

Highlights

- * By the end of June, the early stages of the rainfall season are coming to an end. So far, the 2022 rainy season in West Africa has been characterised by variable conditions. Over the course of the month, rainfall deficits were particularly pronounced during the first dekad of June and mainly affected the Central Sahel (western Niger, north-eastern Burkina Faso, eastern Mali), central Mali, eastern Guinea, western Cote d'Ivoire, south-western Cameroon and the Lake Chad Basin. Over the course of the month of June rainfall improved and offset some of the early season deficits recorded in the westernmost parts of West Africa (Senegal, southern Mauritania, Guinea-Bissau), as well as in central Burkina Faso, central Chad and central Niger. Coastal countries including Benin, Togo, Ghana, parts of Nigeria and southern Cameroon, as well as the south-eastern parts of the region (southern Chad and CAR) benefitted from favourable rainfall conditions in June.
- ❖ Over the past two (2) months (May-June 2022), the conditions reflect the patterns observed in June, with overall mixed conditions across the region. While some areas including the western (Senegal, southern Mauritania, Guinea-Bissau), southern (Ghana, Benin, Togo) and south-eastern (southern Chad, CAR, southern Cameroon) parts of the region experienced above normal rainfall, the seasonal rains were normal to below normal in the rest of West Africa. Particularly in the Central Sahel, the Lake Chad Basin, north-western Nigeria and western Cote d'Ivoire, moderate to severe rainfall deficits were recorded during this period. While especially in the Sahelian areas these are unlikely to significantly impact the agricultural season, which usually starts a bit later, the progression of the rains in these areas will need to be monitored closely.
- ❖ **Vegetation conditions** are below average over a wide area in the Sahel from western Mali across Burkina Faso and northern Nigeria to southern Chad. Vegetation deficits are particularly pronounced in the eastern parts of the region (in northern (Benin, Togo and Nigeria) and southern Chad). In some areas, these conditions are expected to improve due to above normal rains received in mid to late June. On the other hand, better than normal vegetation conditions can be observed in Senegal, northern Niger and Chad, where above normal rainfall was received in early June.
- ❖ The short-term forecasts indicate that by early-July (10 July 2022), seasonal rainfall will likely be above average in the western part of the region (in Senegal, southern Mauritania, Guinea Bissau) as well as over western Guinea, Sierra Leone, western Liberia as well as south-eastern Cameroon and CAR. This might partially offset the rainfall deficits in the western parts of the Sahel (Senegal, southern Mauritania, and Guinea Bissau) and the lead to more favorable conditions during the early stages of the growing season.
- ❖ According to the 2022 PRESASS seasonal forecast, average to above average seasonal rainfall is expected in most of the Sahelian Belt (from Senegal through to Chad), including Cabo Verde. Average to below average rainfall is expected in south-eastern Nigeria and south-western Cameroon. The seasonal forecast also suggests that the start of the season will be early to normal, with shorter than normal dry spells during the first half of the rainy season across the Sahelo-Sudanian zone.



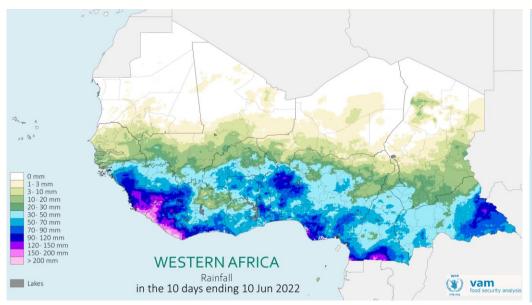
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Note: this document is the monthly update of the Seasonal Monitor for West Africa. The Seasonal Monitor will be updated in full every month during the 2022 rainy season (May-October).

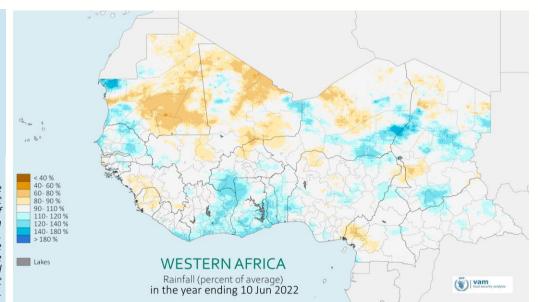
SECTION 1: DEKADAL TRENDS

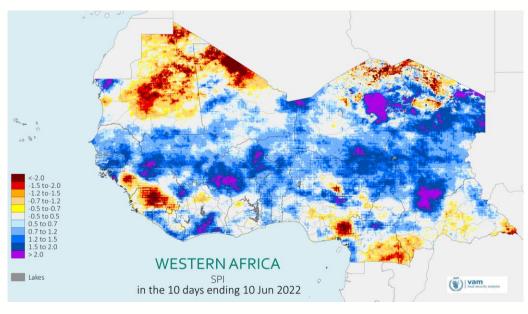
Rainfall patterns: 1-10 June 2022



The map to the left shows the total rainfall received over the first dekad (10 days), based on CHIRPS satellite rainfall estimates. Areas highlighted in light green have received little rainfall, while areas in dark blue or pink have received moderate to intense rains.

The map to the right shows the rainfall anomaly over the first dekad, expressed in percentage of the long-term average, based on CHIRPS satellite rainfall estimates. Areas in light to dark brown have received below average rains, while areas in dark blue have experienced above normal rainfall over the past 10 days.

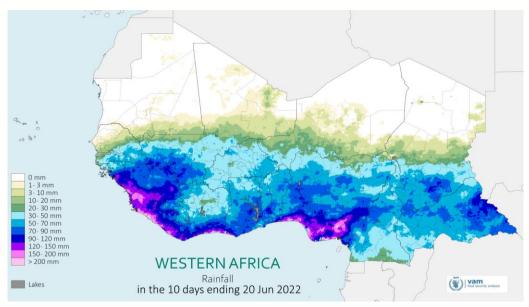




The map to the left shows the Standard Precipitation Index (SPI) for the first dekad, based on CHIRPS satellite rainfall estimates. This simultaneously shows the experience of wet conditions on one or more time scales, and dry conditions on other time scales. Blues - dark purple for wetter conditions, Yellow - Browns for drier conditions.

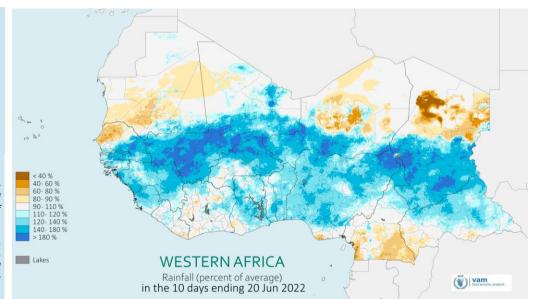
- Cumulative rainfall: During the first dekad of June (1-10 June), seasonal rainfall remained localised in the southern parts of West Africa. Heavier rains (of up to 200 mm) were recorded in Liberia, Sierra Leone, south-western Guinea, southern Cameroon, south-eastern and western Nigeria and eastern CAR. Meanwhile, in the southern coastal areas, light to moderate rainfall was recorded over CAR, Cameroon, Nigeria, Togo, Benin, Ghana, Cote d'Ivoire, Guinea, southern Guinea-Bissau and southern Burkina. In the Sahel seasonal rainfall remained low (below 30 mm).
- Rainfall anomaly: During the first dekad of June, seasonal rains were average to slightly above average in most parts of the region. Sierra Leone and western Guinea, as well as parts of south-western Cameroon, the Central Sahel and the Lake Chad Basin recorded slightly below average rainfall. On the other hand, the rains received in Senegal, as well as in the Gulf of Guinea were above normal.
- Standard Precipitation Index (SPI): During the first dekad of June, the SPI suggests that the West Africa region remained characterised by a positive signal. During the dekad, dry conditions remained localised over parts of Sierra Leone and western Guinea, the border areas between Nigeria and Cameroon, south-eastern Cameroon and parts of CAR. It is important to note that the SPI is more accurate for areas where the season has progressed further and/or which experience higher overall rainfall amounts. For further information on the SPI, see this factsheet.

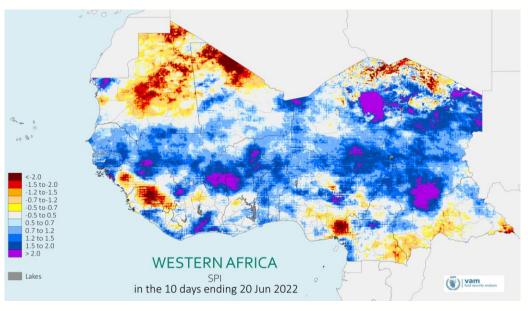
Rainfall patterns: 11-20 June 2022



The map to the left shows the total rainfall received over the second dekad (10 days), based on CHIRPS satellite rainfall estimates. Areas highlighted in light green have received little rainfall, while areas in dark blue or pink have received moderate to intense rains.

The map to the right shows the rainfall anomaly over the second dekad, expressed in percentage of the long-term average, based on CHIRPS satellite rainfall estimates. Areas in light to dark brown have received below average rains, while areas in dark blue have experienced above normal rainfall over the past 10 days.

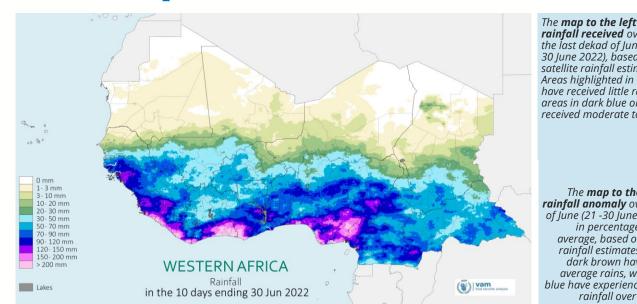




The **map to the left** shows the **Standard Precipitation Index (SPI)** for the second dekad, based on CHIRPS satellite rainfall estimates. This simultaneously shows the experience of wet conditions on one or more time scales, and dry conditions on other time scales. Blues - dark purple for wetter conditions, Yellow - Browns for drier conditions.

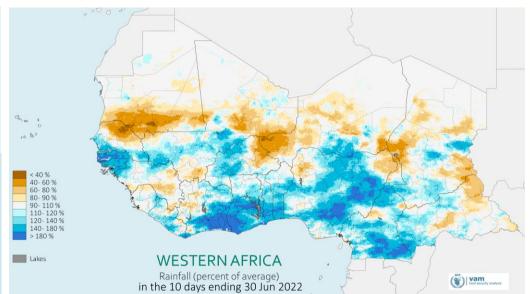
- <u>Cumulative rainfall</u>: During the second dekad of June (11-20 May), seasonal rainfall moved further north, reaching the Sahel. The southern Sahel experienced light to moderate rains (up to 50 mm). In the southern coastal areas of the region, heavier rains were received (90-200 mm), particularly in Guinea, Liberia, Sierra Leone, southern Cote d'Ivoire, southern Nigeria and eastern CAR. Elsewhere, rainfall remained light to moderate.
- <u>Rainfall anomaly</u>: Compared to the long-term average, rainfall was above normal throughout most of the region, except for some coastal areas of southern Liberia and Cote d'Ivoire, northern Senegal, Mauritania and southern Cameroon. Well above normal rains were received in Mali, northern Burkina Faso, central Niger and the Lake Chad Basin.
- Standard Precipitation Index (SPI): During the second dekad of June, the SPI indicates wetter than normal conditions throughout most of the region, except for western Guinea, Sierra Leone, the border areas between Nigeria and Cameroon, as well as southern Cameroon and CAR. It is important to note that the SPI is more accurate for areas where the season has progressed further and/or which experience higher overall rainfall amounts. For further information on the SPI, see this factsheet.

Rainfall patterns: The last dekad (21-30 June 2022)



The map to the left shows the total rainfall received over the last dekad of June (21-30 June 2022), based on CHIRPS satellite rainfall estimates. Areas highlighted in light green have received little rainfall, while areas in dark blue or pink have received moderate to intense rains.

The **map to the right** shows the rainfall anomaly over the last dekad of June (21 -30 June 2022), expressed *in percentage of the long-term* average, based on CHIRPS satellite rainfall estimates. Areas in light to dark brown have received below average rains, while areas in dark blue have experienced above normal rainfall over the past 10 days.



- Cumulative rainfall: During the last dekad of the month (21-30 June), the seasonal rainfall continued to move northwards, reaching parts of the northern Sahel while rainfall increased further over the southern parts of the region.
- Significant rainfall (90-200 mm) were received in most coastal areas from Guinea-Bissau to Cameroon. Inland areas of Guinea, Cote d'Ivoire, Ghana, Nigeria as well as Cameroon

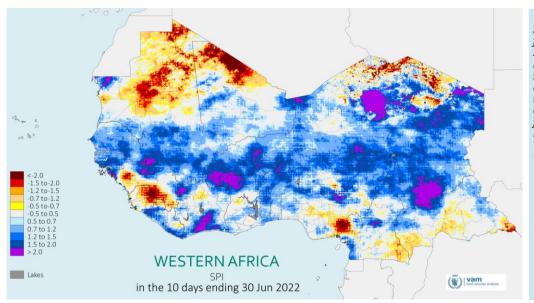
and CAR recorded moderate rainfall (50-90

- Rainfall anomaly: Overall, the rains recorded in the last dekad of June were above average throughout most of the region, with the exception of northern Senegal and Mauritania, the Central Sahel, and the Lake Chad Basin.
- · Below average rainfall was also recorded in parts of eastern Guinea, north-western Nigeria, as well as in CAR. Rainfall received in

southern Senegal, south-eastern Cote d'Ivoire, eastern Ghana, as well as in parts of eastern Nigeria and southern Cameroon was well above normal (>180% of average) during this period.

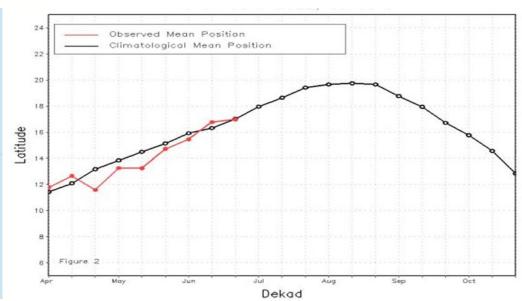


Rainfall patterns: The last dekad (21-30 June 2022)



The map to the left shows the Standard Precipitation Index (SPI) for the last dekad of June (21-30 June 2022), based on CHIRPS satellite rainfall estimates. This simultaneously shows the experience of wet conditions on one or more time scales, and dry conditions on other time scales. Blues - dark purple for wetter conditions, Yellow – Browns for drier conditions.

The graph to the right shows the current ITCZ position (red) compared to the long-term average (black). The ITCZ is the border between dry areas and areas where the rainy season is ongoing. Delays in the ITCZ progression lead to drier than normal conditions, while an above average ITCZ position is associated with above normal rains.



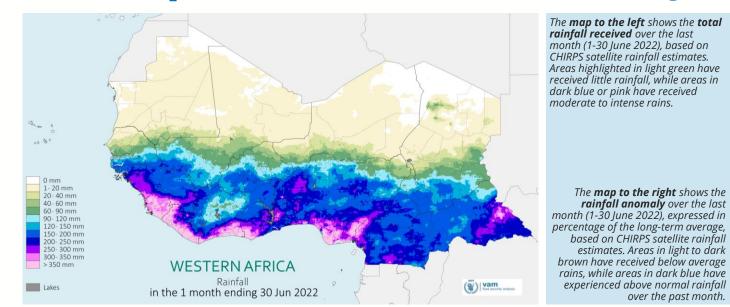
- Standard Precipitation Index (SPI): The SPI suggests that conditions were wetter than normal throughout the region during the last dekad of June (21-30 June), except for some parts of Guinea, Sierra Leone, south-western Cameroon and parts of CAR.
- It is important to note that the SPI is more accurate for areas where the season has progressed further and/or which experience higher overall rainfall amounts. For further information on the SPI, see this factsheet.
- <u>ITCZ</u>: The Intertropical Convergence Zone (ITCZ) progressed northwards and remain located approximately at 17 degrees N, in line with the long-term average.
- The progression of the ITCZ has been slightly below normal during the first part of the season. However, during the latter part of

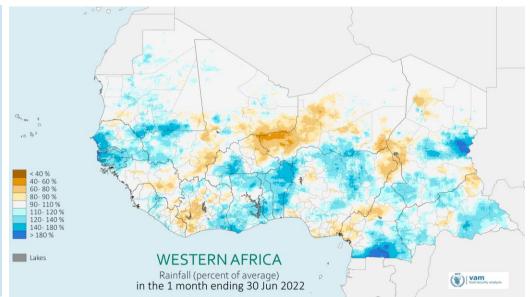
June, the ITCZ position caught up with its normal progression, leading to more favourable rainfall conditions throughout the region.



SECTION 2: MONTHLY TRENDS

Rainfall patterns: The last month (1-30 June 2022)





Cumulative rainfall:

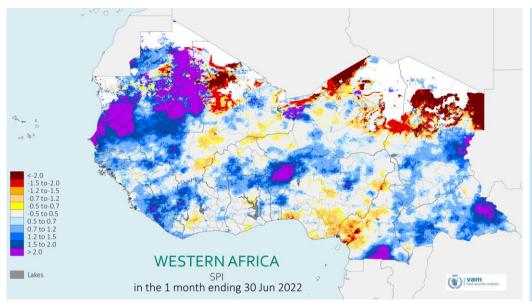
- Over the course of the last month (1-30 June 2022), the seasonal rains progressed from the southern parts of the region towards the north of the region.
- During this period, rainfall intensified in the region. Moderate rainfall (90-200 mm) were received over the southern parts of the Sahel, with lighter rainfall totals further north.
- In coastal areas, heavier rainfall (over 200 mm) was recorded, particularly in coastal areas from Guinea-Bissau through to Cameroon.
- Overall, in June 2022, the most important seasonal rainfall was recorded in the Mano

River countries (Guinea, Sierra Leone, Liberia Cote d'Ivoire), in the Gulf of Guinea (Ghana, Togo, Benin Nigeria and Cameroon) as well as in CAR.

Rainfall anomaly:

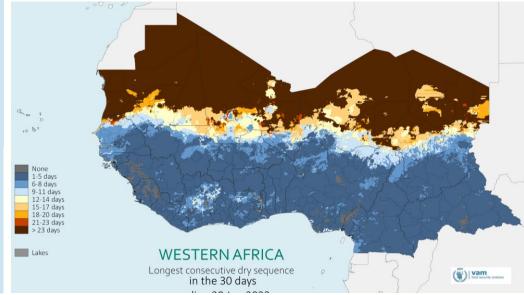
- Compared to the long-term average, above average conditions were recorded across most of the region in June, despite more pronounced rainfall deficits during the first dekad of the month (1-10 June).
- The western parts of the Sahel (Senegal, The Gambia, Guinea-Bissau and parts of western Mali and southern Mauritania) experienced above normal rainfall during the month of June, which can be attributed mainly to rains received during the second dekad (11-20 June). It is however unlikely that these wetter than normal conditions will have a significant impact on the agricultural season, given that planting activities in these areas usually start later in the season.
- In the Central Sahel as well as the Lake Chad Basin, below normal rains were received in June. Drier than normal conditions also prevailed in parts of western Cote d'Ivoire, southern Mali and south-western Cameroon.

Rainfall patterns: The last month (1-30 June 2022)



The map to the left shows the Standard Precipitation Index (SPI) for the last month (1-30 June 2022), based on CHIRPS satellite rainfall estimates. This simultaneously shows the experience of wet conditions on one or more time scales, and dry conditions on other time scales. Blues - dark purple for wetter conditions, Yellow - Browns for drier conditions.

The map to the right shows the longest consecutive dry sequence over the past month (1-30 June 2022), based on CHIRPS satellite rainfall estimates. Araes in blue have experienced shorter dry sequences, while areas in brown have experienced longer ones. Note that in some areas, this is linked to the fact that the season has not started yet.



Standard Precipitation Index (SPI):

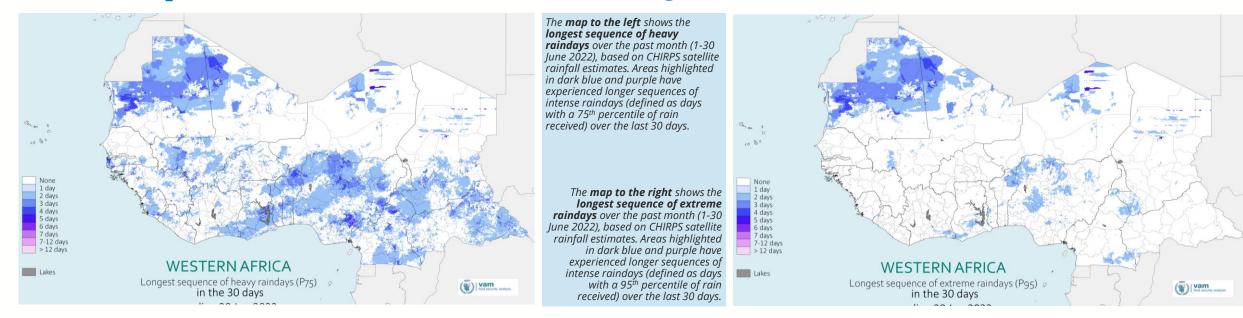
- The SPI suggests that most of the region experienced wetter than normal conditions in June, except for the Central Sahel, southeastern Nigeria and western Cameroon. Conditions in northern Benin, southern Cameroon and eastern CAR were wetter than normal, while similar patterns over the northernmost parts of the region should be attributed to the lower accuracy of the indicator for areas that receive very little seasonal rains.
- The accuracy and relevance of the monthly SPI is higher, and the indicator will become more accurate once the season progresses. For further information on the SPI, see this factsheet.

Dry Sequences:

- Over the month of June, the northern part of the season experienced long dry spells, which is due to the fact that the rainy season has not started yet.
- In the southern parts of the region, dryspells were generally short (1-5 days). However, some areas including central Cote d'Ivoire, central Ghana, as well as the southernmost areas of the Sahel experienced slightly longer dry sequences of up to 11 days.
- While it is unlikely that these moderate dry spells had any significant impact on agricultural activities at this early stage of the season in the region, the progression of

the rains during the month of July, and particularly their spatial and temporal distribution should be monitored closely, as erratic rainfall at the start of the season could negatively impact sowing activities.

Rainfall patterns: The last month (1-30 June 2022)



Heavy raindays:

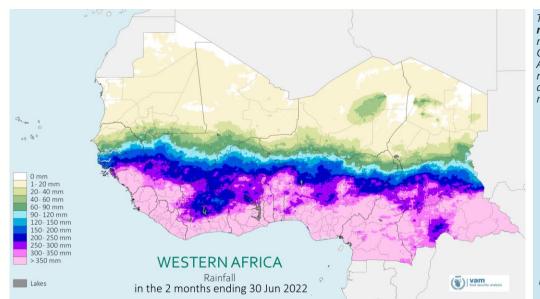
- Overall, the region experienced short to moderate sequences of heavy raindays (defined as days with a 75th percentile of rain received) during the month of June.
- The longest sequences of heavy raindays were observed over parts of northern Nigeria, north-eastern Benin, as well as along the border between Nigeria and Cameroon and in eastern CAR.
- In most other parts of the region, the sequences of heavy raindays remained relatively short (0-3 consecutive days). It is important to note that over the northern parts of the region, the rainy season has not yet started.

Extreme raindays:

- The occurrence of extreme raindays (defined as days with a 95th percentile of rain received) was relatively limited in June 2022.
- It is expected that the likelihood of extreme rainfall events, which can potentially lead to river floods and flash floods, increases as the rainy season progresses in the region.

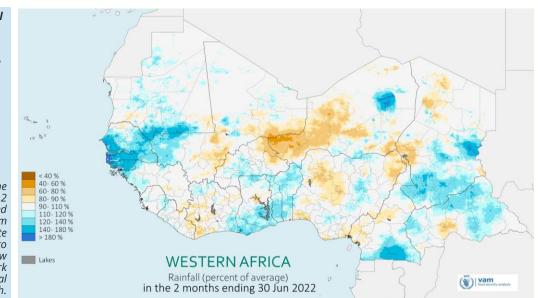
SECTION 3: THE SEASON SO FAR

The progression of the season so far



The map to the left shows the total rainfall received over the last 2 months (May - June 2022), based on CHIRPS satellite rainfall estimates. Areas highlighted in light green have received little rainfall, while areas in dark blue or pink have received moderate to intense rains.

The map to the right shows the rainfall anomaly over the last 2 months (May –June 2022), expressed in percentage of the long-term average, based on CHIRPS satellite rainfall estimates. Areas in light to dark brown have received below average rains, while areas in dark blue have experienced above normal rainfall over the past month.



Cumulative rainfall:

- By the end of June the early stages of the rainfall season are coming to an end, as the region enters its core period from July to September. So far, heavy rains (above 350 mm) have been received over most coastal areas in the south-western parts of the region (Sierra Leone, Liberia, southern Guinea), as well as over southern Nigeria, Cote d'Ivoire, Ghana, Togo, Benin, Cameroon and CAR.
- Meanwhile, moderate seasonal rainfall (up to 200 mm) was received over southern Mali, northern Cote d'Ivoire, southern Burkina Faso, Togo, Benin, central Nigeria, northern Cameroon, southern Niger and southern Chad.

Over the Sahelian belt, little rainfall (below 90 mm) has been received so far. In most of these areas, the season has not yet started. However, more intense rainfall is expected in these areas over the coming weeks and months.

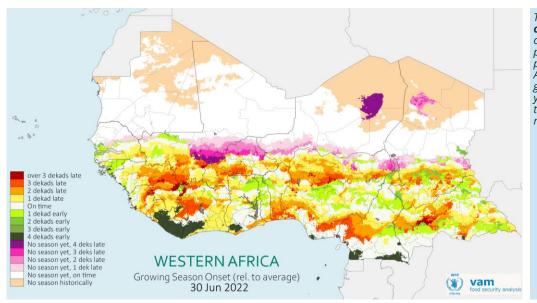
Rainfall anomaly:

- The early stages of the 2022 rainy season (May-June 2022) were characterised by mixed conditions. Over the western Sahel (Senegal, The Gambia, Guinea-Bissau, western Mali and southern Mauritania), above normal rainfall was received. However, the central and eastern parts of the Sahel experienced drier than normal conditions.
- In coastal countries, normal conditions prevailed. Western Cote d'Ivoire, Nigeria and western Cameroon recorded below normal rainfall, while southern Ghana, Togo and Benin received above normal rains over the past two months. Similarly, southern Cameroon, southern Chad and most of CAR also received above normal rainfall.

Summary:

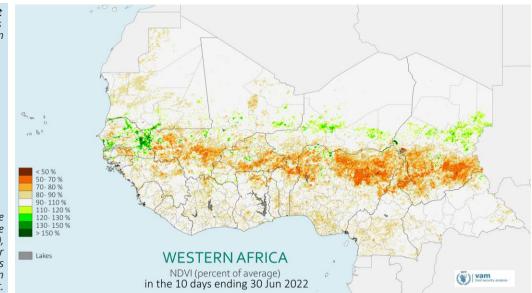
- The mixed conditions recorded over the northern parts of the region during these early stages of the season are unlikely to have major impacts on agricultural activities, given that planting normally occurs towards the month of July.
- Further south, localised drier than normal conditions need to be monitored closely, despite the fact that overall rainfall is more significant. This particularly applies to Cote d'Ivoire, Nigeria and western Cameroon.
- The developments over the coming weeks will be followed closely, particularly in the Sahel, where the period coincides with the planting window.

The progression of the season so far



The map on the left shows the start of the growing season anomaly (as of 30 June 2022), using the vegetation phenological cycle to show the possible start of sowing activities. Areas with delays in the onset of growing season are highlighted in yellow and red, while areas where the season has started earlier than normal are presented in green.

The **map on the right** shows the vegetation anomaly as a percentage of the average (as of 30 June 2022), based on the MODIS NDVI. Green for above normal vegetation, yellows and browns for vegetation production deficit.



Start of season:

- The growing season onset map suggests that the 2022 season has started later than normal (1-4 dekads) in most of the region, except for parts of CAR, Cameroon, central Nigeria and Togo, as well as the far western areas (Guinea Bissau, southern Senegal and western Mali) where the season started early.
- In areas affected by a late start of the season (mapped in yellow to red above), the delays can be attributed to erratic rains in the early stages of the rainy season. In most of the Sahel, particularly in areas highlighted in purple above (southern Niger, northern Burkina Faso and central Mali), the conditions for the potential start of planting activities have not yet been met.

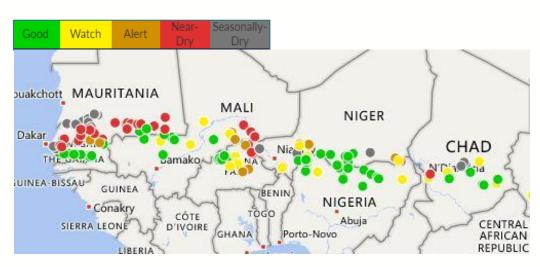
Vegetation:

 As a result of the mixed start of the rainy season, vegetation conditions are below average over a wide area in the Sahel from western Mali across Burkina Faso and northern Nigeria to southern Chad. Vegetation deficits are particularly pronounced in the eastern parts of the region (in northern (Benin, Togo and Nigeria) and southern Chad). In some areas, these conditions are expected to improve due to above normal rains received in mid to late June.

 On the other hand, better than normal vegetation conditions can be observed in Senegal, northern Niger and Chad, where above normal rainfall was received in early June.

Water resources:

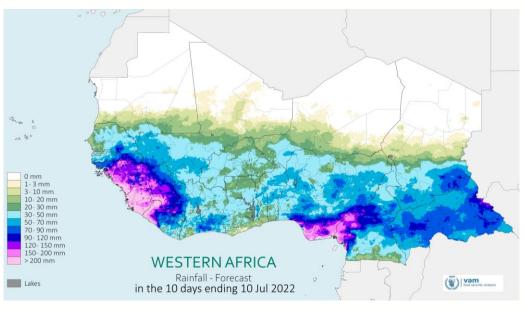
 The availability of water resources is mostly favourable in the southern and western parts of the Sahel (central Senegal, Mali, central Niger and central Chad). However, further north in Mauritania, northern Senegal, as well as in the Central Sahel, water points are dry or near dry as of early July 2022.



CHIRPS Water point status (as of 05 July 2022): 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)

SECTION 4: THE SHORT- AND MEDIUM-TERM OUTLOOK

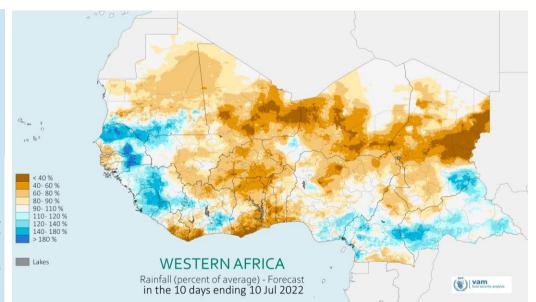
The short-term outlook

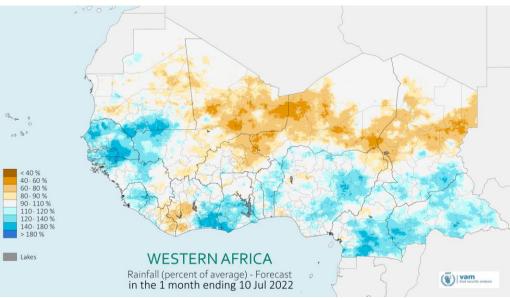


The map on the left shows the short-range CHIRPS-GEFS forecasts of the total rainfall expected for the upcoming dekad,. Blues for wetter than average conditions, browns for drier than average conditions.

The map on the right shows the short-range CHIRPS-GEFS forecasts for the upcoming dekad, expressed in percentage of the long-term average.

Blues for wetter than average conditions, browns for drier than average conditions.

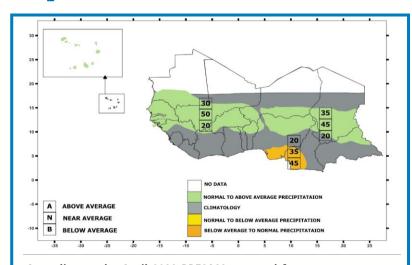




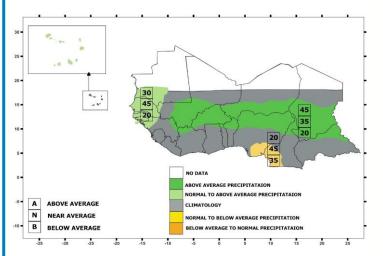
The map to the right shows the short-range CHIRPS-GEFS forecasts in one-month for the upcoming month, expressed in percentage of the long-term average. Blues for wetter than average conditions, browns for drier than average conditions.

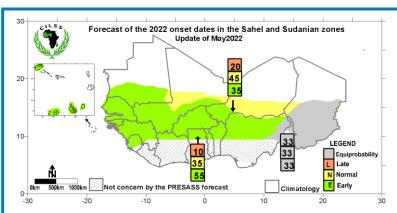
- Short range forecasts provide rainfall estimates up to July 10. In early July, most of the region will be drier than average. Only the western (Senegal, southern Mauritania, Guinea, Sierra Leone) and the south-eastern parts of the region (southern Cameroon, CAR, south-eastern Chad) will likely receive above normal rainfall.
- If these forecasts are verified, rainfall in the month leading up to 10 July will have been above average for most of the western and southern parts of the region, except for southern Liberia and western Cote d'Ivoire. However, the central and eastern parts of the Sahel will have experienced below normal rainfall.

The medium-term outlook: the May 2022 PRESASS seasonal forecast Updated



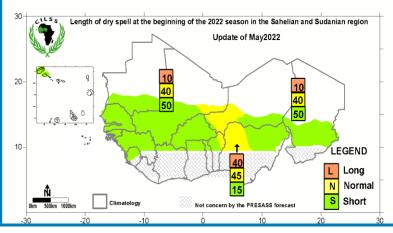
According to the April 2022 PRESASS seasonal forecast, average to above average seasonal rainfall (in May-July 2022, map above) is expected in most of the Sahelian belt including Cabo Verde. Rainfall in some coastal areas (Sierra Leone, Liberia) is expected average to below-average during the same period, while rainfall will likely be below average in coastal areas of Cameroon and south-western Nigeria throughout the season (May-July and Jul-Sep, map below).

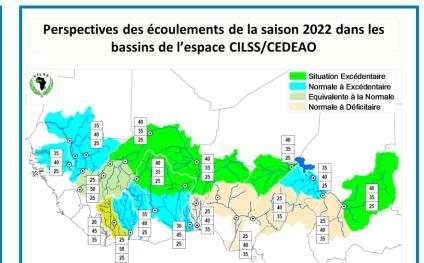




An early to normal onset of seasonal rains is expected (map above) in the Sahelo-Sudanian zone covering Senegal, Gambia, Guinea Bissau, Guinea, Sierra Leone, Burkina Faso, some Cabo Verde islands, southern parts of Mauritania, Mali, southwestern Niger, northern parts of Côte d'Ivoire, Ghana, Togo, Benin, Nigeria and central Chad.

At the beginning of the season **shorter to medium dry spells** are expected over the Sudanian and Sahelian belts of West Africa and Chad, except in south-west Niger, north-east Benin and north-western Nigeria where medium to long dry spells are expected (map below). Towards the end of the season, dry spells are expected to be shorter in the western half of the Sudano-Sahelian belt and normal to long on the eastern half.





The **map above** shows the **river basin levels** expected in 2022. Green indicates above normal river levels, blue normal to above normal levels, grey normal levels and pink below normal river levels compared to the long-term average.

In terms of the **hydrological situation**, normal to above normal river levels are expected in the Sahelo-Sudanian zone, apart from the Lower Niger, Logone, Ouémé and Cavally basins. River levels are expected to be:

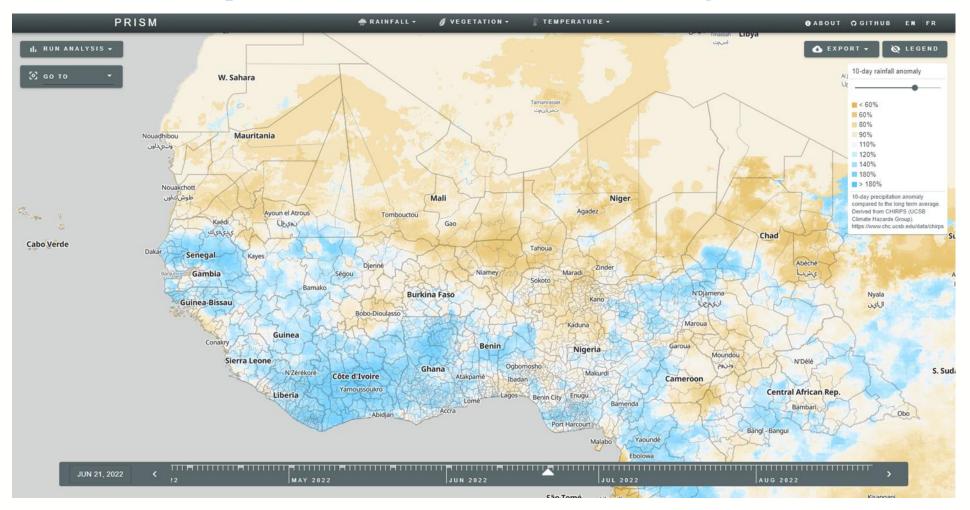
- Above average in the Inner Delta (in Mali) and the middle basin of the Niger River, the Komadougou Yobé and the upper basins of the Chari and the Volta (Burkina Faso).
- Average to above average in the basins of Senegal, Gambia, Comoé, Bandama (Côte d'Ivoire), Mono (Togo and Benin), Lower Volta (Ghana) and the downstream part of the Chari-Logone.
- And average in the Sassandra basin in Côte d'Ivoire, the upper Niger River basin (in Guinea and Mali) and iv) below average in the Lower Niger basins integrating the Bénoué, Logone (Chad), Ouémé (Benin) and Cavally (Côte d'Ivoire).

SECTION 5: THE PLATFORM FOR REAL-TIME IMPACT AND SITUATION MONITORING (PRISM)

The Platform for Real-time Impact and Situation Monitoring (PRISM)

RBD RAM is pleased to announce the launch of the PRISM platform for West Africa. In its deployment phase, PRISM will allow users to visualise download all key climate data used in this seasonal monitor. PRISM for real-time allows near monitoring of the progression of the rainy season, and to the historical rainfall. explore vegetation and temperature data.

In the coming months, additional hazards such as conflicts, as well as vulnerability layers including the historical Cadre Harmonisé (CH) Integrated Food Security Phase Classification (IPC) data will be incorporated into the platform. The integration of these layers will also allow users to run risk impact analyses. Further functionalities and impact analytics will be built into the platform in the future. RBD RAM will also explore the integration of external generated by national and regional partners.



You can **access the RBD PRISM Platfom** (internally and externally) by clicking on the map above, or through the following link: https://prism.dakar.wfp.org/.

For **more information on PRISM**, please visit this website: https://innovation.wfp.org/project/prism. For any specific enquiries about RBD RAM's Geospatial Analysis workstream and the roll-out of the PRISM Platform in West Africa, please contact the RBD RAM Team (rbd.ram@wfp.org).



Data sources:

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

Data Processing:RAM software components,
ArcGIS, QGIS

For further information: RBD RAM Unit

WFP Regional Bureau for Western Africa (RBD) Dakar, Senegal <u>rbd.ram@wfp.org</u>