Over southernmost regions of Western Africa, light to moderate rainfall continue to be observed. The heaviest amount of seasonal rainfall is recorded over eastern Guinea, Liberia, Sierra Leone, over southern Gulf of Guineas countries in Cote d’Ivoire, Ghana, Togo, Benin, Nigeria, as well as Cameroun and eastern and western CAR and south-western Burkina. In early stage of the season, rainfall diminished in some place and rainfall amounts resulted below average over most Nigeria, Guinea, and in pockets over Cote d’Ivoire, Ghana and northern Benin and Togo, in CAR and far Southern Cameroun. However, in the Sahel, monsoon is not yet favorable for seasonal rainfall and neutral conditions remain.

In the early stages of the season, the region is dominated by drier than average conditions. Rainfall deficits are seen to extend from Guinea to Nigeria and southwards to Cote d’Ivoire and Ghana. Only Sierra Leone and neighbouring areas of Guinea and Liberia and parts of Cameroun and C.A.R. have so far enjoyed above average rainfall. The early season dryness affect the vegetation conditions leading below average vegetation cover across central Nigeria, pockets over Benin, Togo, Ghana, Cote d’Ivoire and Southern Burkina Faso.

Short-term forecasts, indicate much drier than average conditions for late May in the western areas of the region over Guineas, Sierra Leone, Liberia, Western Mali, Burkina Faso, Northern Cote d’Ivoire, Ghana, Benin, Togo, Western Niger as well as pockets in central Cameroun and eastern CAR. However wetter than average is expected in costal areas of Gulf Guinea, over Nigeria and Southern Chad. This pattern is also reflected in the one month rainfall anomaly to the end of May – we see drier than average patterns spreading across most of the region since the second half of May makes a greater contribution to the seasonal rainfall.

According PRESASS seasonal forecast above average rainfall is expected over the Sahelian and Sudanian belt from Chad to the Atlantic coast while below-average rainfall will likely be observed over Liberia and Sierra Leone during July-August-September. These conditions should lead to early to normal seasonal rainfall onset and shorter to normal dry spell length in the central and eastern parts of the Sahel.

According to ECMWF (for June –August 2020) forecasts point to below-average rainfall in the western areas of the Sahel, Mauritania, Senegal, western Mali and along the Gulf of Guinea and Cameroon. Below-average rainfall is also expected in Central and south eastern Cameroun, and over most parts of CAR. Elsewhere conditions are mostly near average (Burkina, Niger and Chad). The two sets of forecasts are not particularly consistent at the moment, with ECMWF being more pessimistic.
West Africa: Rainfall Season 2020

Latest Developments, May 1 - 10 2020

Over southernmost regions of Western Africa, light to moderate rainfall continue to be observed. The heaviest amount of seasonal rainfall is recorded over eastern Guinea, Liberia, Sierra Leone, over southern Gulf of Guineas countries in Cote d’Ivoire, Ghana, Togo, Benin, Nigeria, as well as Cameroun and eastern and western CAR and south-western Burkina.

In early stage of the season, rainfall diminished in some place and rainfall amounts resulted below average over most Nigeria, Guinea, and in pockets over Cote d’Ivoire, Ghana and northern Benin and Togo, in CAR and far Southern Cameroun. However, in the Sahel, monsoon is not yet favorable for seasonal rainfall and neutral conditions remain.

The ITCZ advanced to the North, while still remaining south of the long-term average. This anomalous south position to the average position in southern and eastern regions may have contributed to the limited rainfall observed over the Gulf of Guineas countries and not favourable for monsoon rains of over the Sahel region.

(*) ITCZ: Inter-Tropical Convergence Zone. It’s 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.

Rainfall amounts from 01 to 10 May 2020 (above). Same as a proportion of the long term average (below). Blues for wetter than average, browns for drier than average.
In the early stages of the season, the region is dominated by drier than average conditions. Rainfall deficits are seen to extend from Guinea to Nigeria and southwards to Cote d’Ivoire and Ghana.

Only Sierra Leone and neighbouring areas of Guinea and Liberia and parts of Cameroon and C.A.R. have so far enjoyed above average rainfall.

These are early days in the seasonal development, so these conditions are not of particular significance, but will continue to be monitored.

Rainfall in the two months up to May 10 as a percent of the average. Blues for wetter than average conditions, browns for drier than average conditions.
West Africa: Rainfall Season 2020

Seasonal Development

The early season dryness affects the vegetation conditions (map upper left) leading below average vegetation cover across central Nigeria, pockets over Benin, Togo, Ghana, Cote d’Ivoire and Southern Burkina Faso.

Over southern Chad favorable vegetation conditions are still observed, and already some earlier than usual starts of the season can be seen in northern Nigeria and Cameroun.

This is also reflected in the availability of water resources. Across extensive areas just southern half of the Sahel from Mali to Chad in Central Mali, Southern Niger and Far eastern Sahelian belt of Chad water availability has recovered.

However, in the regions further west including Senegal and Mauritania, water resources are in very low levels and conditions may not change in the immediate future according to the forecasts (see next slides) and the monsoon conditions.

Short-term Forecasts

Short range forecasts provide estimates of rainfall up to May 31. Forecasts indicate much drier than average conditions for late May in the western areas of the region over Guineas, Sierra Leone, Liberia, Western Mali, Burkina Faso, Northern Cote d’Ivoire, Ghana, Benin, Togo, Western Niger as well as pockets in central Cameroun and eastern CAR. However wetter than average is expected in costal areas of Gulf Guinea, over Nigeria and Southern Chad.

This pattern is also reflected in the one month rainfall anomaly to the end of May – we see drier than average patterns spreading across most of the region since the second half of May makes a greater contribution to the seasonal rainfall.
West Africa: Rainfall Season 2020

Seasonal Forecasts (2020, PRESASS, ECMWF)

According to PRESASS seasonal forecast, above average rainfall is expected over the Sahelian and Sudanian belt from Chad to the Atlantic coast, particularly over the southern part of Chad, Niger agricultural belt, Burkina Faso, the agricultural areas of Mali, southern Mauritania, Senegal, Gambia, Guinea Bissau, Cape Verde, northern Guinea, far northern parts of Côte d’Ivoire, Ghana, Togo, Benin and Nigeria. However during July-August-September are expected below-average rainfall over Liberia and Sierra Leone.

Early to normal seasonal rainfall onset is expected in the central and eastern parts of the Sahel, from south-eastern Mali to Chad and in the northern parts of Côte d’Ivoire, Ghana, Togo, Benin and Nigeria while normal to late seasonal rainfall onset are expected in Western part of the Sahel (southern Mauritania, Senegal, south-western Mali, Guinea, Guinea Bissau, Sierra Leone and northern Liberia), with the possibility of an early onset in some places due in particular to the ongoing warming of the Senegalese and Mauritanian coasts.

Shorter to normal dry spell length after the onset of the season are expected in the Central and Eastern Sahel and in some localities in the northern parts of Ghana, Togo, Benin and Nigeria and towards the end of the season, shorter dry spells are expected over the entire Sahelian and Sudanian belt, except in the Lake Chad area (Niger, Nigeria and Chad) where longer to normal dry spell durations could be observed.

Latest seasonal forecasts from ECMWF suggest Gulf of Guinea countries will face drier than average conditions from June to August 2020.

For the rest of the region, they point to below-average rainfall in the western areas of the Sahel, Mauritania, Senegal, western Mali and along the Gulf of Guinea and Cameroon. Below-average rainfall is also expected in Central and south eastern Cameroun, and over most parts of CAR. Elsewhere conditions are mostly near average (Burkina, Niger and Chad).

ECMWF forecasts are more pessimistic than those of PRESASS (see next) so the two sets of forecasts are not particularly consistent at the moment.
DATA SOURCES:
Rainfall: CHIRPS, Climate Hazards Group, UCSB
Vegetation: MODIS NDVI, EOSDIS–NASA

PROCESSING:
VAM software components, ArcGIS

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