania, Senegal, Guinea Bissau, Guinea, western Mali and western Burkina Faso), and normal to late in the eastern sector (eastern Burkina Faso, Niger, northern Nigeria and Chad).

At the beginning of the season long to medium dry spells are expected throughout most of the region, except for the coastal areas of Senegal, The Gambia, Guinea Bissau and Guinea., There is no clear spatial pattern in terms of dry spells at the end of the season, except for the border areas between Mali, Burkina Faso, Niger and Nigeria, where short to normal dry spells are projected, as well as north-eastern Ghana, northern Togo, northern Benin and over a fringe of the far western Nigeria, where dry spells could be long to normal.



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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