

SAVING LIVES

CHANGING
LIVES



South Sudan – Seasonal Monitor

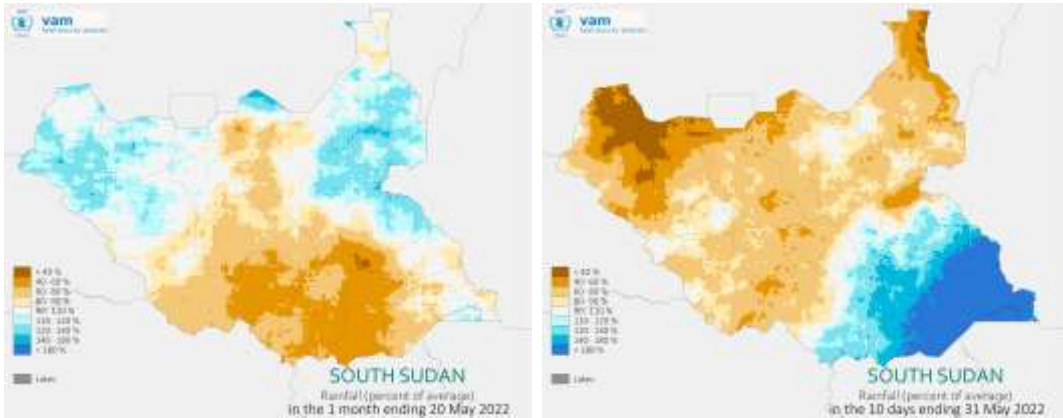
May 2022

Summary

- Pronounced rainfall deficits have affected most of the Great Equatoria regions of South Sudan in the early stages of the 2022 rainfall season, with some areas receiving half of the usual rainfall by mid-May. Some delayed planting and unfavourable conditions for early crop development may have occurred. In late May, abundant rainfall overcame early season deficits in Central and Eastern Equatoria, but in Western Equatoria drier than average conditions have remained in place.
- Short range forecasts to June 20 indicate the maintenance of moderate rainfall deficits across most of the country. Impacts are judged to be light, given the usual length of the rainfall season in the Equatorias, while initial rainfall deficits in more northern areas are also of little significance for now. The long-range outlook is for a wetter than average core rainfall season (July-September), so no problems are foreseen at this stage, though continued monitoring is required.
- On the flooding front, rainfall in the basins of the Great Lakes has been variable, with wetter than average conditions south of Lake Victoria but drier conditions within Uganda. The long-range outlook is for significantly wetter than usual conditions across South Sudan and in the Great Lakes region, which may lead to enhanced inflows into South Sudan and an increase in flood extent.
- The current flood extent by end of May 2022 remains the largest ever observed for this time of the year. Areas newly flooded during 2021 in Unity and Upper Nile, remained flooded through the dry season. There was minimal change in the peak flood extent reached in February and new, but localized and transient, flood patches are now appearing as a result of the first seasonal rains.
- Great Lake levels which dropped from their 2021 records but had stabilized way above the long-term mean, are now showing signs of increase again. River levels along the White Nile, while still decreasing to their usual seasonal minima, have remained much above historical mean values and are expect to rise within the next month or so. The rivers Sobat (coming into Upper Nile) and Lol (North Bahr-el-Ghazal) have remained moderately above average. Their evolution will depend on rainfall during the coming months in Ethiopia (Sobat) and within South Sudan and Chad/CAR (Lol).
- The wetter than average outlook for South Sudan and the upper Nile Basin, coupled with likely Great Lake level rises and elevated White Nile river levels within South Sudan, imply that the most likely scenario is for a maintenance and potential further expansion of wetland extent throughout the second half of 2022.

The 2022 Rainfall Season

South Sudan: The 2022 Rainfall Season So Far



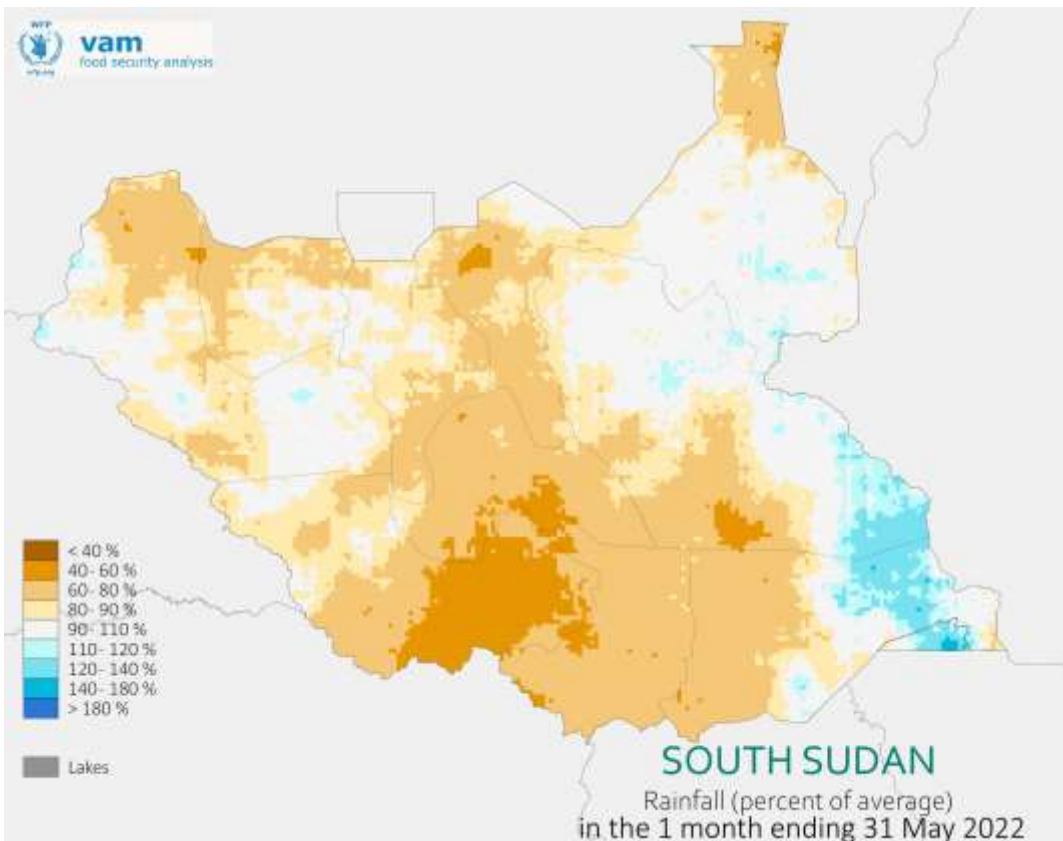
Pronounced rainfall deficits have affected most of the Great Equatoria regions of South Sudan in the early stages of the 2022 rainfall season.

Late April to mid May (map top left) was particularly dry in these regions which got only less than half of the usual rainfall. This may have delayed planting in places or led to unfavourable conditions for early crop development.

In late May (map top right), wetter than average conditions extended over most of East and Central Equatoria and southern Jonglei. The rest of the country had below average rainfall.

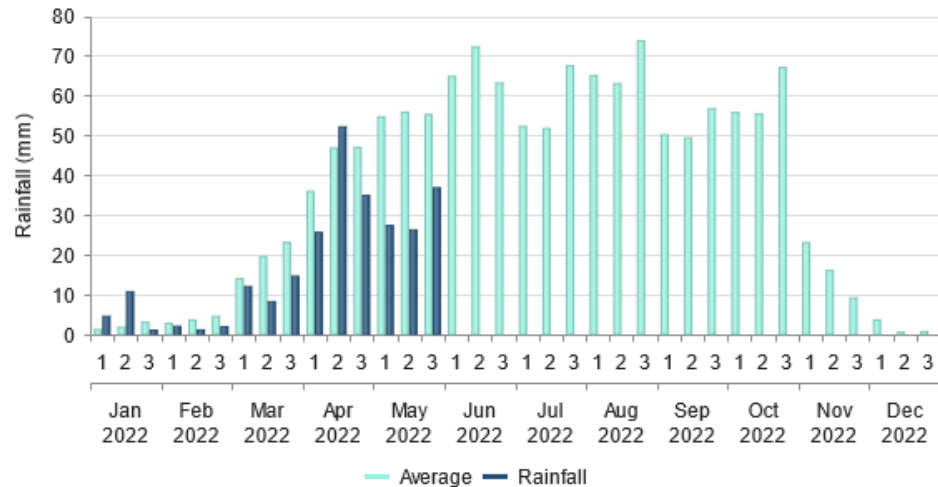
Overall, the month of May (map below left) was characterized by drier than average conditions in Central Equatoria, parts of Western and Eastern Equatoria, Lakes and southwest Jonglei.

For now, impacts are judged to be light, given the usual length of the rainfall season in the Equatorias, that allows for at least two crop cycles. Elsewhere, in more northern areas, it is still early days, and preliminary deficits can easily be overcome with the heavier rainfall amounts that will follow in the coming months. The long-range outlook (see ahead) is for a wetter than average core season, so no problems are foreseen at this stage.



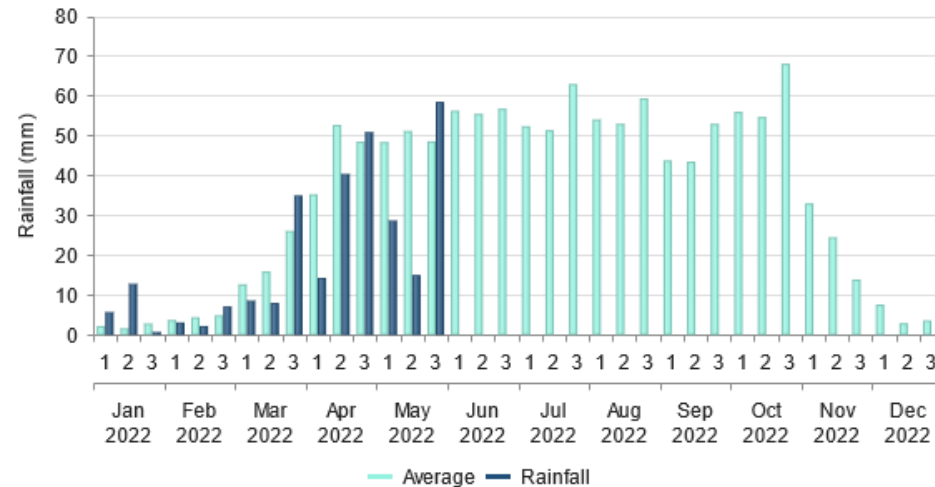
South Sudan: The 2022 Rainfall Season - Locations

South Sudan - Western Equatoria - Maridi - 2022



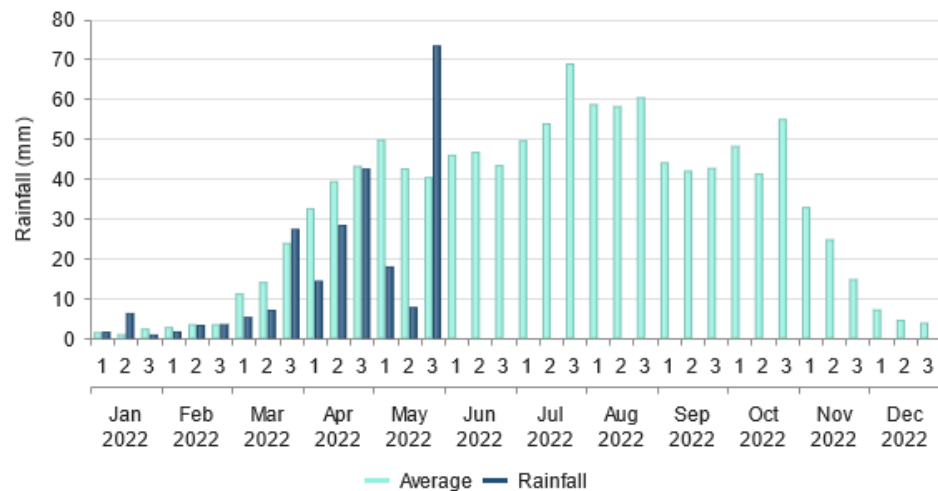
© WFP-VAM, CHIRPS/UCSB

South Sudan - Central Equatoria - Lainya - 2022



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South Sudan - Eastern Equatoria - Torit - 2022



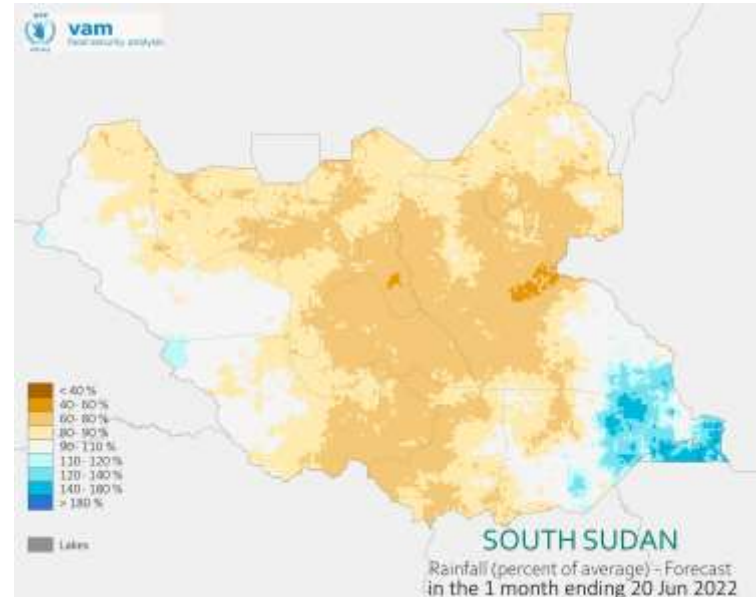
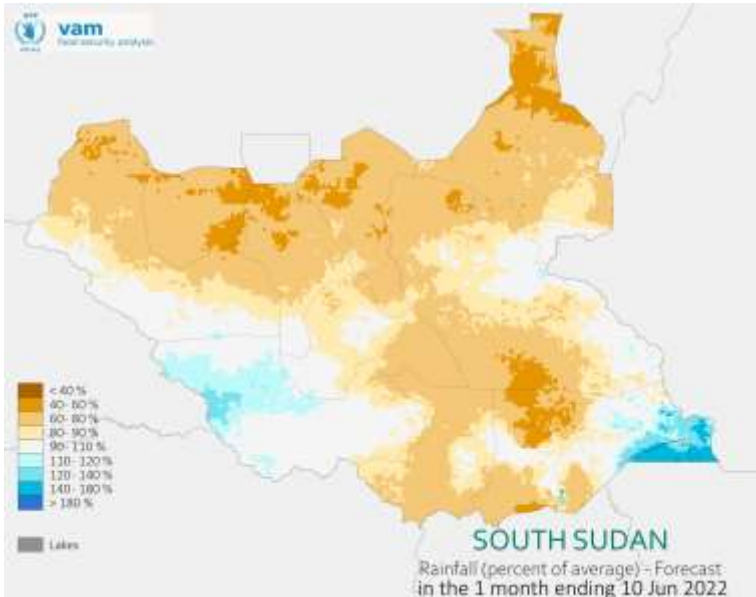
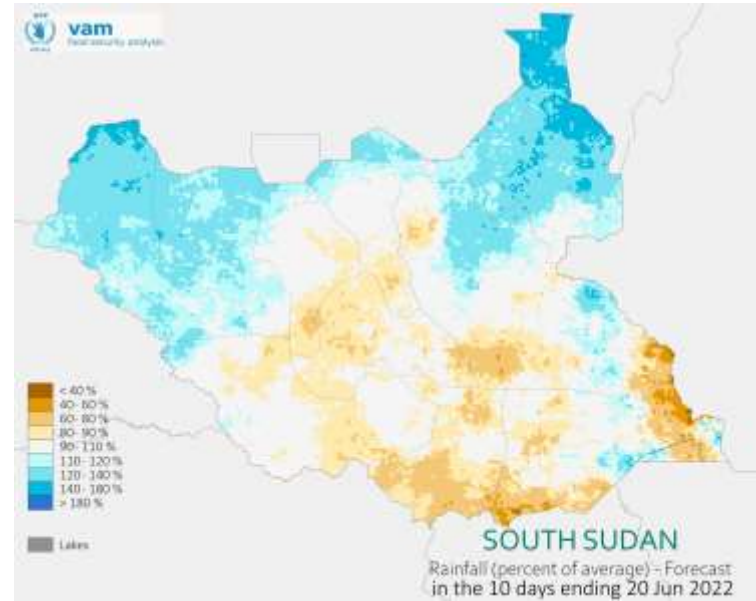
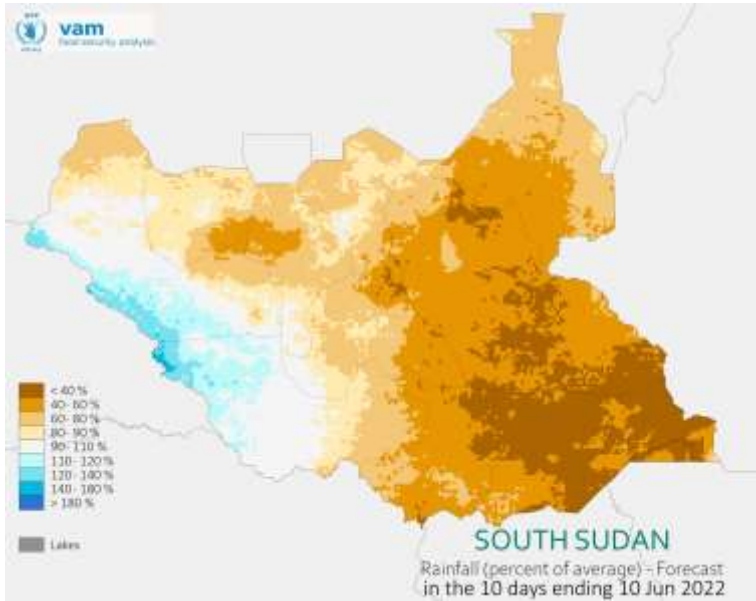
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These charts show the current rainfall values (dark blue bars) and long term mean rainfall (light blue) for selected counties in the Great Equatoria region, where the rainfall season is now well under way.

In Western Equatoria (chart top left), an on-going drier than average period started in late April; this is more pronounced in the counties closer to Central Equatoria, where conditions for early crop development are less than favourable.

In Central Equatoria and western areas of East Equatoria (charts above right and lower left), the drier than average period has been shorter, lasting for the first three weeks of May, with heavy rainfall in late May. The length of the rainfall season leaves plenty of time for a continued recovery.

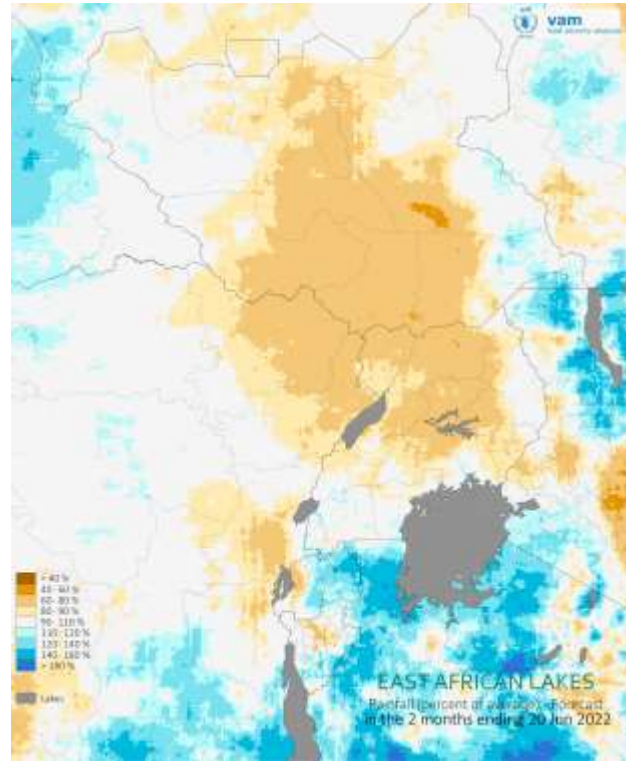
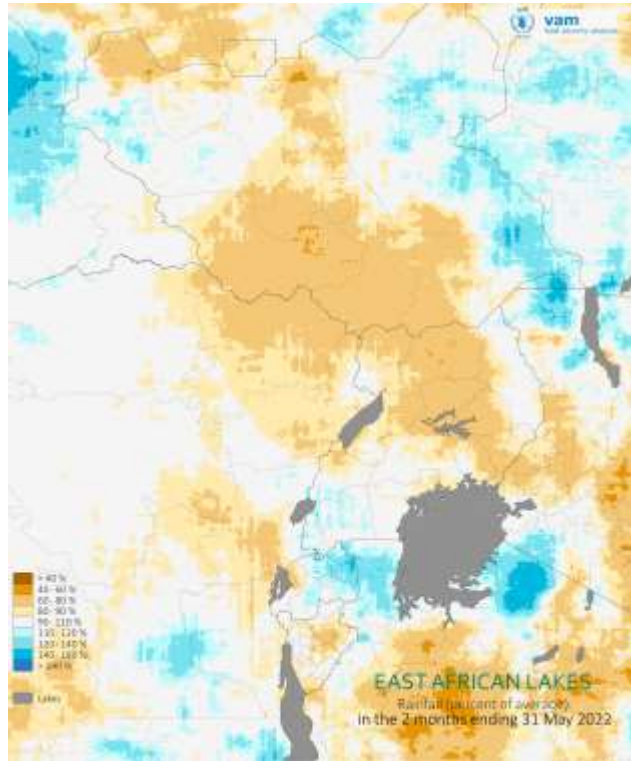
South Sudan: The 2022 Rainfall Season – Short Range Outlook



According to short range forecasts, much drier than average conditions are expected in early June, affecting the eastern half of the country, in particular in East Equatoria (map top left). This should result in monthly rainfall deficits extending across the northern third of South Sudan (map below left).

In mid June, conditions are expected to improve due to enhanced rainfall in the northern areas of the country (map top right), leading to a reduction in the monthly deficits.

South Sudan: River Basin Rainfall and Seasonal Forecasts

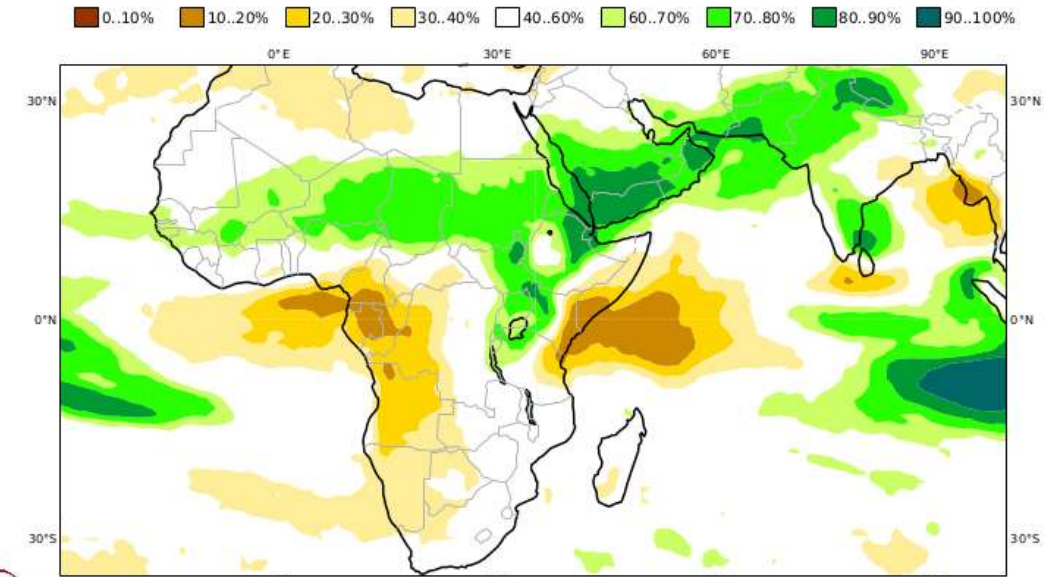


April-May 2022 rainfall in the East African Great Lakes region as a proportion of the long-term average (left). Same, but extended to June 20 with short range forecasts.

Blue shades for above average rainfall, orange shades for below average rainfall

Drier than average conditions have prevailed over the Great Lakes basin in the past two months (map above left). However, wetter conditions are expected to follow until at least mid to late June (map above right), mainly in the southern areas of these basin; parts of the basin within Uganda should remain with below average rainfall.

C3S multi-system seasonal forecast ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA/ECCC
 Prob(precipitation > median) JAS 2022
 Nominal forecast start: 01/05/22
 Unweighted mean



Seasonal forecast for July-September rainfall for the Africa.

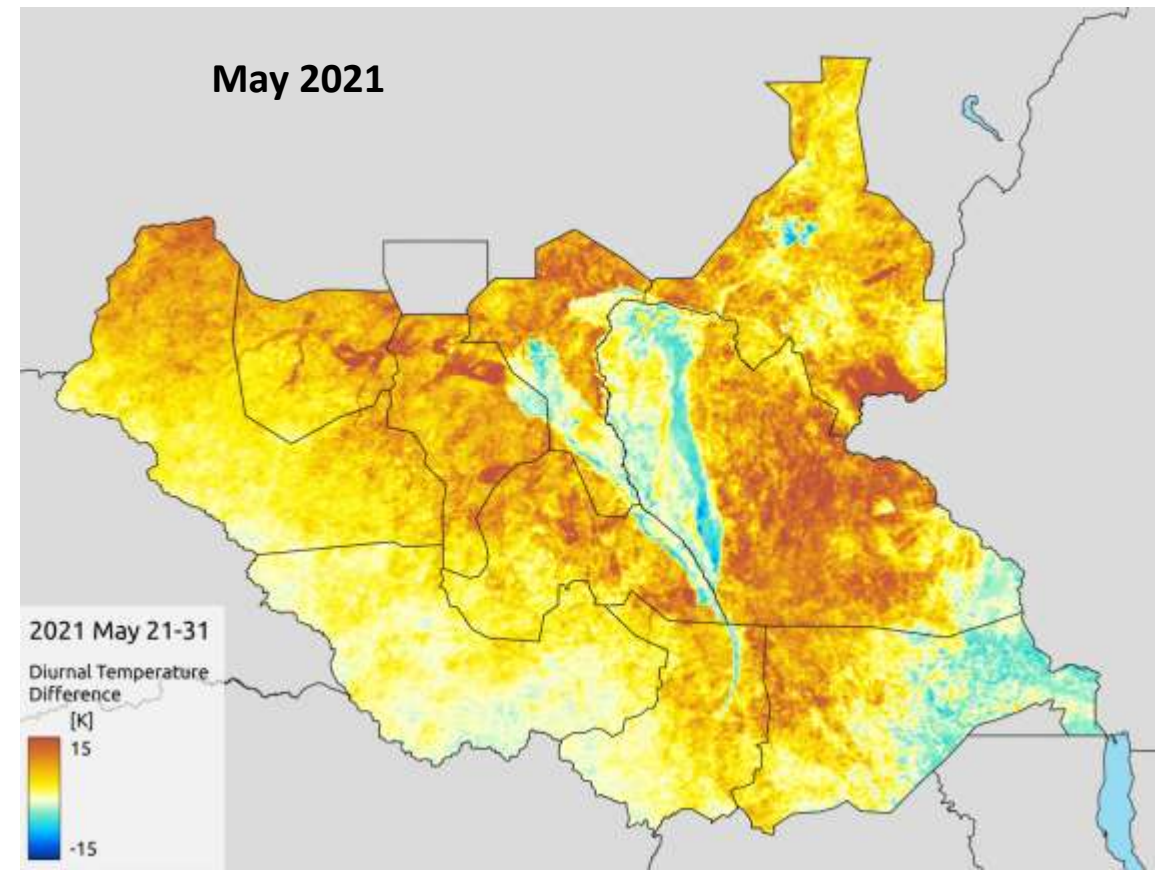
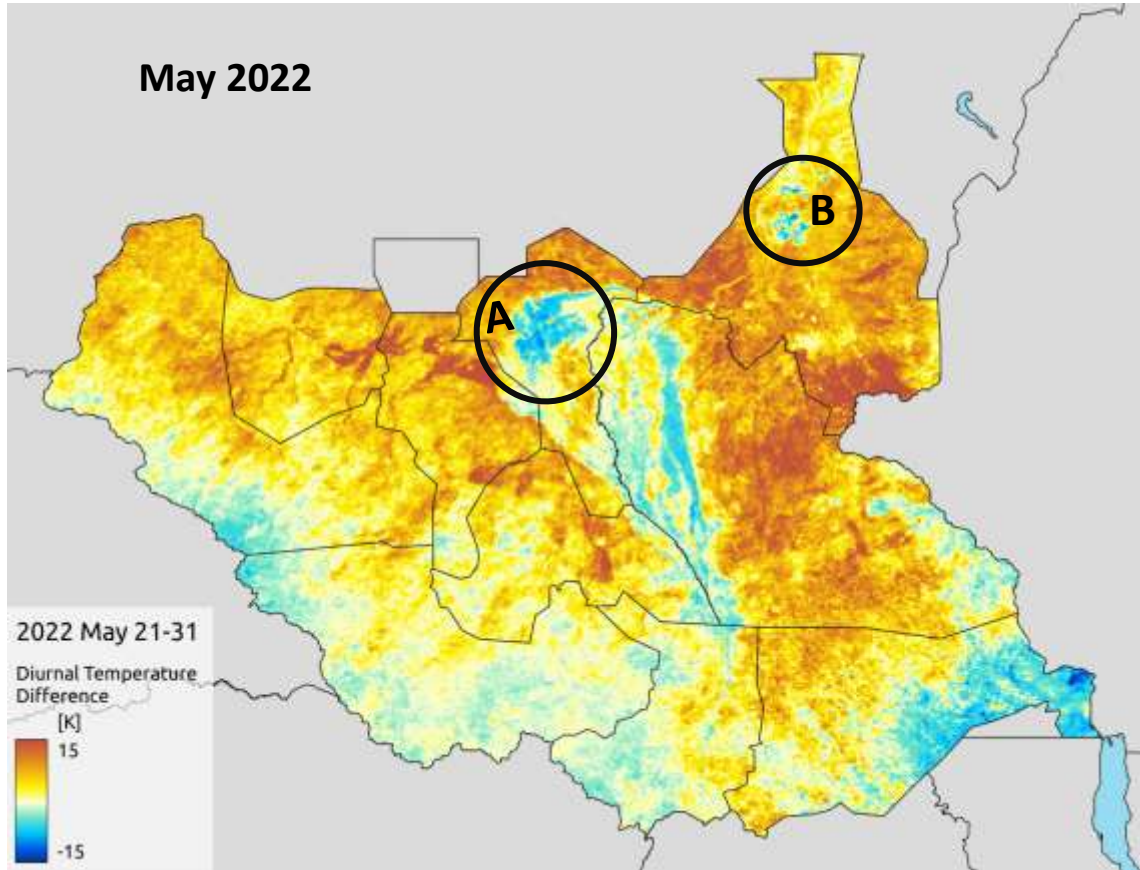
Green shades for above usual rainfall, orange shades for below usual rainfall

Seasonal rainfall forecasts for July to September 2022 point to wetter than average conditions in South Sudan, especially in the eastern parts of the country; these are expected to extend to cover the Great Lakes basin.

If these forecasts verify, flooding tendencies from heightened river levels and lake overflow will be reinforced and may drive sustained flooding in South Sudan in the near- and medium-term future.

Flood Extent and Duration

South Sudan: Current Flood Extent



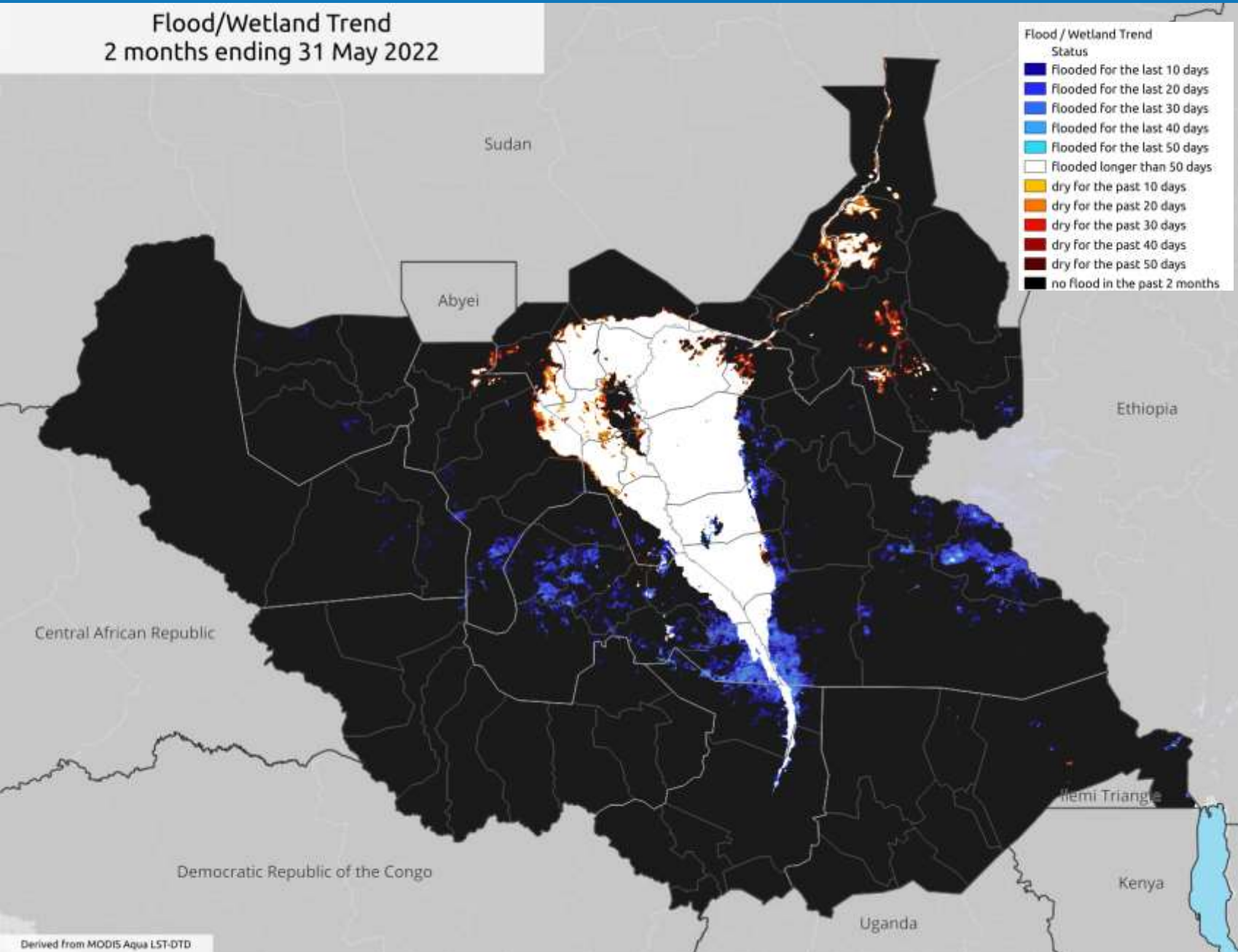
Diurnal temperature amplitude anomaly for mid May 2022 (left) and 2021 (right). Shades of blue indicate wetter than usual conditions, while shades of orange indicate drier conditions than usual)

The current flood extent in late May 2022 remains the largest ever observed within the available record for this time of the year. There are additional newly flooded areas compared to the extent of one year ago, in the northern parts of Unity State (A) due to exceptional White Nile river levels throughout the dry season and an area around Melut (Upper Nile) due to excess water from the river Baro in the southeast. Persistent flooding in area A had never been observed before, especially around this time of the year.

The rainfall season has now started, and flood extent is expected to increase first through rainfall and later through increased river levels.

South Sudan: Flood Extent Dynamics

Flood/Wetland Trend
2 months ending 31 May 2022



From April to May, the extent of flooded / wetland areas continued to decline across most of South Sudan.

The most noticeable decrease (orange shades in the map) is observed in Upper Nile, northern parts of Jonglei and central parts of Unity State.

The massive flood area in the centre of the country has only seen minimal decrease at its edges. Historically, the core area of flooding is more resilient.

On the other hand, transient, localized flooding and surface water accumulation (areas in blue shades) are noticeable in the central parts of the country, as well as in eastern parts of Jonglei bordering Ethiopia.

Map reveals recent changes in the extent of flood / wetland areas derived from MODIS land-surface temperature data.

Colour codes are as follows:

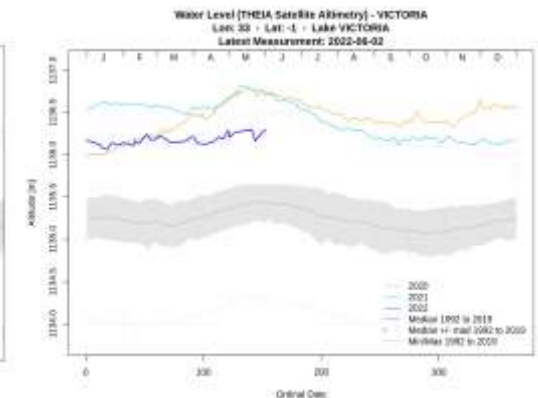
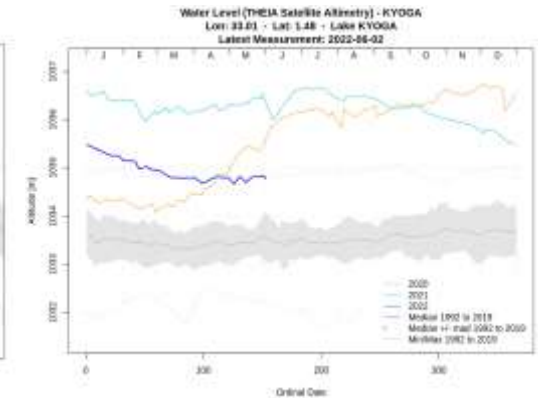
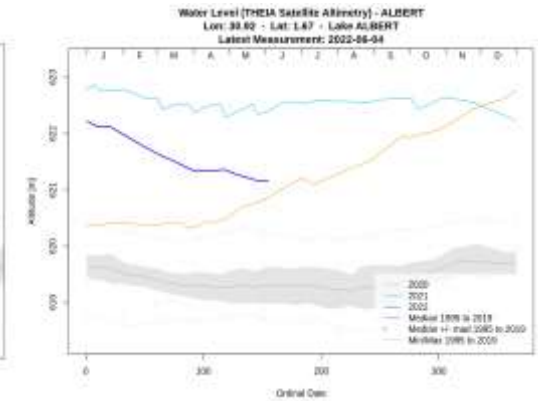
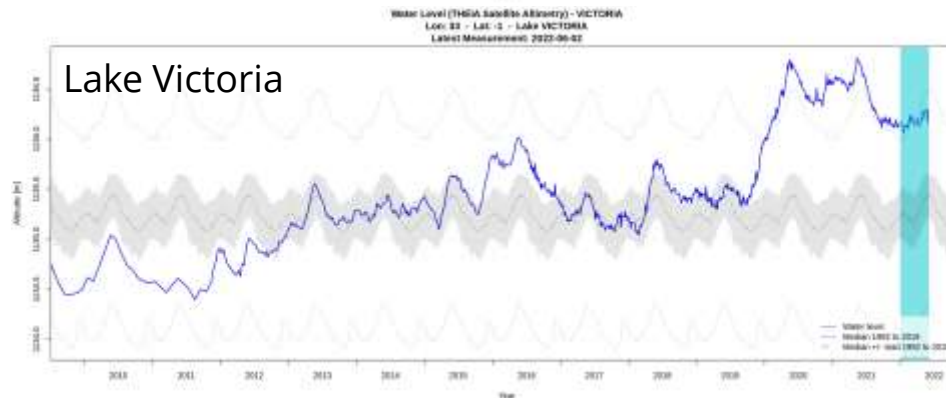
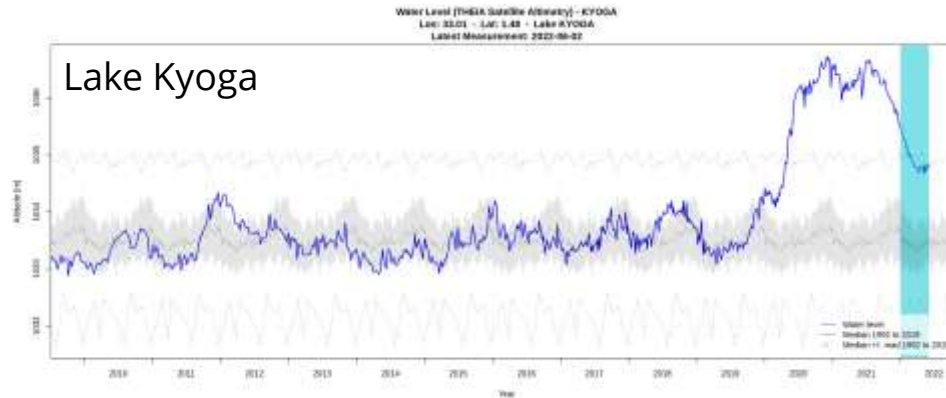
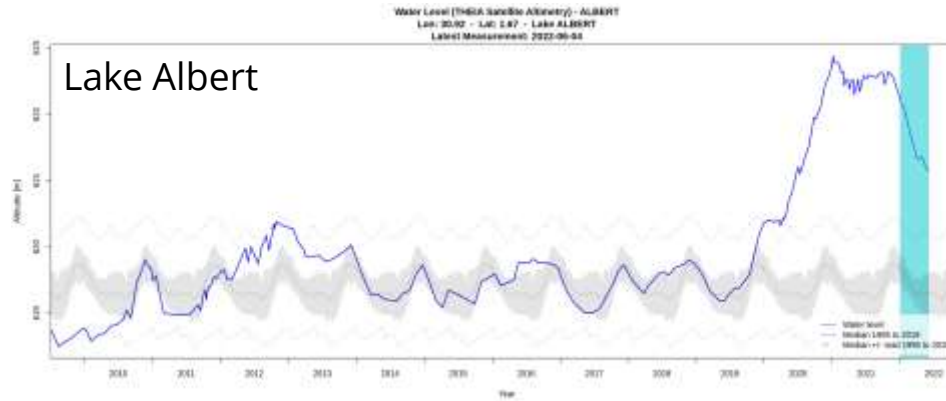
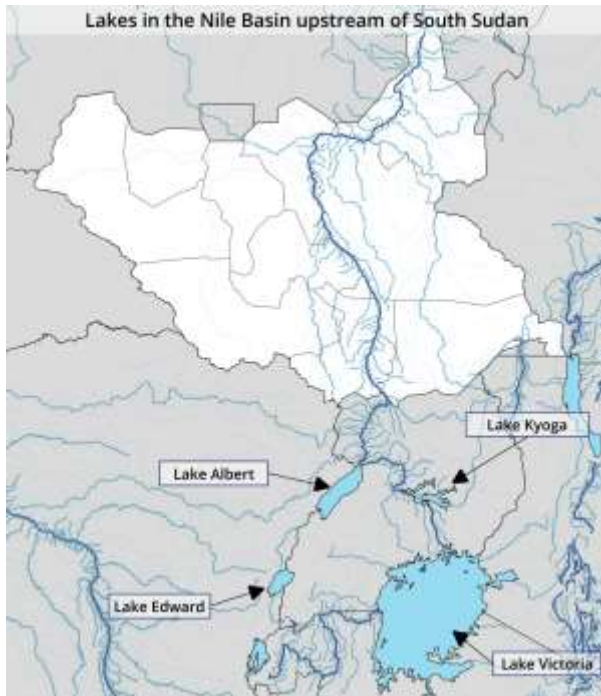
- BLUE:** Areas of recent flood / wetland expansion in the past 2 months
- WHITE:** Areas continuously under flood/wetland status for at least the past 2 months
- ORANGE:** Areas previously flooded, that have become dry in the past 2 months

Lake Levels - Satellite Altimetry

Lake Victoria levels reached a peak in mid 2021 and declined after to a stable level since October 2021. Recently, levels have increased slightly again and remain well above the long-term average though below the peaks of 2020 and 2021.

Both Lake Kyoga and Lake Albert levels have also fallen from their mid 2021 peaks but show signs of increase again. Both also remain well above their long-term average levels.

These recent increases may drive a continuation of the flooding from mid to late 2022, in particular in case of wetter than average conditions in the lake's basin in accordance with the latest seasonal forecasts.

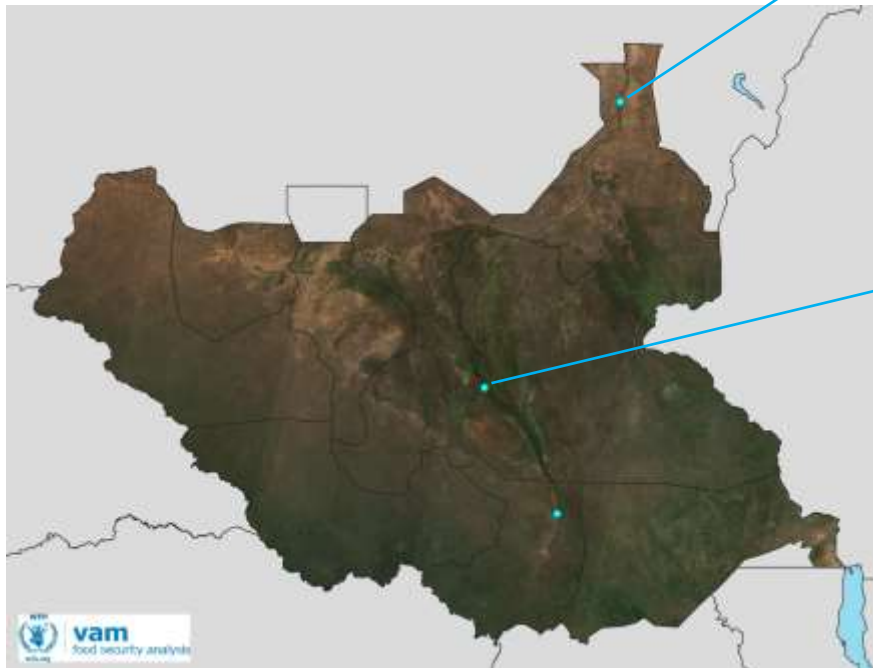
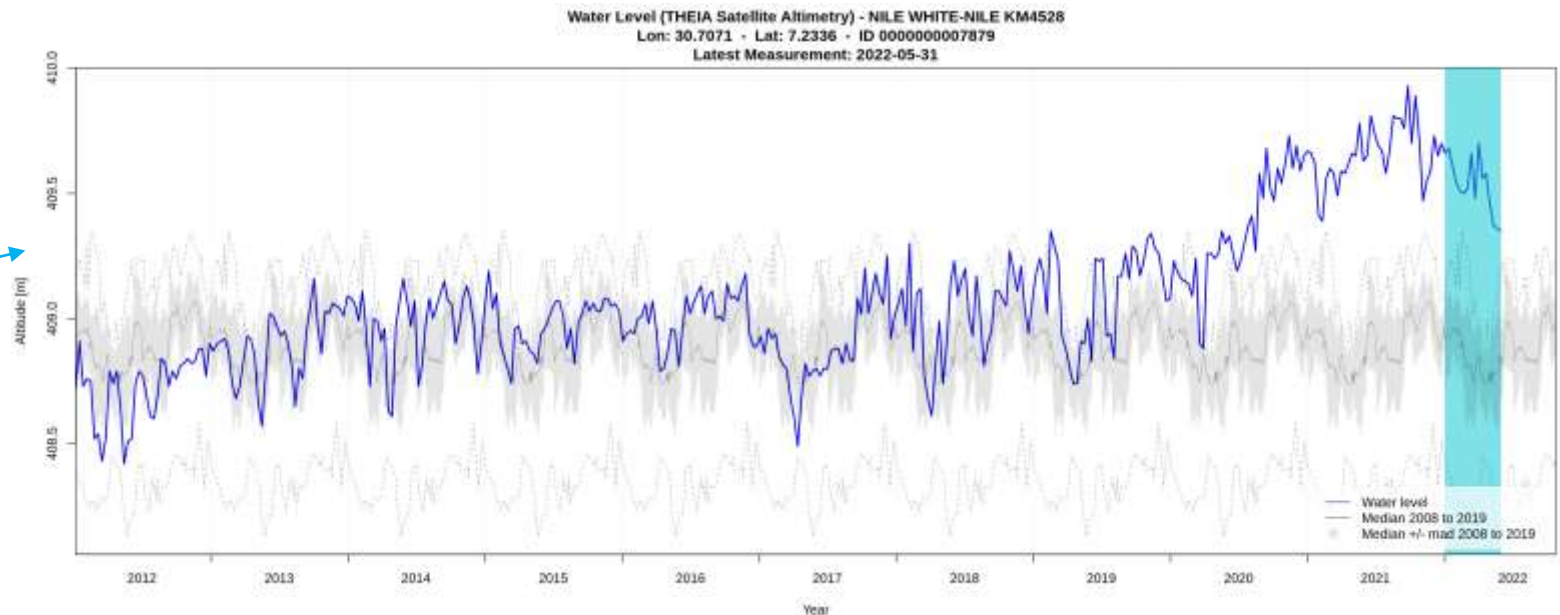
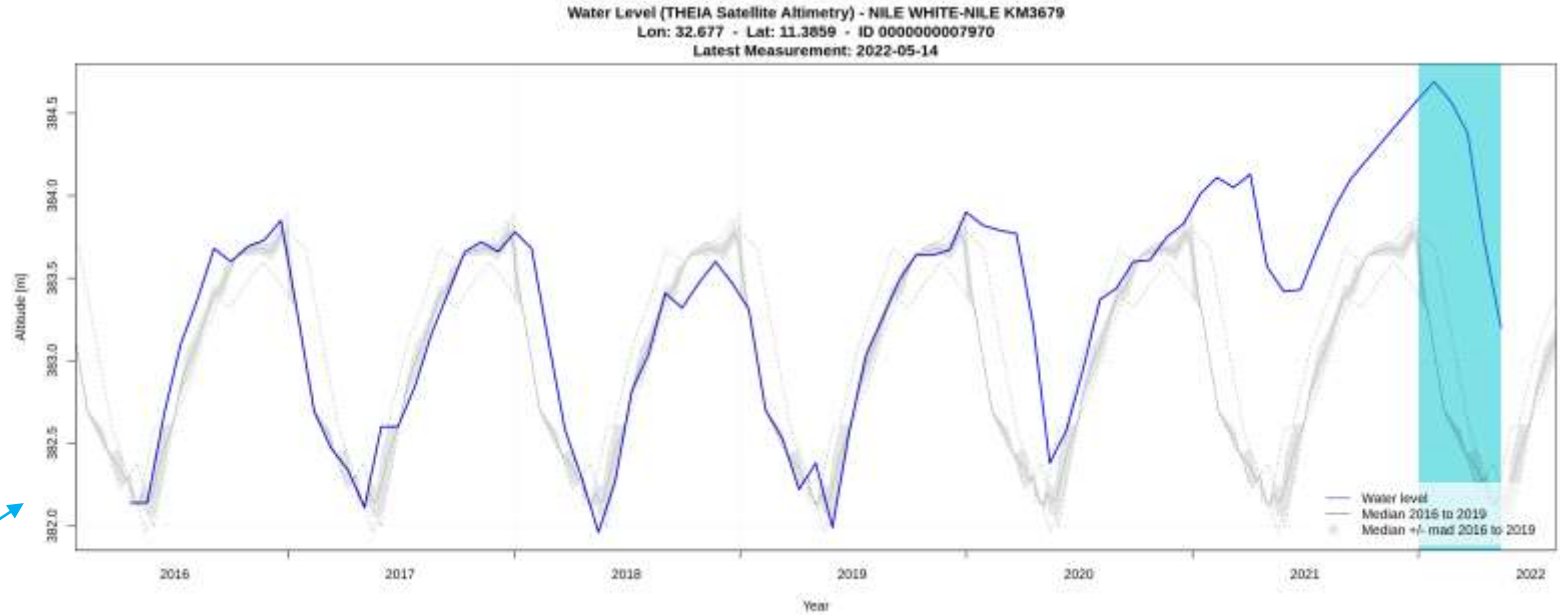


River Levels: White Nile

The White Nile has remained at record levels since late 2019, at the onset of the South Sudan floods. In 2021, the usual seasonal low was not even observed, and levels in early 2022 remain at an all-time record.

In the more southern stretches of the White Nile, levels also remain at record levels, even if a bit off the late 2021 peaks.

If above average rainfall prevails, we expect river levels to remain at historical highs and maintain, and potentially further increase, current flood extents.



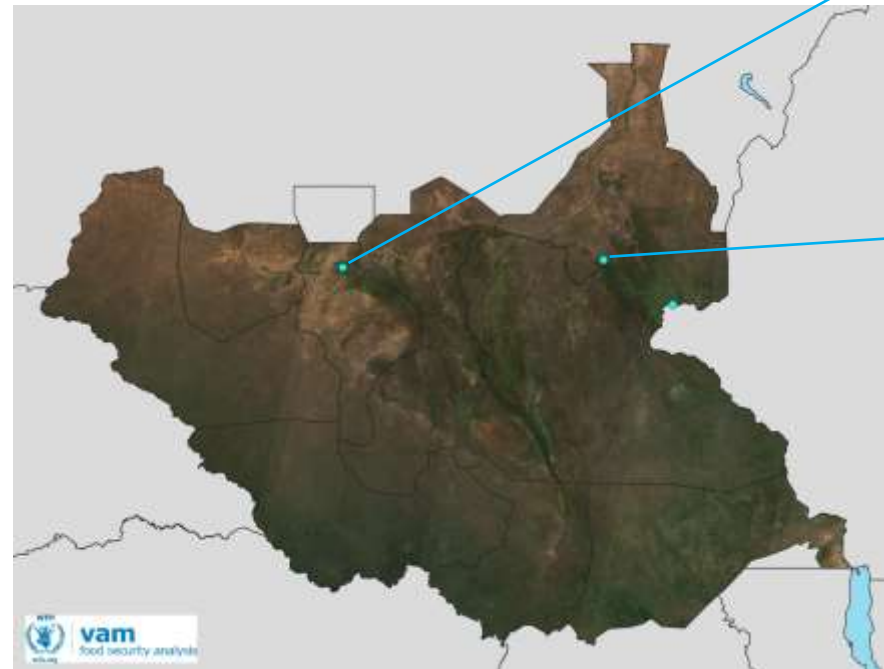
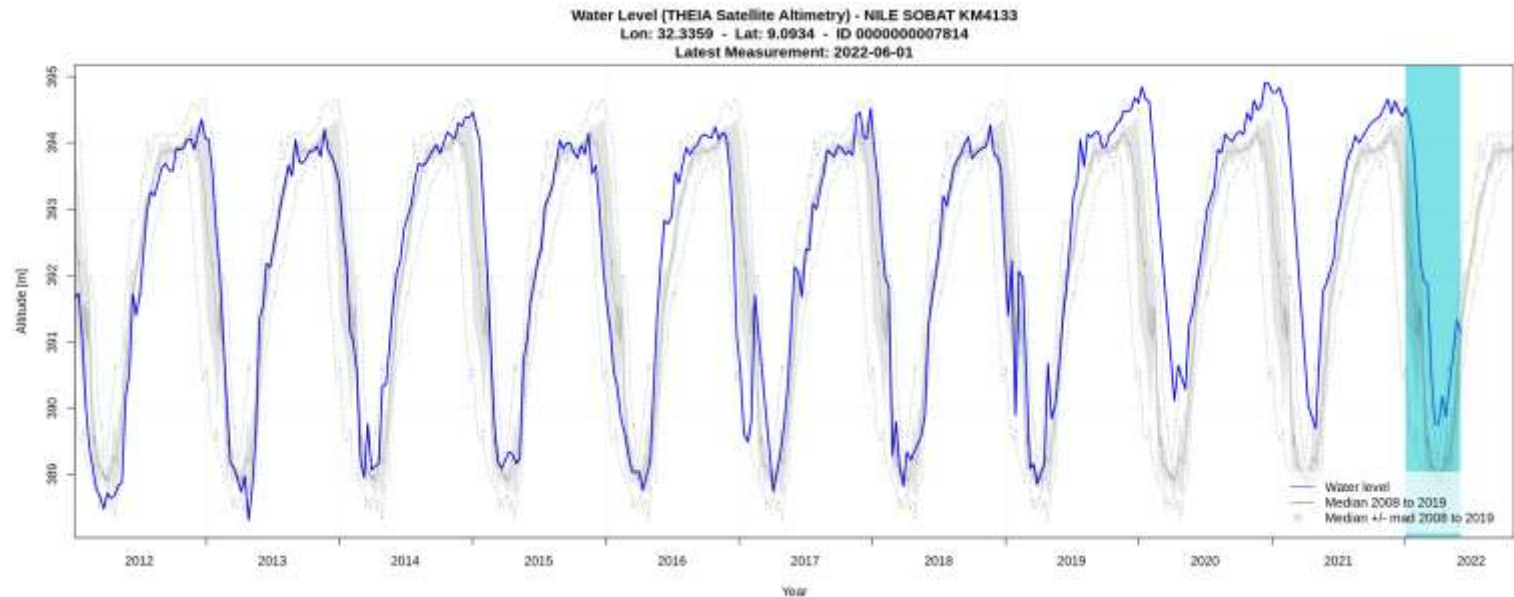
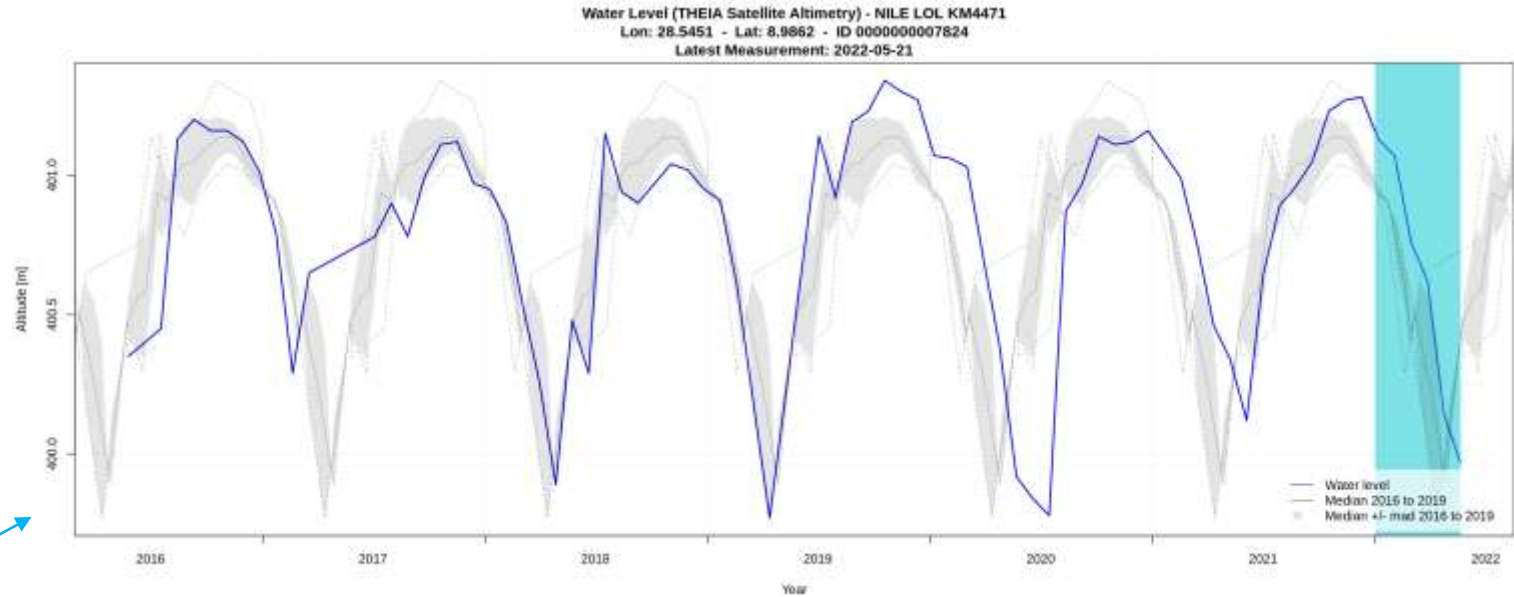
River Levels: Sobat-Baro and river Lol

Since 2019, levels of the Sobat and Baro have also been higher than the long-term mean but not excessively so.

Hence, flooding caused by these rivers (in Upper Nile and parts of Jonglei) although unusual in extent does not have the permanence of the flooding along the White Nile.

Both river levels are now increasing after the seasonal minimum, following onset of rains in Ethiopia.

In the Bahr-el-Ghazal, levels of the river Lol are still around the seasonal minimum but should start its seasonal increase fairly soon.



An aerial photograph of a river delta, showing a central river channel that branches out into a complex network of smaller channels and floodplains. The water in the channels is a deep blue, while the surrounding land is a mix of light brown and tan, indicating a semi-arid or coastal environment. The overall scene is captured from a high angle, looking down at the river's mouth.

For further information please contact:

sebastian.boeck@wfp.org

rogerio.bonifacio@wfp.org

paulina.bockowska@wfp.org

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