

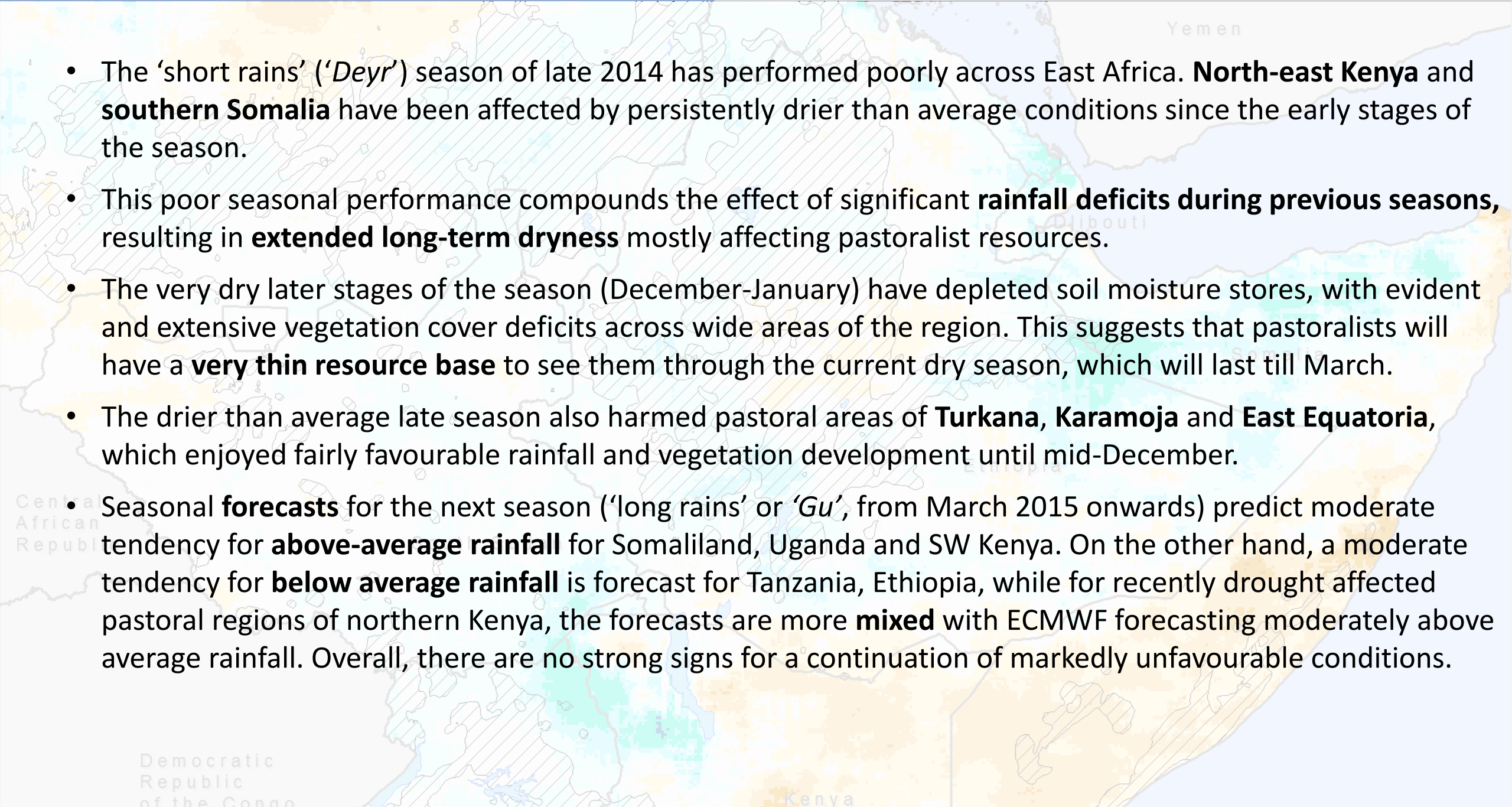


# East Africa

## The 2014-2015 Rainfall Season (Short Rains)



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- The ‘short rains’ (*‘Deyr’*) season of late 2014 has performed poorly across East Africa. **North-east Kenya** and **southern Somalia** have been affected by persistently drier than average conditions since the early stages of the season.
- This poor seasonal performance compounds the effect of significant **rainfall deficits during previous seasons**, resulting in **extended long-term dryness** mostly affecting pastoralist resources.
- The very dry later stages of the season (December-January) have depleted soil moisture stores, with evident and extensive vegetation cover deficits across wide areas of the region. This suggests that pastoralists will have a **very thin resource base** to see them through the current dry season, which will last till March.
- The drier than average late season also harmed pastoral areas of **Turkana, Karamoja** and **East Equatoria**, which enjoyed fairly favourable rainfall and vegetation development until mid-December.
- Seasonal **forecasts** for the next season (*‘long rains’* or *‘Gu’*, from March 2015 onwards) predict moderate tendency for **above-average rainfall** for Somaliland, Uganda and SW Kenya. On the other hand, a moderate tendency for **below average rainfall** is forecast for Tanzania, Ethiopia, while for recently drought affected pastoral regions of northern Kenya, the forecasts are more **mixed** with ECMWF forecasting moderately above average rainfall. Overall, there are no strong signs for a continuation of markedly unfavourable conditions.

# Current situation and near-term perspectives

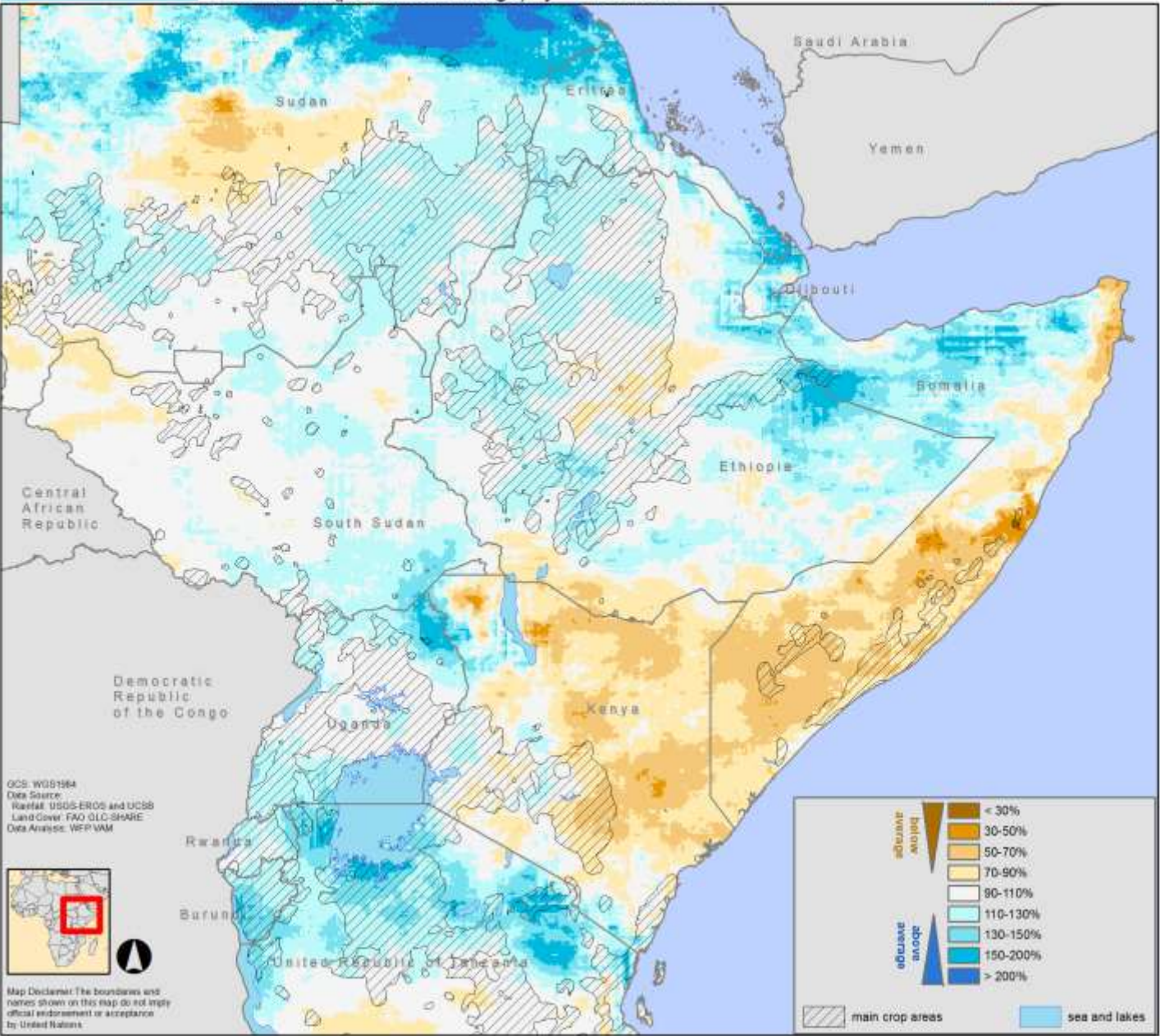


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20 Feb 2015

EASTERN AFRICA  
Total Rainfall (percent of average) by 20 Feb 2015



## Seasonal rainfall performance

The 2014-2015 rainfall season ('short rains' or 'Deyr') has been mixed across East Africa.

In the eastern half of Kenya and Somalia (except for Somaliland), drier than average conditions were the norm during the season. In Kenya, this has mostly affected semi-arid pastoral lands, while in Somalia it has also impacted the major agricultural regions.

These pastoral regions already experienced a drier than average 'long rains' (or 'Gu') season from February to June 2014, as well as rainfall deficits in the previous 'short rains' season a year ago. This situation of long-term persistent dryness has put local livelihoods under considerable stress, especially in the semi-arid pastoral lands of Kenya and Somalia.

Karamoja, Turkana, south-west Ethiopia and south-eastern South Sudan enjoyed a fairly favourable season until late November. However, there was pronounced dryness in December and January.

Although these regions still show an overall seasonal rainfall surplus, they entered the current dry season with depleted soil moisture levels and below-average vegetation cover.

This has also affected southern Kenya and northern Tanzania, where December–January is the wettest period of the season and where vegetation quickly dropped to below-average levels.

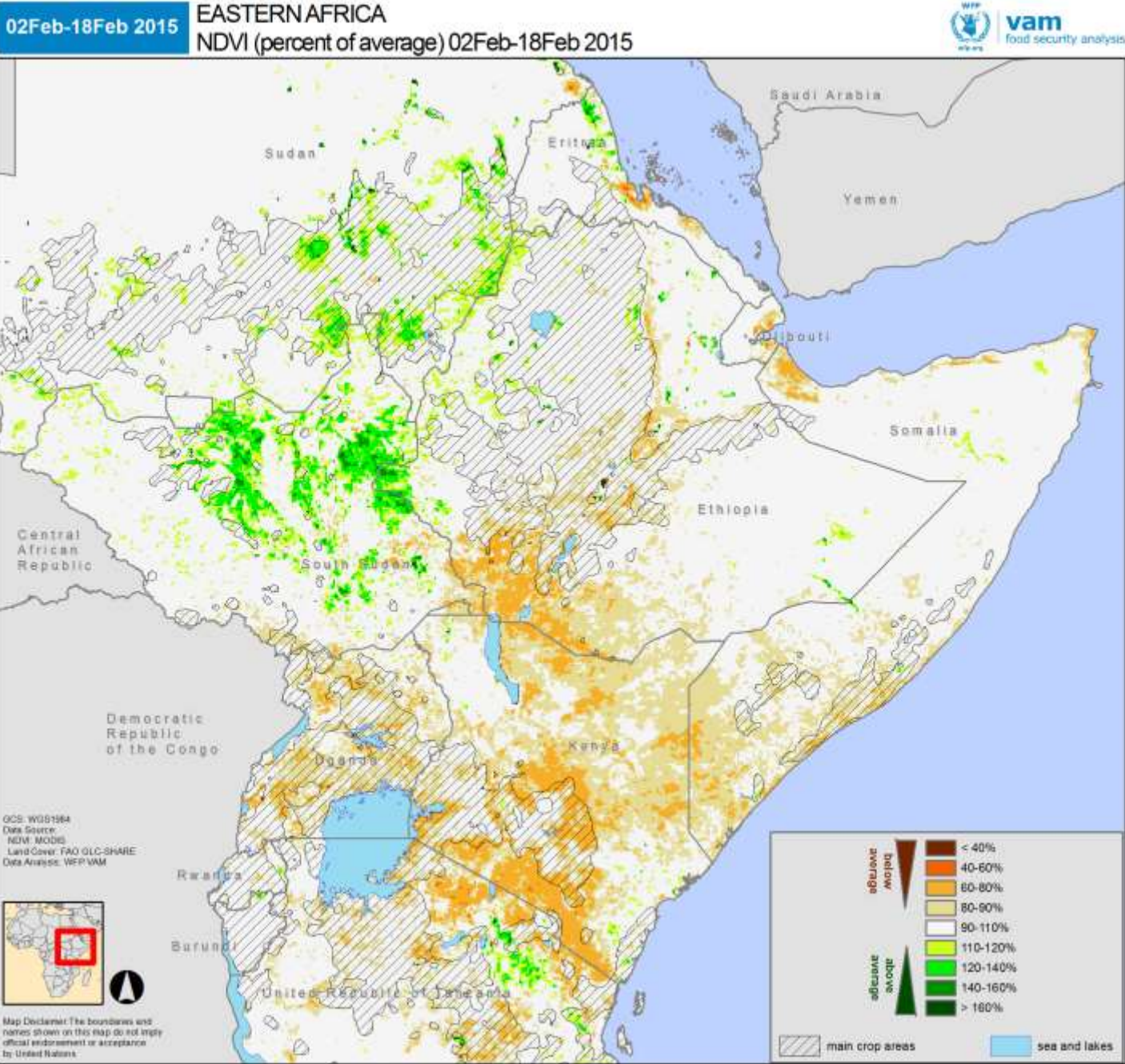
Total rainfall from 1 August 2014 to 10 February 2015 as a percentage of the 20-year average.

Hashed pattern indicates main agricultural areas.

Brown shades indicate below-average rainfall; blue shades indicate above-average seasonal rainfall.



# EAST AFRICA SEASONAL ANALYSIS – 2014/2015



## Current vegetation status

Early February vegetation levels form the basis for the upcoming new 'long rains' or 'Gu' growing season. This season will last from early March to mid-May across Kenya, Somalia and south-east Ethiopia, as well as parts of Tanzania and Uganda. Other areas such as South Sudan and north-west Ethiopia have entered the dry season already.

As seen on the map, vegetation is currently far below average in most of the 'long rains' areas. This is particularly noticeable across Kenya (except for the highlands), south-west Ethiopia and southern Somalia.

In these areas, the situation is likely to create poor to very poor grazing conditions for pastoralist livelihoods, which now have a very thin resource base to face the short dry season. No improvement in these conditions is expected until significant rains return. On average, this happens from mid-to-late March (Kenya) or from early-to-mid April in Somalia and south-east Ethiopia.

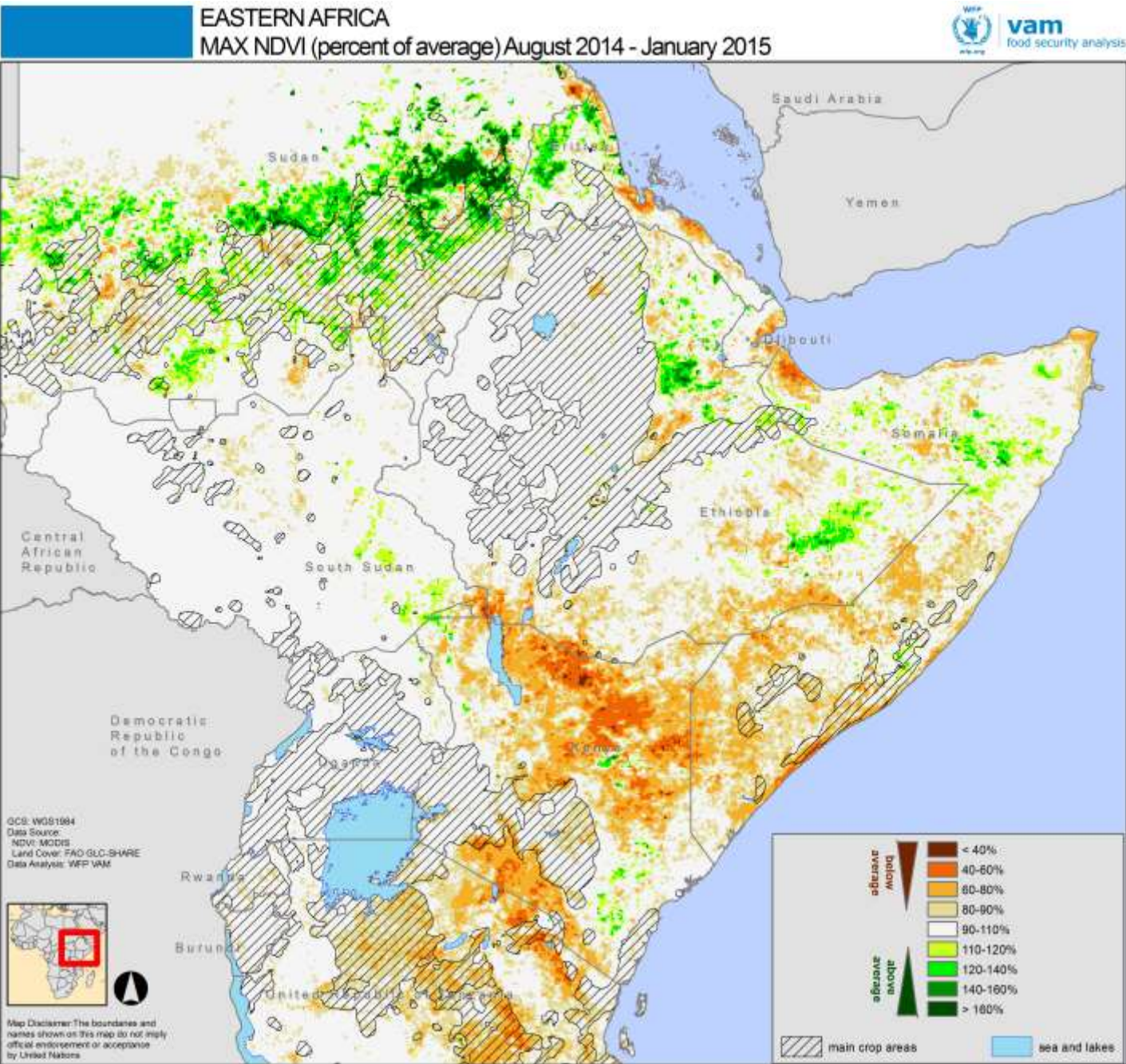
In contrast, Turkana and Karamoja had a good first half of the season with better than average vegetation conditions until mid-December. However, December and January were much drier than average and conditions deteriorated – a situation that also affected parts of Eastern Equatoria in South Sudan and the far south-west of Ethiopia.

*Vegetation index in early February 2014 as a percentage of the 12-year average.*

*Hashed pattern indicates main agricultural areas.*

*Orange shades indicate below-average vegetation; green shades indicate above-average vegetation*





**Overall seasonal (August–January) vegetation status**

To assess seasonal performance, the maximum vegetation level reached between August 2014 and January 2015 is compared to the average of the preceding 12 years.

The ‘short rains’ areas of East Africa had fairly poor vegetation development in 2014/2015, with seasonal peak levels far below average. This is very noticeable in the northern half of Kenya (especially the north-east), but also in its southernmost areas. The impact has mostly been confined to pastoral areas.

Poor conditions also extended across pastoral and agricultural areas of Somalia and into southern Ethiopia. Other areas affected include the Djibouti-Somalia border and southern Eritrea. In Tanzania, poor conditions also affected croplands in the centre-north of the country.

In the pastoral areas of Kenya, these features are not only a direct response to poor rains during the current season: they also reflect the long-term dryness that has persisted in these areas for almost a year.

*Maximum vegetation index from August 2014 to January 2015 as a percentage of the 12-year average.*

*Hashed pattern indicates main agricultural areas.*

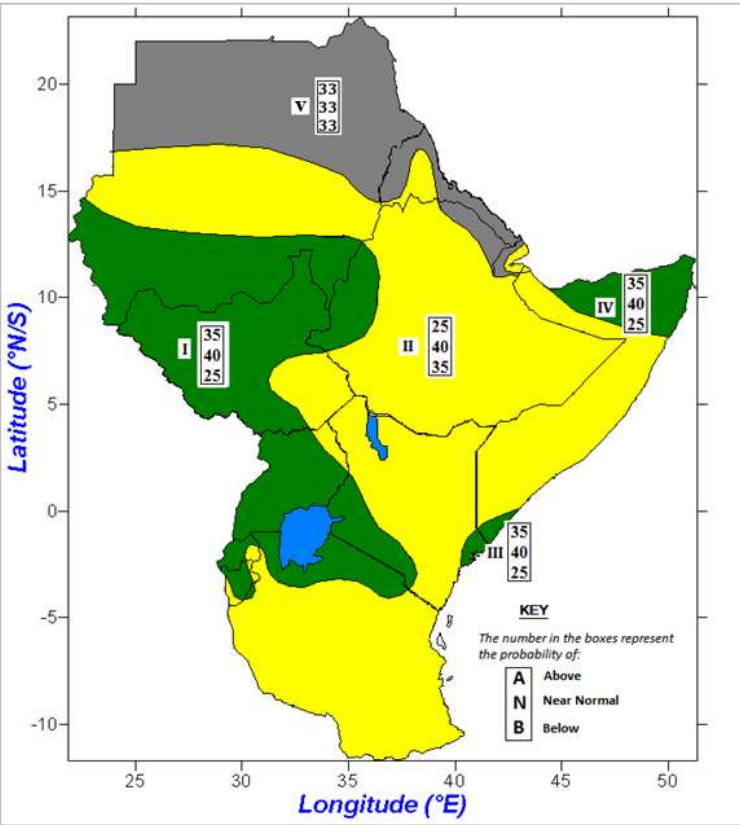
*Orange shades indicate below-average vegetation; green shades indicate above-average vegetation.*

Forecasts for the coming growing season

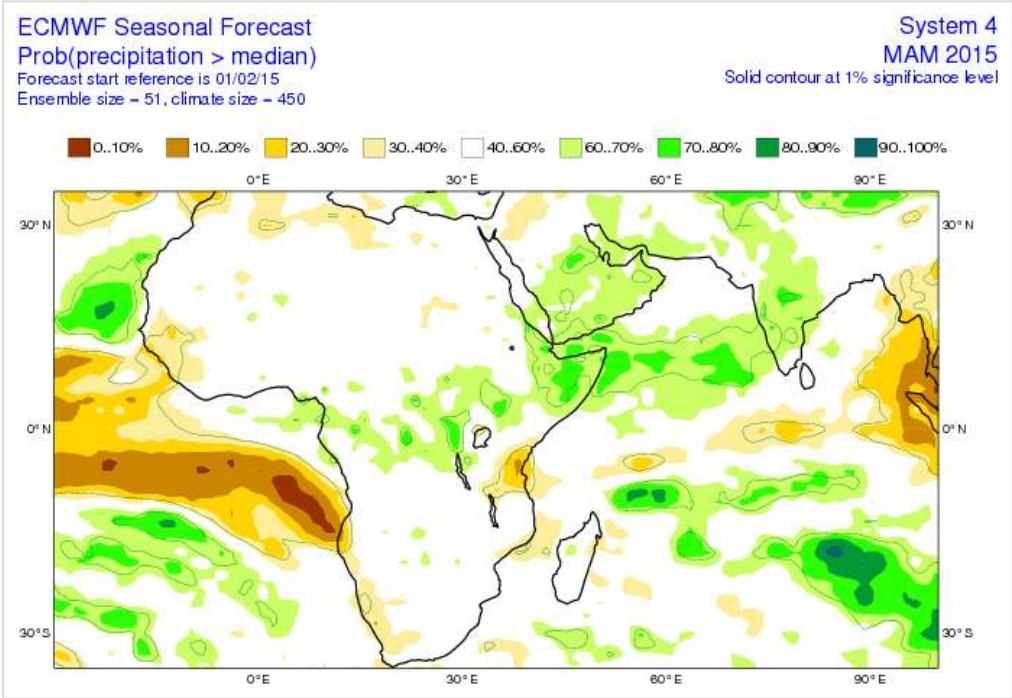
Forecasts for **March to May** rainfall for the Greater Horn of Africa (covering most of the ‘long rains’ or ‘Gu’ rainfall season) have been just issued. The GHACOF (Regional Climate Outlook Forum) forecasts on average rainfall with a tendency for above average rainfall for Somaliland, most of South Sudan, Uganda and SW Kenya and NW Tanzania. Elsewhere (Kenya, Tanzania, Ethiopia and Somalia), the forecast indicates on average rainfall with a tendency for below average rainfall.

Model forecasts from the European Centre for Medium Weather Forecasts (ECMWF) indicate above average rainfall for most of Somalia and Djibouti in broad agreement with the GHACOF forecast. Elsewhere, ECMWF forecast is somewhat more optimistic with a slight tendency for above rainfall in northern Kenya. It also flags Tanzania as likely to have a drier than average period.

Given the probabilities issued by the GHACOF forecasts, differences in these forecasts are in line with what would be expected from using different methodologies. For areas under stress highlighted in this publication, the situation may go either way. At least, there are no strong signs for a continuation of markedly unfavourable conditions.



Forecast for the March-May 2015 rainfall (ICPAC Climate Outlook Forum) : Numbers in boxes refer to probability of above average (top), on average (middle) and below average (bottom) rainfall. Source: GHACOF



Forecast for the March-May 2015 rainfall: Probability of MAM rainfall exceeding the usual amount (long-term median). Green shades – wetter than usual conditions more likely; yellow/browns – drier than usual conditions more likely. Source: ECMWF

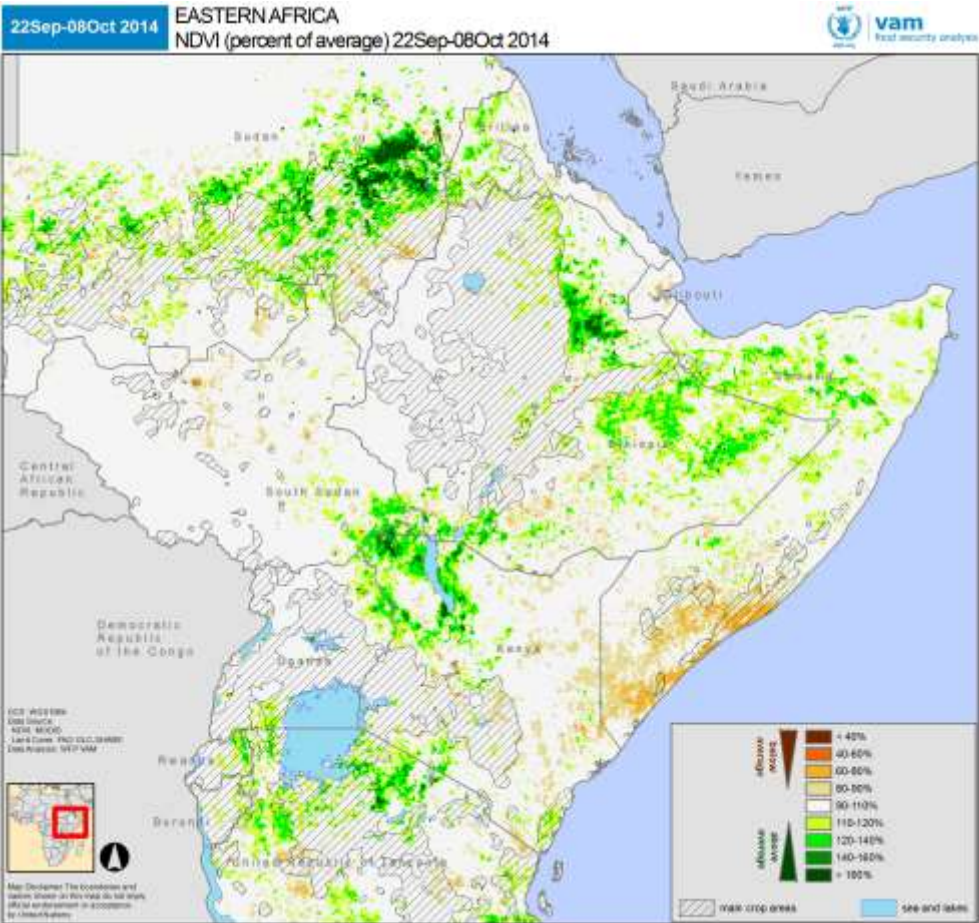
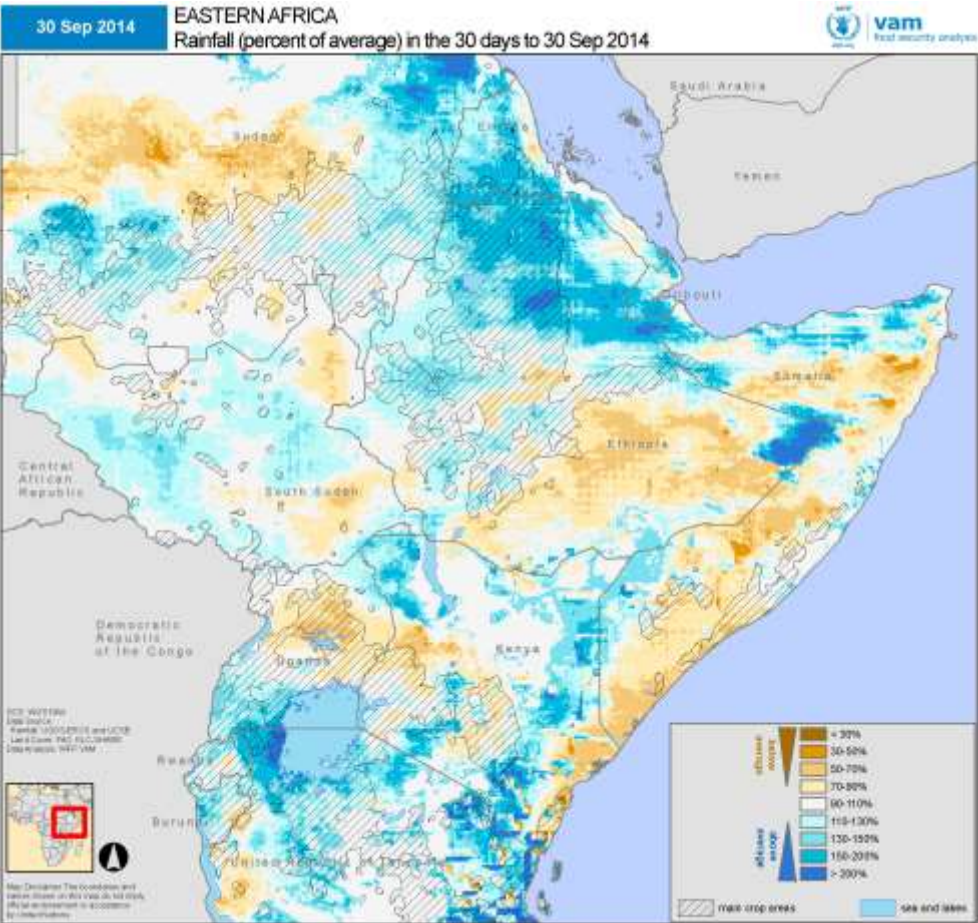
# How the season evolved



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# EAST AFRICA SEASONAL ANALYSIS – 2014/2015



September 2014 rainfall as a percentage of the 20-year average (left). Brown shades for below-average rainfall; blue shades for above-average seasonal rainfall.

September 2014 vegetation index as a percentage of the 12-year average (right). Orange shades for below-average vegetation; green shades for above-average vegetation.

Hashed pattern indicates main agricultural areas.

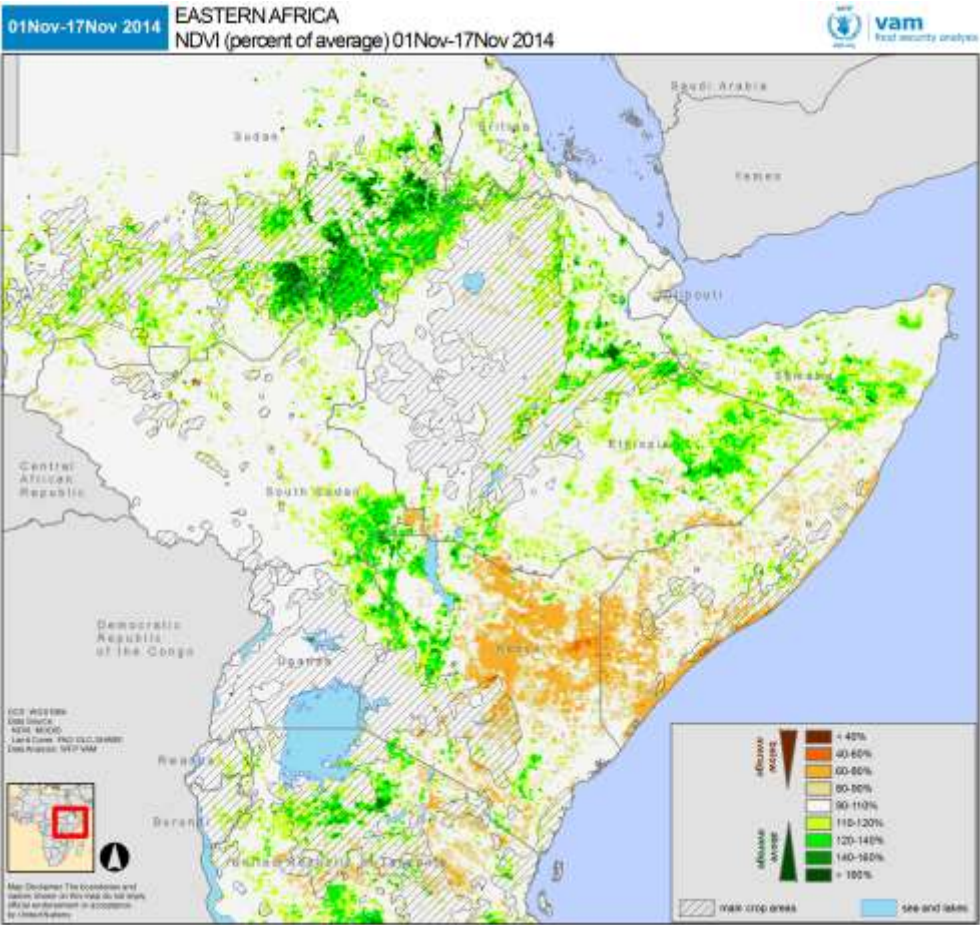
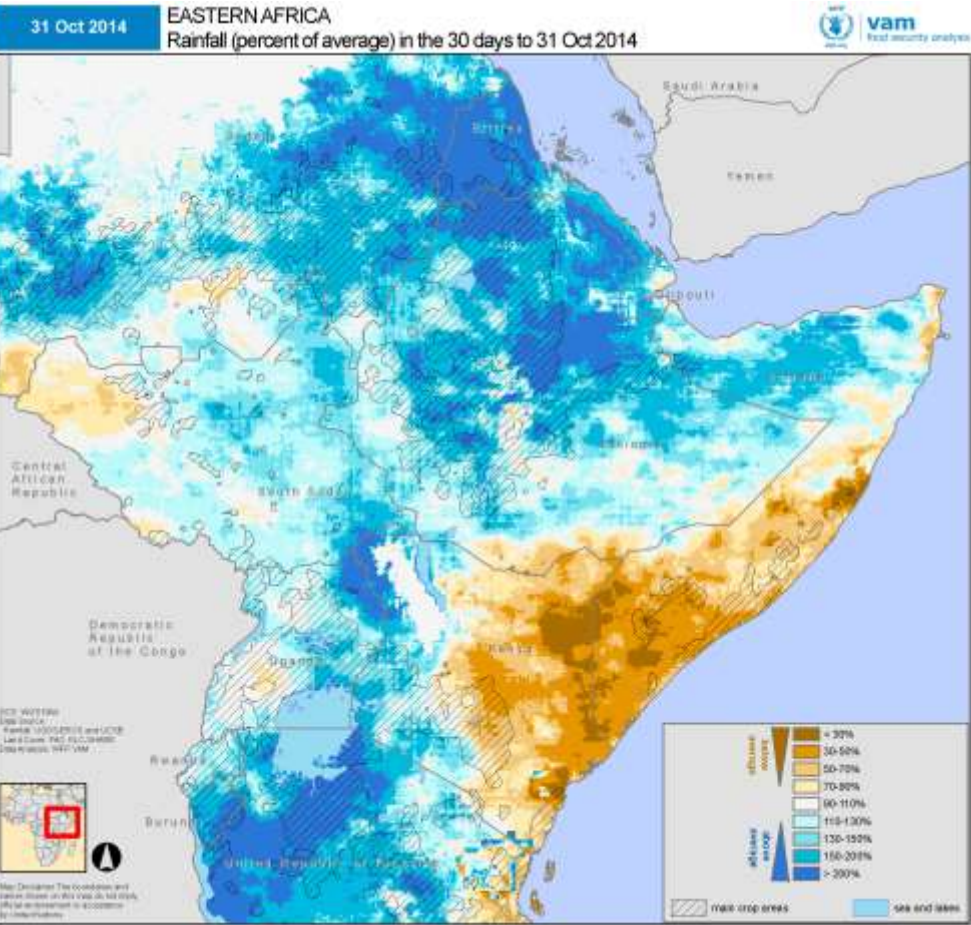
## September 2014

The earlier stages of the season were marked by broadly favourable rainfall across the region, though deficits were noticeable across much of Somalia and south-east Ethiopia.

Below-average vegetation patterns were already clearly evident in Somalia as a result of the poor performance of the previous season. In Turkana and Karamoja, vegetation growth was much better than usual, thanks to favourable rainfall in September and August (outside the usual seasonal timings).



# EAST AFRICA SEASONAL ANALYSIS – 2014/2015



October 2014 rainfall as a percentage of the 20-year average (left). Brown shades for below-average rainfall; blue shades for above-average seasonal rainfall .

Late October 2014 vegetation index as a percentage of the 12-year average (right). Orange shades for below-average vegetation; green shades for above-average vegetation. Hashed pattern indicates main agricultural areas.

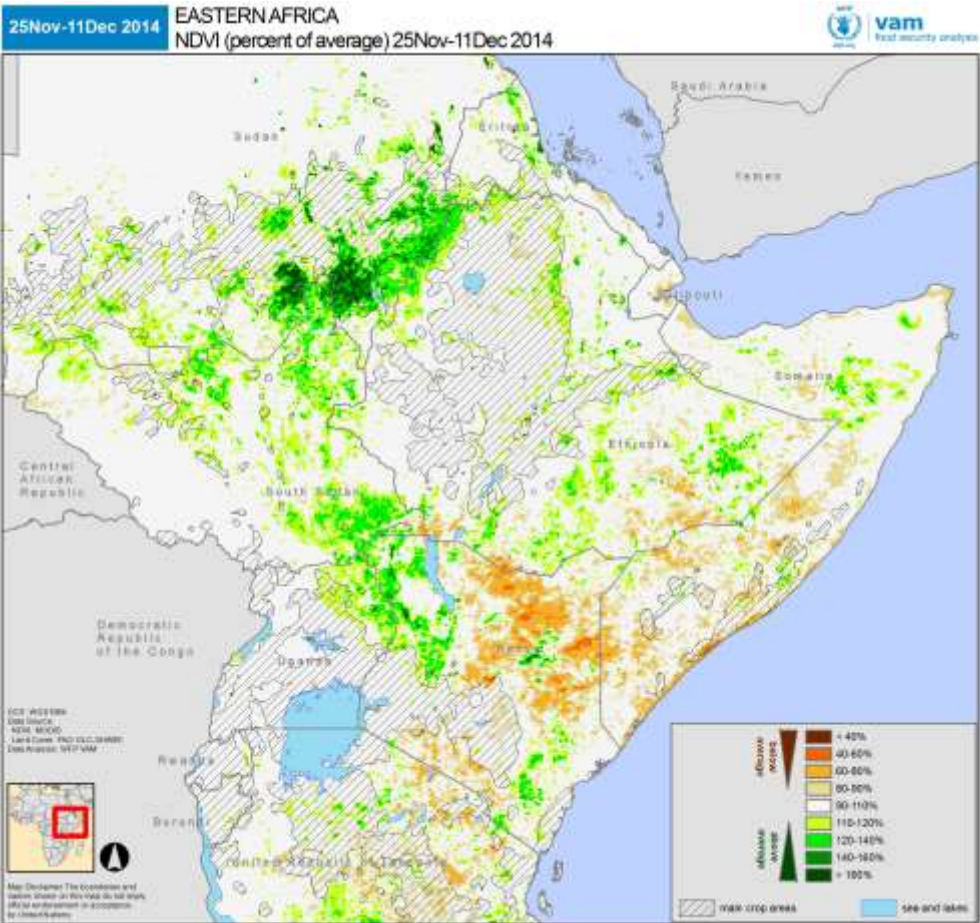
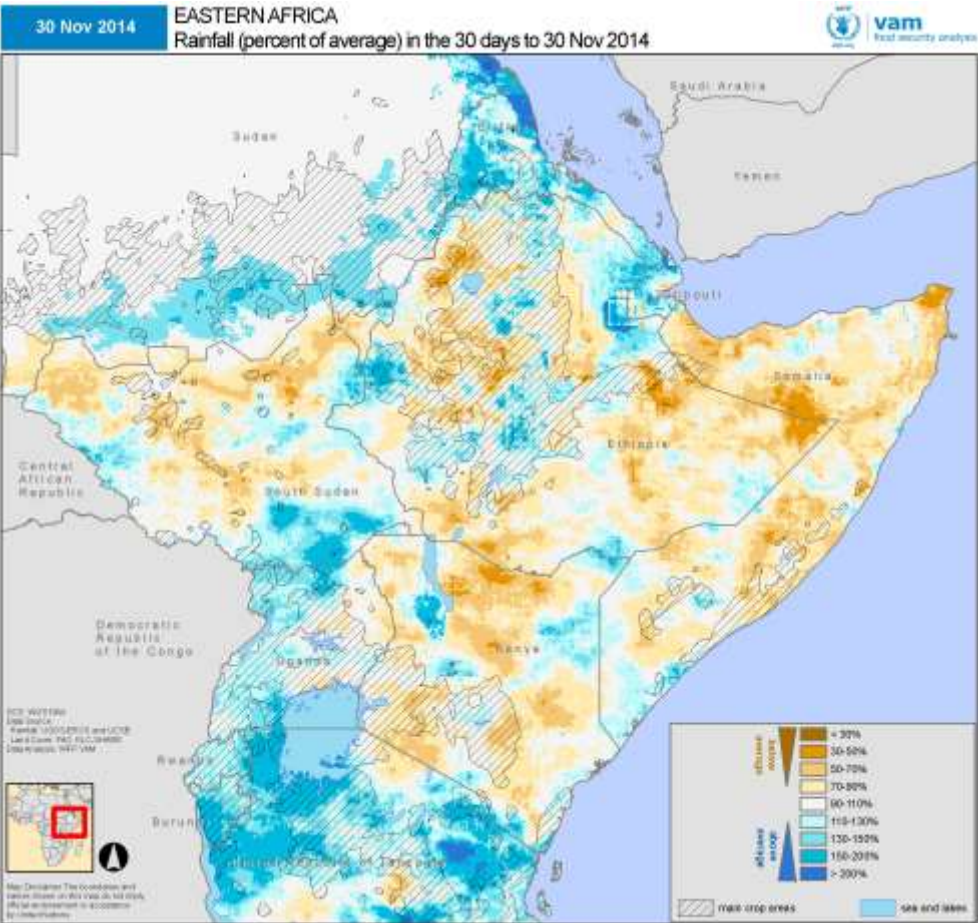
## October 2014

Rainfall patterns were very mixed in October: in eastern Kenya and the southern half of Somalia, conditions were markedly drier than average, but rainfall was above average almost everywhere else, particularly in the Karamoja/Turkana area.

This rainfall distribution reinforced the incipient vegetation patterns of late September: lower than average vegetation spread across eastern Kenya and Somalia. Elsewhere, vegetation levels were higher than average, especially in Karamoja/Turkana, south-east Ethiopia and Somaliland.



# EAST AFRICA SEASONAL ANALYSIS – 2014/2015



November 2014 rainfall as a percentage of the 20-year average (left). Brown shades for below-average rainfall; blue shades for above-average seasonal rainfall.

Late November 2014 vegetation index as a percentage of the 12-year average (right). Orange shades for below-average vegetation; green shades for above-average vegetation.

Hashed pattern indicates main agricultural areas.

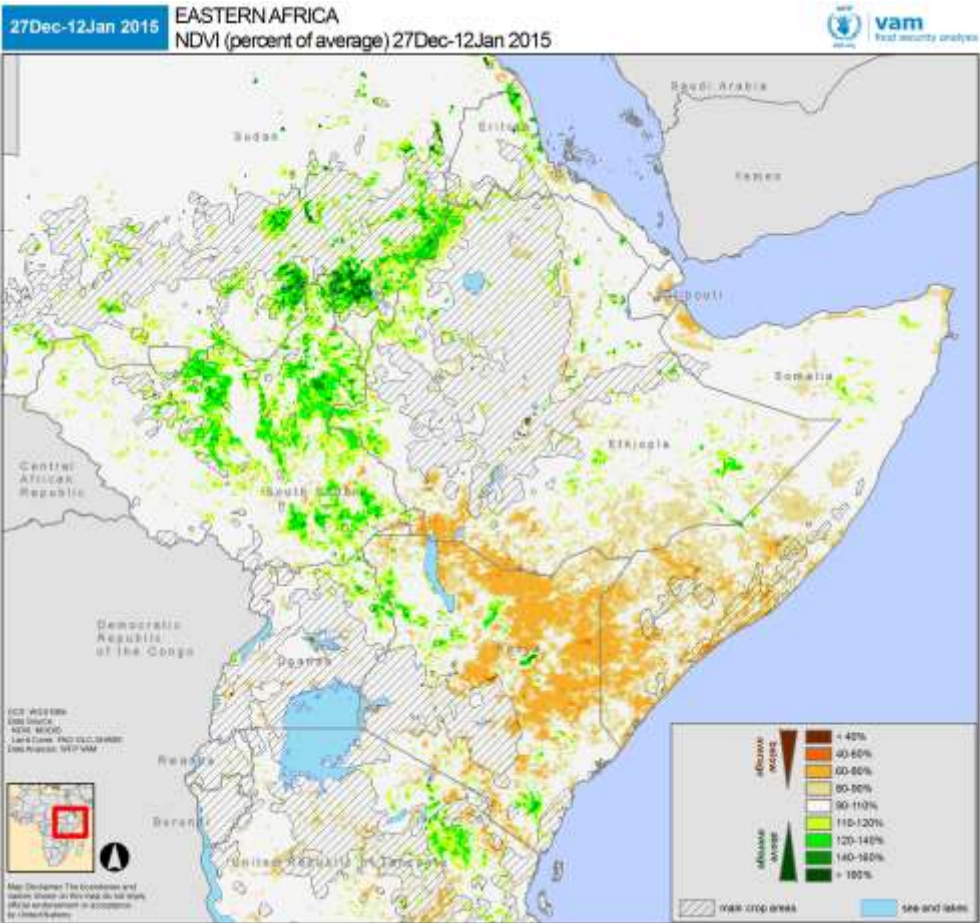
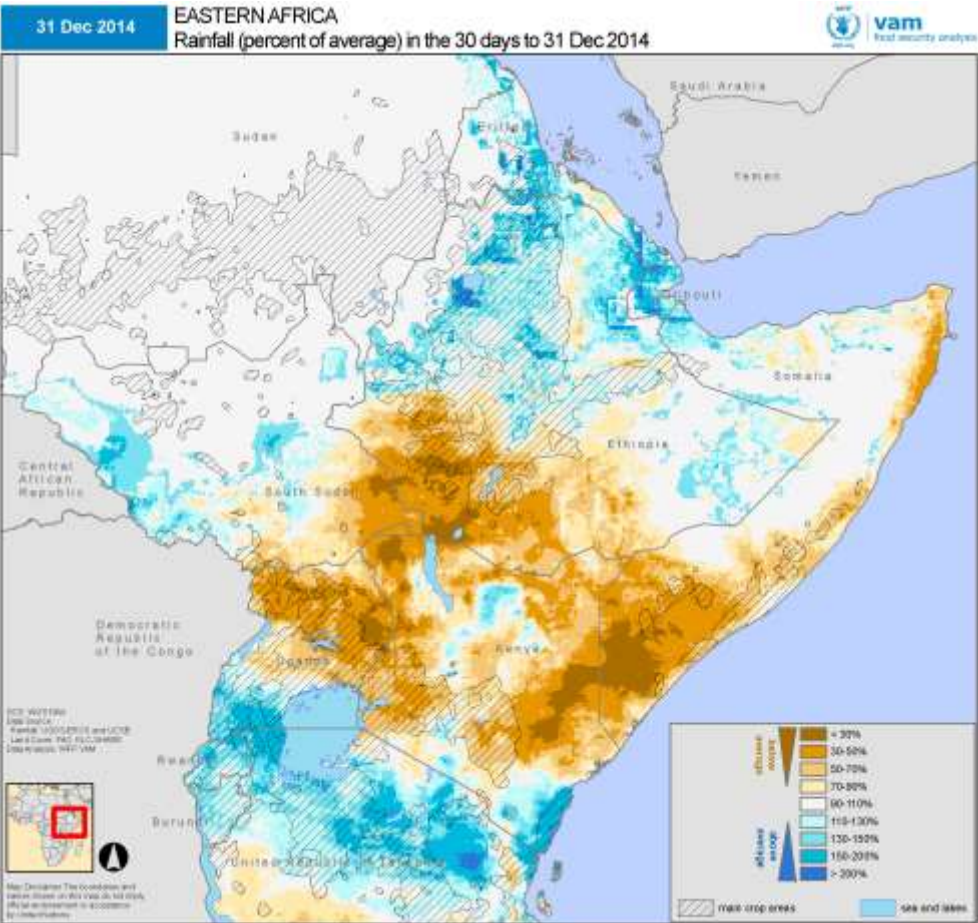
## November 2014

Conditions in November were broadly drier than average. This represented a continuation of the trend in northern and coastal Kenya and, to a lesser degree, in south-east Somalia. Elsewhere, it interrupted the wetter than average conditions that had prevailed thus far.

As a result, vegetation growth in northern Kenya fell further below average levels, affecting wider areas of the region and causing problems for the normal start of the growing season. In other areas, the drier November meant vegetation reverted to levels closer to average.



# EAST AFRICA SEASONAL ANALYSIS – 2014/2015



December 2014 rainfall as a percentage of the 20-year average (left). Brown shades for below-average rainfall; blue shades for above-average seasonal rainfall.

Late December 2014 vegetation index as a percentage of the 12-year average (right). Orange shades for below-average vegetation; green shades for above-average vegetation.

Hashed pattern indicates main agricultural areas.

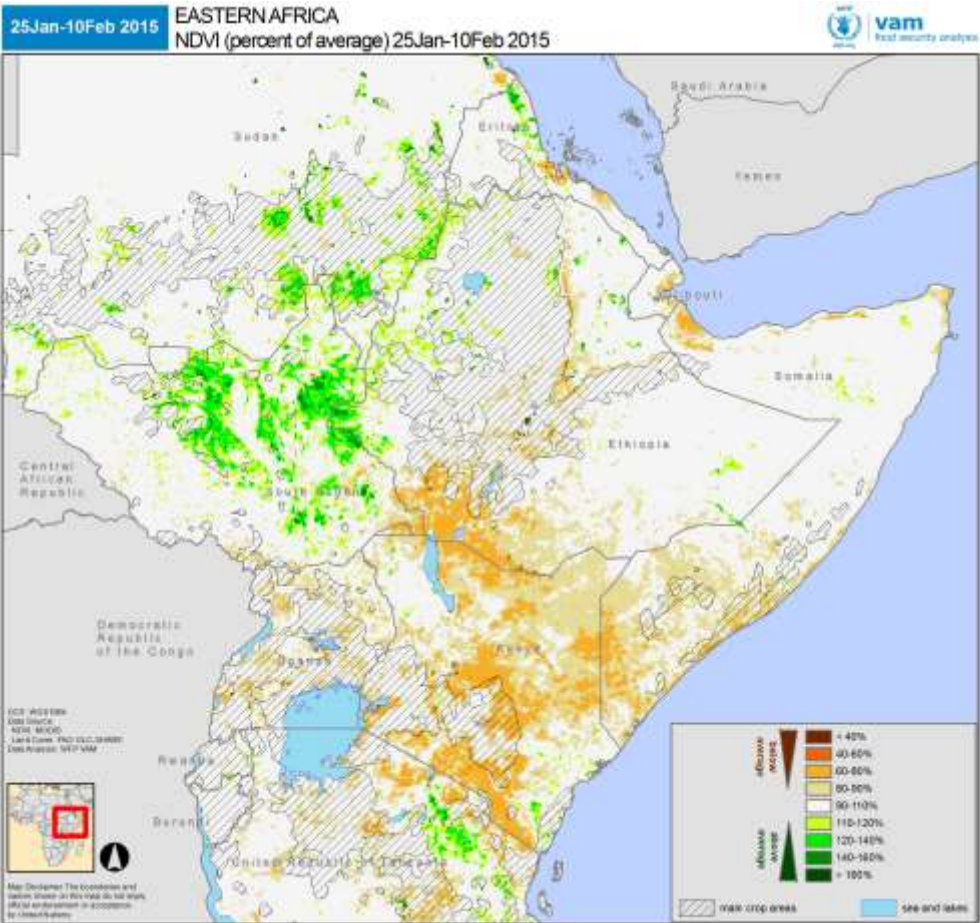
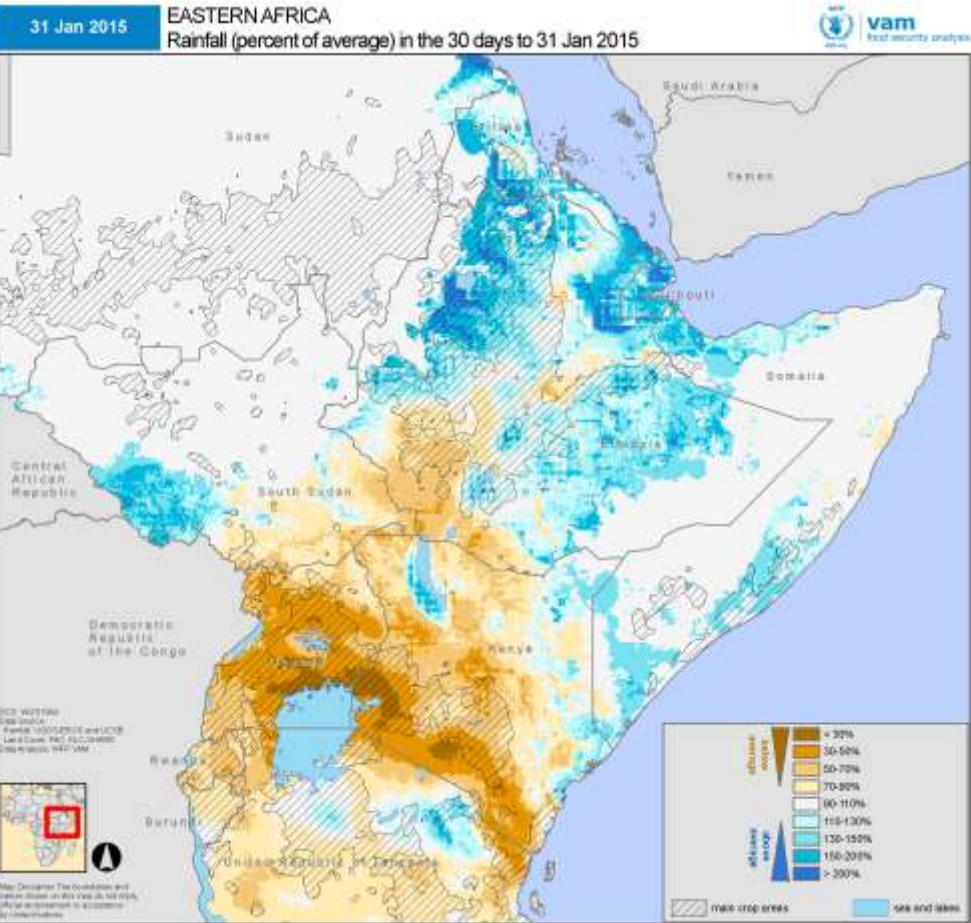
## December 2014

In December, very large rainfall deficits extended across southern Somalia, most of Kenya, south-west Ethiopia, eastern South Sudan and most of Uganda (except the south-west). This month corresponds to the later stages of the rainfall season, after the November peak. High levels of dryness in December can therefore be problematic because it means less soil moisture is stored for the upcoming dry season.

The rainfall deficits damaged vegetation, particularly in Kenya and southern Somalia, which had already suffered pronounced dryness in the previous months. Elsewhere, vegetation conditions moved closer to the long-term average, dropping from the high above average conditions that had been enjoyed thus far.



# EAST AFRICA SEASONAL ANALYSIS – 2014/2015



January 2015 rainfall as a percentage of the 20-year average (left). Brown shades for below-average rainfall; blue shades for above-average seasonal rainfall.

Late January 2015 vegetation index as a percentage of the 12-year average (right). Orange shades for below-average vegetation; green shades for above-average vegetation. Hashed pattern indicates main agricultural areas.

## January 2015

January usually provides a fairly small contribution to the total seasonal rainfall across most of East Africa, but it can still help late-developing crops or refill depleted soil moisture stores if rains are abundant. However, drier than average conditions continued through January 2015, mainly affecting southern Kenya, most of Uganda and the south-west Ethiopian border with South Sudan.

As a result, vegetation was below average across most of Kenya (including its southern regions), south-west Ethiopia and southern Somalia, with signs of vegetation depletion also showing in Uganda.

## 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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