West Africa: the 2017 Season

Late season dryness affects Sahelian areas

Bulletin 2017 – 1, Western Africa

June 2017

GEOSPATIAL ANALYSIS

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Contents

Highlights

- The West African rainfall season got off to a good start with wetter than average conditions across the region leading to much enhanced vegetation cover, particularly in the semi-arid Sahelian regions.
- However, from late July onwards, conditions became progressively drier, and significant rainfall deficits affected the more marginal crop and pastoral regions. The late season was particularly dry, with many areas receiving about half of the usual amounts in September.
- Most affected areas include southern Mauritania, and its border regions with Senegal and Mali, as well as eastern Niger and central eastern Chad. Poor crop performance for subsistence agriculture and sparse pasture and water resources will cause problems for vulnerable agro-pastoral communities in these regions, that may be enhanced by localized insecurity and conflict.
- In spite of these drier conditions, localized heavy and persistent rains led to landslides in Sierra Leone and the worst flooding of the past 5 years in Benue state, Nigeria.

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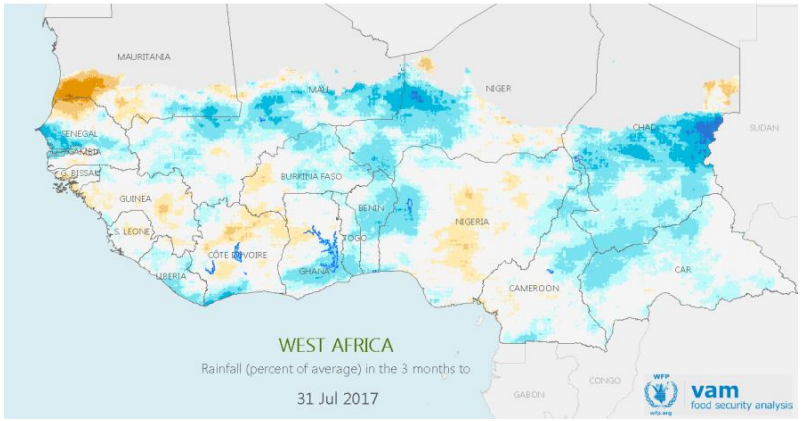
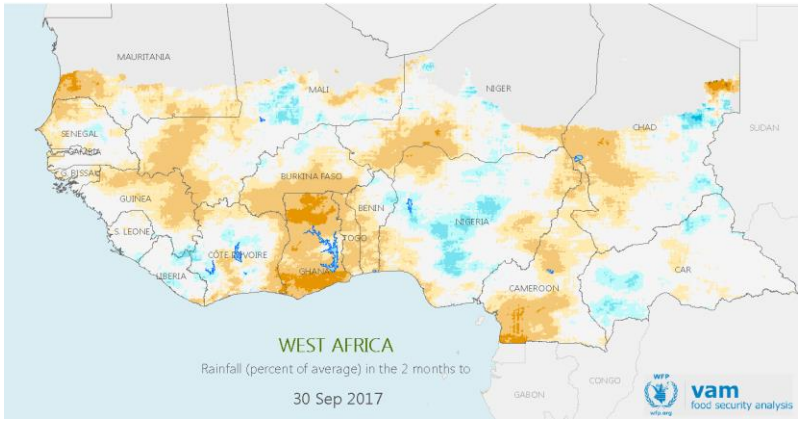
The Season at a Glance

After an earlier and wetter than average start, drier conditions have dominated through the peak of the growing season, affecting some marginal areas of West Africa

May - July 2017



August-September 2017



Phase 1

May to July 2017

Overall good rainfall conditions spread across the region as a whole from May to July

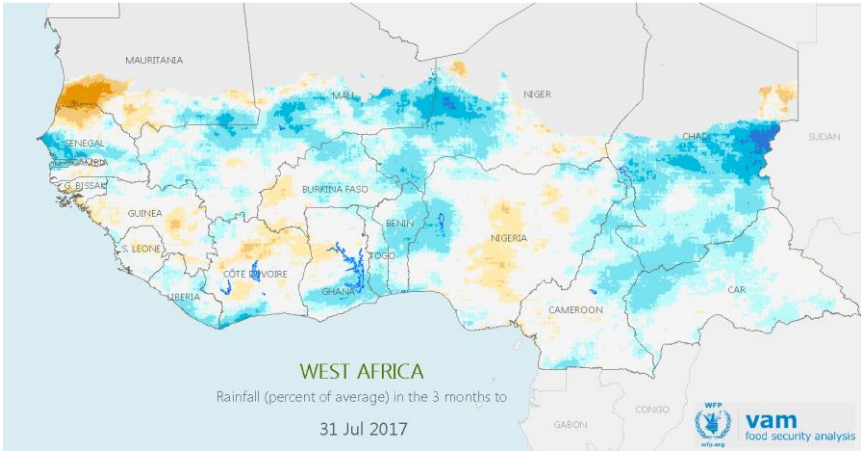
Phase 2

Late July to September 2017

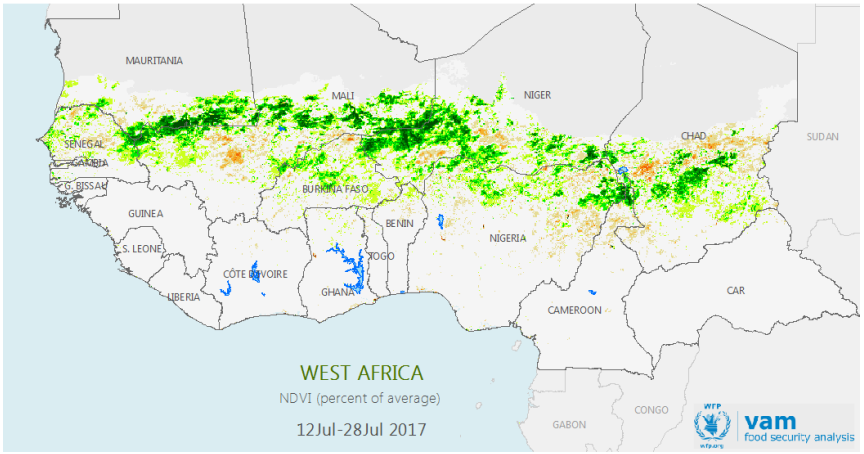
From late July, drier than average conditions spread across many areas of the region. However, floods and landslides affected Sierra Leone and Nigeria

West Africa: May to July 2017

A good early start of the rains



May to July rainfall as a percentage of the average.
Blues for wetter than average, browns for drier than average.



Vegetation cover in late July (early green-up phase in the Sahel) as a percentage of the average.
Greens for above average vegetation, orange for below average.

RAINFALL and VEGETATION

Until mid July 2017, the West Africa season was marked by above average rainfall conditions (map above left). This led to earlier than usual starts of the season across the region.

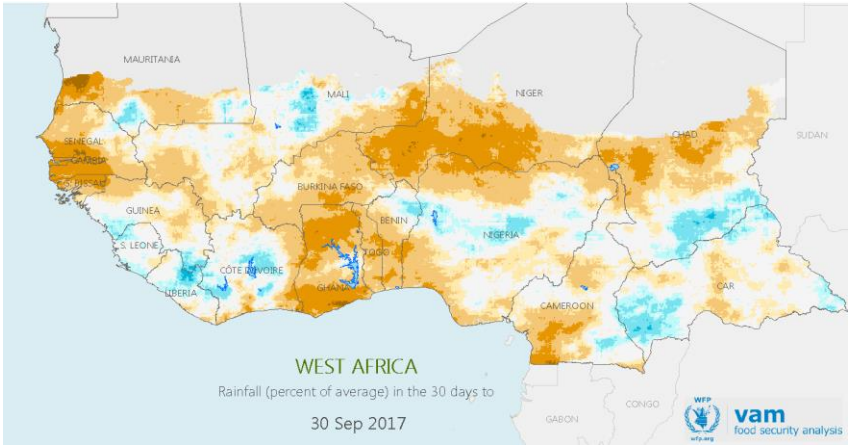
Initial crop development across the region enjoyed mostly favourable conditions, in a repeat of the 2015 and 2016 seasons.

Vegetation cover across the region's marginal sahelian areas was well above average particularly in the Mali-Mauritania and Niger-Mali borders as well as central Chad (see map above right).

West Africa: August to October 2017

Widespread drier conditions lead to poor conditions in marginal areas

From mid-July to early October drier than average conditions predominated in contrast to the first stage of the season. This shift in rainfall patterns is partly due to a southwards retreat in the monsoonal rainfall systems that had previously moved further north than usual. In particular, the month of September was particularly drier than average across most of the region.



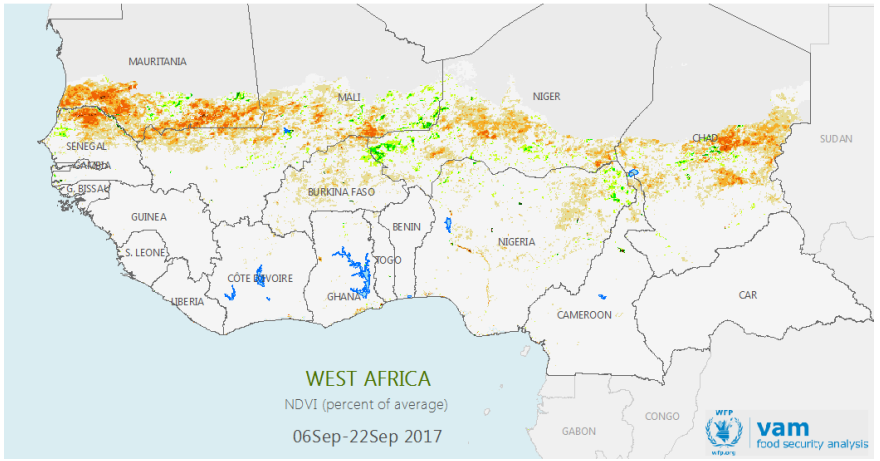
September rainfall as a percentage of the average.
Blues for wetter than average, browns for drier than average.

The August to September rainfall map highlights locations of more pronounced dryness: these are most intense in marginal northern areas such as the Mauritania-Senegal-Mali, Burkina Faso and northern Ghana as well some areas of Niger and the Lake Chad basin.

As a result from this late season dryness vegetation cover dropped noticeably to below average levels in more marginal areas of the Sahel

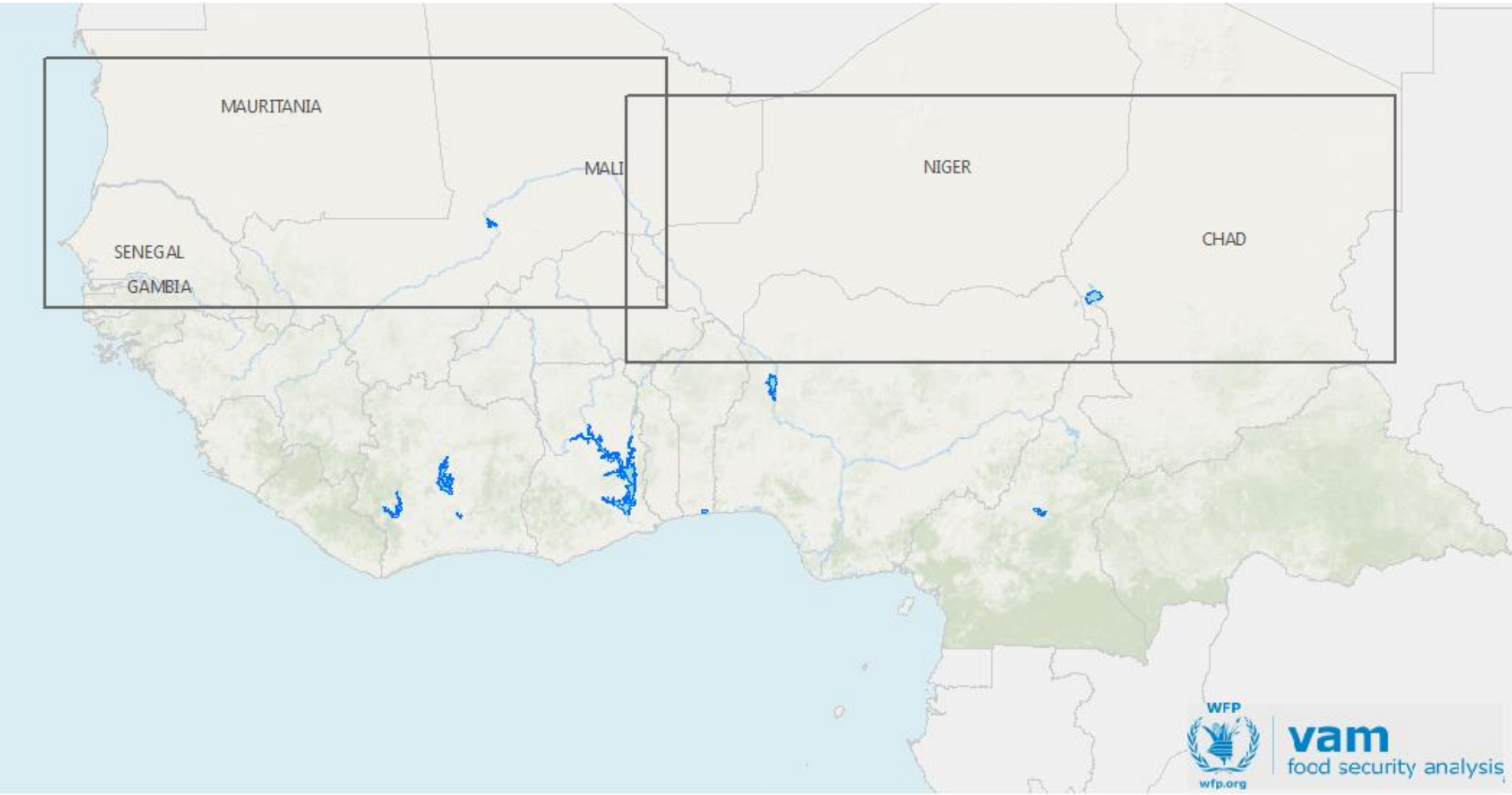
Southern Mauritania and pastoral areas in Mali, Niger and eastern Chad are particularly affected, indicating poor pasture and water resources for pastoral livelihoods.

Dryness will remain across West Africa until the rest of the season. Away from marginal areas, impacts of late dryness on crop production are thought to remain very slight, given good moisture reserves from the wetter earlier stages of the season.



Vegetation cover in the first half of September (typical time of peak vegetation cover in the Sahel) as a percentage of the average.
Greens for above average vegetation, orange for below average.

FOCUS AREAS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SENEGAL
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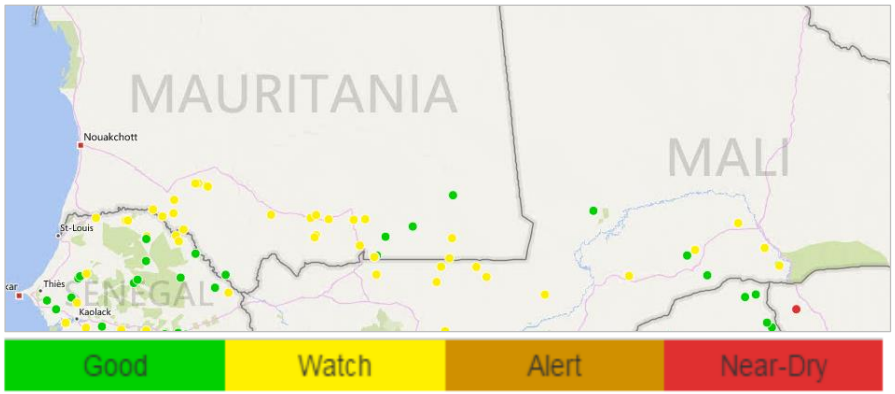
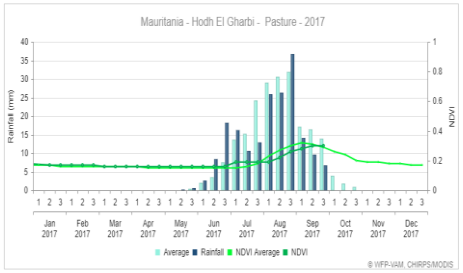
MAURITANIA, SENEGAL, MALI

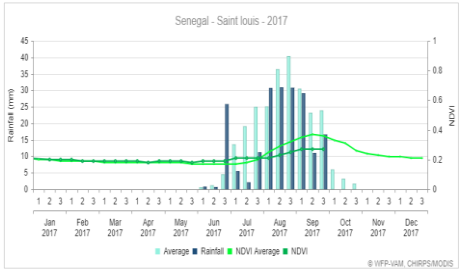
The South of Mauritania and the north-eastern regions of Senegal experienced pronouncedly drier than average conditions during key stages of the rainfall season. In contrast with the early stages of the season, irregular and below average rainfall from late July to early September led to a marked drop in vegetation cover to well below average values (see map below right).

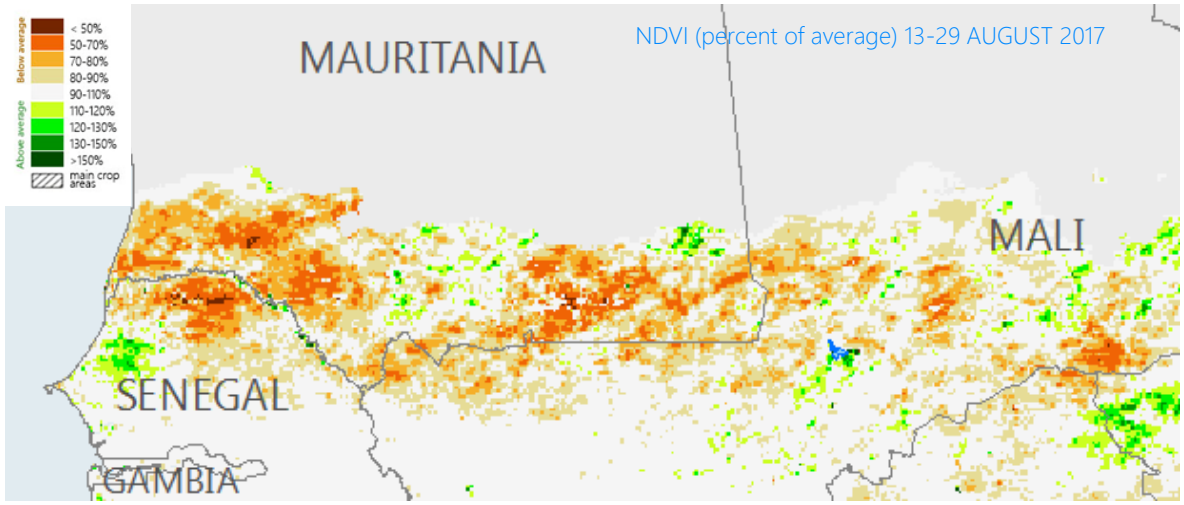
This indicates poor performance of the agricultural season and restricted pastoral and water resources for livestock, leading to pessimistic food security situation for the poorest and most vulnerable populations in the months to come.

Currently, water availability is good to moderate (see map right) - late season dryness may worsen this status earlier than usual as the dry season progresses.









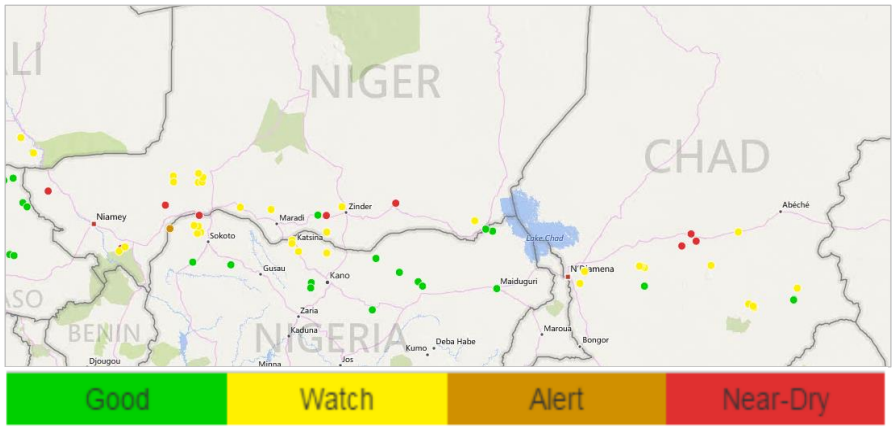
NIGER and CHAD

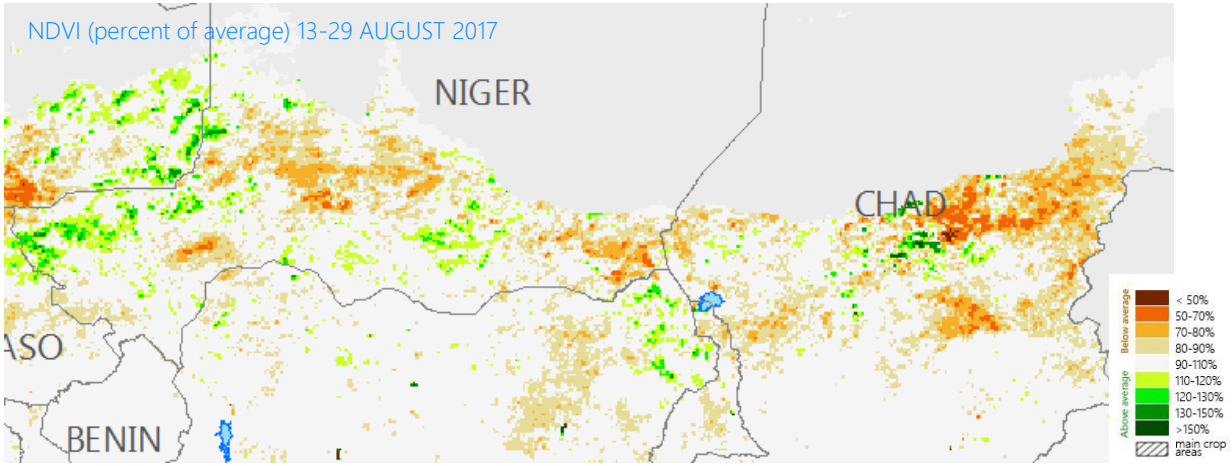
In the Sahelian regions of Niger and Chad, after a good start to the season, drier than average conditions dominated from mid August onwards. Irregular rainfall and dry spells led to a pronounced drop in vegetation status (see map lower left).

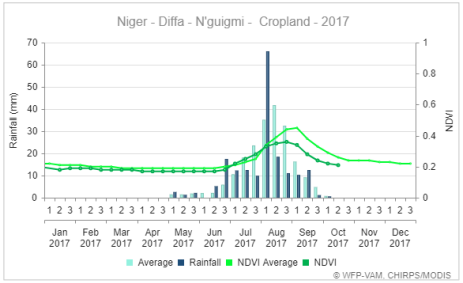
In Niger, problematic areas include the pastoral areas in Tahoua and Agadez provinces as well as marginal croplands in Diffa province. Although at the national level, crop production should be close to average, localized problems can be expected in these areas.

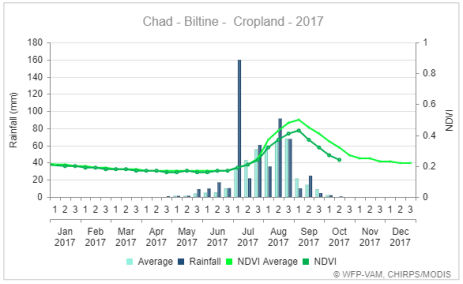
Areas of concern also include central eastern Chad, particularly across Batha, Ouaddai and Wadi Fira (Biltine). Crop production and pasture resources will be lower than average.

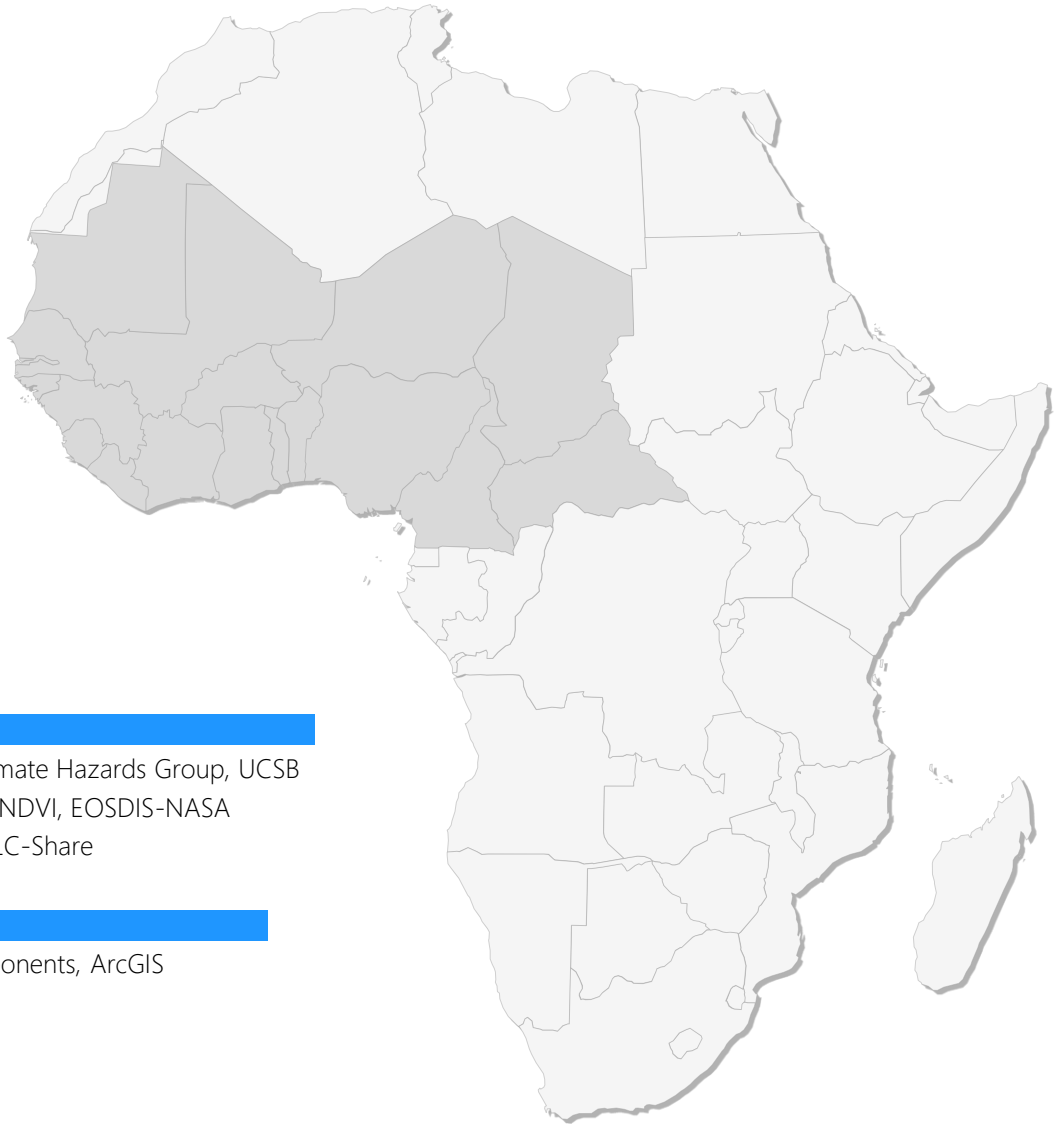
Currently, water availability is moderate to poor (see map right) and problems for pastoralist communities may arise from earlier and wider than usual seasonal movements.











FOR FURTHER INFORMATION:

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DATA SOURCES:

Rainfall: CHIRPS, Climate Hazards Group, UCSB
Vegetation: MODIS NDVI, EOSDIS-NASA
Land Cover: FAO GLC-Share

PROCESSING:

VAM software components, ArcGIS

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