West Africa Seasonal Monitor 2022 Season – September Update



World Food Programme

SAVING LIVES CHANGING LIVES

1-31 August 2022, monthly update

Highlights

- As of August, in the core period of the rainy season, West Africa continues to be characterised by variable conditions. Rainfall patterns over the past month reflect a trend observed since the beginning of the season, with the persistence of drier than normal conditions in the western parts of the region (except for northern Senegal, western Mauritania, Burkina Faso and western Niger), while wetter than normal conditions prevailed over the eastern parts (LCB, northern Cameroon, and Chad). Despite an increase in rainfall during the month of August, which led to flooding in many areas, rainfall deficits persist over some areas in the western parts of the region (western, southern and central Senegal, south-eastern Mauritania, western Mali) as well as in eastern Guinea-Bissau extending into southern Guinea and Sierra Leone.
- Overall, in west Africa, the rainy season has so far (between 1 May and 31 August) been characterised by mixed conditions. Over the western part of the region (central Senegal, south-western Mali, Guinea, Sierra Leone, south-eastern Mauritania), average to below average rainfall was received since the beginning of the season. The central parts of West Africa, including western Niger, central and southern Nigeria, and south-western Cameroon, have experienced a below normal rainy season. Conversely, the easternmost parts of West Africa (including the Lake Chad Basin, Chad and eastern CAR), as well as parts of the region's centre (Burkina Faso, Cote d'Ivoire) and north-west (coastal areas of Senegal, western Mauritania) received above average cumulative rainfall since the beginning of May 2022. From late July, rainfall over the region has increased resulting in a significant decline of the overall rainfall deficits. However, the distribution over time and space has been erratic in some areas. Erratic seasonal rainfall since early May has resulted in average to below average rainfall totals in south-western Mali, western Niger and central Nigeria, as well as in parts of central Senegal and south-eastern Mauritania. These deficits may have negative impact on crop and pasture development over areas where dryness has persisted for a very long time, or which have experienced an erratic spatial and temporal distribution of seasonal rains (such as northern and central eastern Senegal, central southern Mali, western Niger and central Nigeria). Flooding was reported in Senegal, causing fatalities and The Gambia damaging properties. In <u>Sierra Leone</u>, heavy rainfall resulted in landslides, with causalities reported in Freetown.
- As a result of the of rainfall improvement, since late July, a markedly above average vegetation cover extends over much of the Sahel across Mali, north-eastern Burkina Faso, Niger, Chad, northern Nigeria and southern Mauritania. Meanwhile low vegetation recovery can be observed in some areas over the Sahel region (over northern and central eastern Senegal, central southern Mali and western Niger), due to early rainfall deficits
- The short-term forecasts indicate that by late September (30 September 2022), seasonal rainfall will likely be mostly above average for the West Africa region, except for southern coastal areas (southern cote d'Ivoire, Ghana, south-western Cameroon, south-eastern Nigeria and Liberia), as well as northwestern Mauritania. Drought will likely be most pronounced in southern coastal Cote d'Ivoire, Ghana, and south-eastern Liberia. This might partially offset the rainfall deficits in parts of the Sahel (central and northern Senegal, southern Mauritania, western Mali, western Niger) and lead to more favorable agriculture and pastoral conditions in these areas. However, for the countries of the Gulf of Guinea this deserves close monitoring.

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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 August 2022



Rainfall patterns: 11-20 August 2022



Rainfall patterns: The last dekad (21-31 August 2022)



- Cumulative rainfall: During the last dekad of August widespread significant seasonal rainfall was recorded over West Africa.
- Very heavy rainfall (more than 120 mm) was received in southern Senegal, Guinea-Bissau, Guinea, Sierra Leone, Liberia, central Cote d'Ivoire, eastern Ghana, Togo, Benin, central Nigeria as well as southern Cameroon, southern Chad and CAR.
- Moderate to heavy rainfall (up to 90 mm) was also recorded in most of the Sahel over southern and western Senegal, The Gambia,

coastal areas.

- Elsewhere light to moderate seasonal rainfall was received, including over central and northern Senegal, in the northern Sahel (Mauritania, northern Mali, northern Niger and northern Chad).
- central Mali, Niger, Chad and southern Rainfall anomaly: Compared to the longterm average, the rains recorded in the last dekad of August were above average in central Mali, eastern Burkina Faso, eastern Niger, northern Nigeria, the LCB, Chad, southern coastal areas (Liberia, Cote d'Ivoire, Ghana, Benin, Togo and western Mauritania).
 - On the other hand, rainfall received in Senegal, The Gambia, Guinea-Bissau, Guinea,

northern Sierra Leone, western Niger, most of Nigeria, and CAR.



Rainfall patterns: The last dekad (21-31 August 2022)



 Standard Precipitation Index (SPI): The SPI suggests that conditions were wetter than normal throughout the region during the last dekad of August (21-31 August), except for some parts of Guinea, Sierra Leone, southwestern Cameroon and northern Mauritania as well as parts of CAR and southern Nigeria. • 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.

• **ITCZ**: The Intertropical Convergence Zone (ITCZ) progressed northwards and remain located approximately at 19.2 degrees N, above the long-term average.

• The progression of the ITCZ has been slightly below normal during the first part of the season, late June and early July. During the second dekad of July the ITCZ position was approximately located at 17.7 degrees N, below the long-term average.

 However, starting in early August, the ITCZ remained located above its climatological average, leading to more favourable rainfall conditions over the western part of region and the Sahel.



SECTION 2: MONTHLY TRENDS

Rainfall patterns: The last month (1-31 August 2022)



Cumulative rainfall:

- Over the course of the month of August, the seasonal rains progressed northwards within the region, reaching the Sahel.
- During this period, the western parts of the region (western Senegal, The Gambia, Guinea, Guinea-Bissau, Sierra Leone, Liberia, and western Cote d'Ivoire) received very heavy rainfall (120 to over 350 mm).
- Very heavy rains were also received in central Burkina Faso, the northern parts of coastal countries in the Gulf of Guinea, as well as in the eastern parts of West Africa, including in Nigeria, Cameroon, southern Chad and CAR.

 Light to moderate rainfall was received over the northern parts of the Sahel, central and northern Senegal, western Mali as well as in bimodal coastal areas along the Gulf of Guinea (southern Cote d'Ivoire and southern Ghana, Togo and Benin).

Rainfall anomaly:

- As of late August, in the core period of the rainy season in West Africa continues to be characterised by variable conditions.
- Rainfall patterns over the past month reflect a trend observed since the beginning of the season, with the persistence of drier than normal conditions in the western parts of the region (except for northern Senegal, western Mauritania, Burkina Faso and western Niger), while wetter than normal conditions prevailed over the eastern parts (LCB, northern Cameroon, and Chad).
- Despite an increase in rainfall during the month of August, which led to flooding in many areas, rainfall deficits persist over some areas in the western parts of the

region (western, southern and central Senegal, south-eastern Mauritania, western Mali) as well as in eastern Guinea-Bissau extending into southern Guinea and Sierra Leone.

- Over the eastern part of the (southern and central Nigeria, southern Cameroon and western CAR), seasonal rainfall remains below normal.
- This dryness observed over, central, western and southern Senegal, western Mali, and south-eastern Mauritania, needs to be monitored as the rainy season enters its critical period (that will mark the end the season in the Sahel), with potentially negative impacts on agricultural production.

Rainfall patterns: The last month (1-31 August 2022)



Standard Precipitation Index (SPI):

- The SPI reflects the trend observed with the rainfall anomaly (see slide 9) over the same period.
- Western Africa continues to be characterised by variable conditions. Drier than normal conditions persist in the western parts of the region (except for northern Senegal, western Mauritania, Burkina Faso and western Niger), while wetter than normal conditions prevailed over the eastern parts (LCB, half northern Cameroon, Chad and eastern CAR)
- Over the eastern part of the region in most of southern and central Nigeria, southern Cameroon and western CAR seasonal rainfall remains below normal.

Dry Sequences:

- Over the month of August, the northern part of the season experienced long dry spells, which is due to the fact that the rainy season has late/not started yet meanwhile southern Mauritania, south-eastern Liberia, south coastal areas of Gulf of Guinea and south eastern Cameroon experienced long dry spells up to 23 days, which are partly due to normal seasonal patterns in bimodal areas.
- Over most of the region, dry-spells were generally short (1-5 days). However, some

areas including central Cote d'Ivoire, central Ghana, central Benin, central Togo and south-eastern Nigeria, as well as the southernmost areas of the Sahel experienced slightly longer dry sequences of up to 11 days.

During this critical period of the core months of the season, long dry spells can be indicative of an erratic distribution of the seasonal rains, which could negatively impact crops conditions.



Rainfall patterns: The last month (1-31 August 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 August.
- The longest sequences of heavy raindays were observed over parts of western Guinea Bissau, Guinea, central Burkina Faso, northern Nigeria, central Cameroon,

eastern Chad and north-eastern CAR.

 In most other parts of the region, the sequences of heavy raindays remained relatively short (0-3 consecutive days).

Extreme raindays:

 The occurrence of extreme raindays (defined as days with a 95th percentile of rain received) was relatively limited in August 2022. In eastern Chad, the sequences of extreme raindays remained relatively short (0-3 consecutive days).

SECTION 3: The season so far

The progression of the season so far



Cumulative rainfall:

- At 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 region reaching the southern parts of the Sahel.
- Meanwhile, moderate seasonal rainfall (up to 150 mm) was received in the northern parts of the Sahelian belt. Only northern Mauritania experienced very little rains.

Rainfall anomaly:

- Overall, the rainy season in West Africa has so far been characterised by mixed conditions. Over the western part of the region (central Senegal, south-western Mali, Guinea, Sierra Leone, south-eastern Mauritania), average to below average rainfall was received since the beginning of the season.
- The central parts of West Africa, including western Niger, central

and southern Nigeria, and south-western Cameroon, have also experienced a below normal rainy season.

 Conversely, the easternmost parts of West Africa (including the Lake Chad Basin, Chad and eastern CAR), as well as parts of the region's centre (Burkina Faso, Cote d'Ivoire) and north-west (coastal areas of Senegal, western Mauritania) received above average cumulative rainfall since the beginning of May 2022.

Summary:

- So far, the rainy season in West Africa remains characterised by mixed conditions. From late July, rainfall over the region has increased resulting in a significant decline of the overall rainfall deficits. However, the distribution over time and space has been erratic in some areas.
- Only the eastern parts of the region, coastal areas in northwestern West Africa, as well as central Burkina Faso and Cote d'Ivoire benefited from wetter than average conditions.

- Erratic seasonal rainfall since early May has resulted in average to below average rainfall totals in south-western Mali, western Niger and central Nigeria, as well as in parts of central Senegal and south-eastern Mauritania. These deficits may have negative impact on crop and pasture development over areas where dryness has persisted for a very long time, or which have experienced an erratic spatial and temporal distribution of seasonal rains (such as northern and central eastern Senegal, central southern Mali, western Niger and central Nigeria).
- Meanwhile, heavy rains have led to flooding and landslides over many areas (<u>Mali, Ghana, Chad, Nigeria</u>). Flooding was reported in Senegal, causing fatalities and The Gambia damaging properties. In <u>Sierra Leone</u>, heavy rainfall resulted in landslides, with causalities reported in Freetown.

The progression of the season so far



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, Chad, central Nigeria and Togo, as well as the western areas (Guinea-Bissau, southwestern Senegal, western Gambia 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 (northern Niger, northern Mali, southern Mauritania, and northern Chad), the conditions for the potential start of planting activities have not yet been met.

Vegetation:

 As a result of the of rainfall improvement, since late July, a markedly above average vegetation cover extends over much of the Sahel across Mali, northeastern Burkina Faso, Niger, Chad, northern Nigeria and southern Mauritania. Meanwhile low vegetation recovery can be observed in some areas over the Sahel region (over northern and central eastern Senegal, central southern Mali and western Niger), due to early rainfall deficits

Water resources:

• The availability of water resources is mostly improved due to the favourable rainfall conditions during July. Mixed conditions (good and watch conditions) can be observed in most of the region (Senegal, Mali, Burkina, Niger, Mauritania) while good conditions remained in Chad and eastern Niger.



CHIRPS Water point status (as of 14 September 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)

The progression of the season so far (areas of concern)



In Gorgol region of Mauritania, late start of the seasonal rainfall negatively vegetation development, This region has experienced erratic and below average rainfall since the beginning of the rainy season. Was observed very difficult vegetation recovery. Only early September was seen the first signal of above average vegetation cover.



In Louga region of Senegal, an overall normal cumulative rainfall total at the end of August hides the uneven distribution of rains over the season, which has been marked by an early start in June followed by below normal rainfall in early July and early August. The last dekad of July, as well as late July and early September are marked by well above normal rainfall, with average vegetation conditions.



The **map to the right** shows the **rainfall anomaly** over the last 4 months (May – August 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.



After a close to normal start of the season, rainfall in Nassarawa region of Nigeria experienced a drop compared to the long-term average between late June and mid-August 2022. The erratic distribution of rains is reflected in a below normal progression of the NDVI as of early September 2022.



Sikasso region of Mali has experienced erratic and below average rainfall since the beginning of the rainy season. After a false start of the season in early April, rainfall remained consistently below average until late July, with dry conditions in late June/early July.

SECTION 4: The short- and medium-term Outlook

The short-term outlook

in the 10 days ending 30 Sep 2022



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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 belowaverage 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 first deployment phase, PRISM will allow users to visualise and 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 and 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 data 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: <u>https://prism.dakar.wfp.org/</u>.

For **more information on PRISM**, please visit this website: <u>https://innovation.wfp.org/project/prism</u>. 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 (<u>rbd.ram@wfp.org</u>).



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

Data Processing: RAM software components, ArcGIS, QGIS



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