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Sudan Seasonal Monitor



Sudan Meteorological Authority
Federal Ministry of Agriculture and Forestry

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Summary

- Noticeable southwards retreatment of IFT during late September associated with below average rainfall in most parts of the country.
- Above average rainfall amounts shown in areas of north Blue Nile (*Damazine* 96.9mm), Southern Kordofan (*Kadogli* 151.9mm, *Babnousa* 199.7mm and *Rashad* 148.5mm), southern Darfur (*Nyala* 98.0mm) and Western Darfur (North of *Geneina*). See pages 1 & 4.
- Cumulative rainfall amounts reflect the poor performance of rainfall during the September except areas of South parts of Northern Kordofan, the north parts of Southern Kordofan and Western Darfur along the borders with Chad with average rainfall amounts. See page 3& 4, (Fig:2f)
- On average vegetation development level in the most part of the Country as a consequences of dryness conditions prevailed during July. See Page 4&5F, Fig(4a &b)
- Vegetation has significantly drooped to below average levels compared with average in the areas of Gedaref, Gezera, Sennar and White Nile after the September dryness and dry spells occurrence. See pages 4-17.

IFT movement

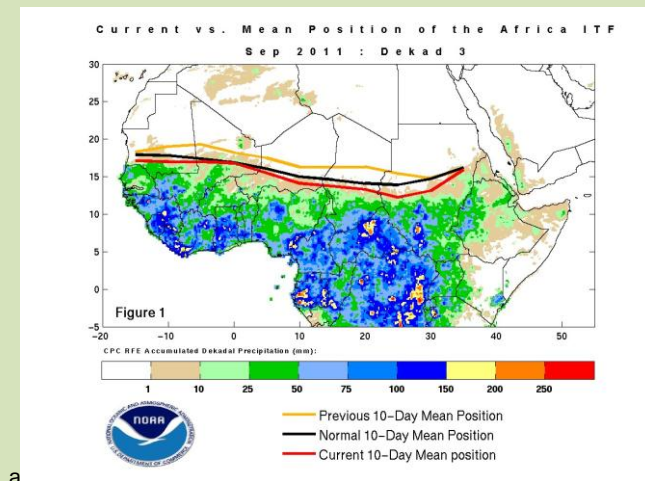


Fig 1a – Position of the IFT over Africa in August 21-31-2011(red) compared to average position (black). (Source : CPC)

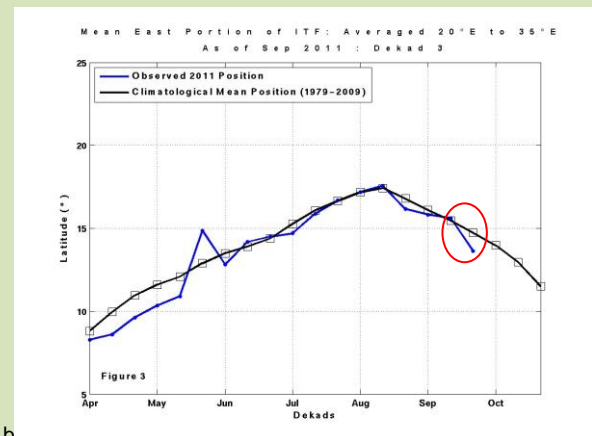


Fig 1b – Average position of the IFT over Sudan along the current season compared to a 20-year average. (Source: CPC). Note the retreat in the position in early July (circled)

Seasonal Progress

Rainfall in Sudan mostly results from a northwards movement of humid air masses from March to August and their southwards retreat from September to November. At their northernmost reach, these humid air masses meet with drier and warmer air to form the Inter tropical convergence zone (ITCZ). Since the rain follow south of the ITCZ, tracking the ITCZ through the season provides a quick evaluation of the seasonal progress of the rainy season and of its quality.

Fig (1a) shows a map with the latest ITCZ position. Current position of the ITCZ is south of the previous dekad and below to its average position across the country.

Fig 1b, showing the latitudinal means of the eastern portions of the ITF, and the evolutions since the start of April. The Dekadal progress of ITCZ, shows below average positioning from its average in late September.

September Rainfall in Sudan

Early September brought above average rainfall amounts in the most central parts of Sudan. Areas of north Blue Nile (*Damazine* 96.9mm), Southern Kordofan (*Kadogli* 151.9mm, *Babnousa* 199.7mm and *Rashad* 148.5mm), southern Darfur (*Nyala* 98.0mm) and Western Darfur (North of *Geneina*).

In contrast, areas of Western Gedaref, West of Sennar, White Nile, Northern Kordofan and Northern Darfur experienced below average rainfall amounts during early September. Moderate rainfall amounts were noticeable in most northeastern parts of Gedaref and south part of Damazine. No rainfall registered in Gezira state.

, see Fig (2a).

Unlike early September, mid September shown below average rainfall amounts in the most parts of the country, except isolated areas in south of *Gedaref*, south of *Damazine*, northern parts in Southern Kordofan and around *Geniena* in the Western Darfur with above average rainfall amounts, see Fig(2a,b).

Late September associated with dryness all over the country except minor areas in the Western Darfur along the borders with Chad showed on average rainfall amounts as consequences of the ITCZ southwards retreatment. Below average rainfall amounts may contribute negatively to the crop growth, especially the late planting crops in the north part. Also, it may cause deficit in crop water satisfaction index for Sorghum in the eastern region. see Fig (2c).

In terms of total rainfall amounts, September failed to bring sufficient rainfall to supply the crop during this critical stage of growing. Below average rainfall amounts showed in the most parts of the country during September.

Some areas showed on average rainfall amounts in Southern Kordofan and Western Darfur along the borders with Chad. See Fig (2d).

September rainfall as a percentage of average fallen below average in the most parts of the country except, in Western Darfur along the borders with Chad. See Fig (2e).

Cumulative rainfall amounts reflect the mal performance of rainfall during the season except some areas of southern parts of Northern Kordofan and Western Darfur with on average performance, see Fig (2f).

From crop water satisfaction point of view, a serious problem may occur if the situation continued in this way. The situation is getting worse as September total rainfall were below average in most parts of the country and in the semi-mechanized and traditional agricultural areas.

Most crops are reaching their maturity stage and need irrigation to produce yield

Presentence of long dry spells during September in most parts of the country affected the crop growth negatively, which exceeded 10 day.

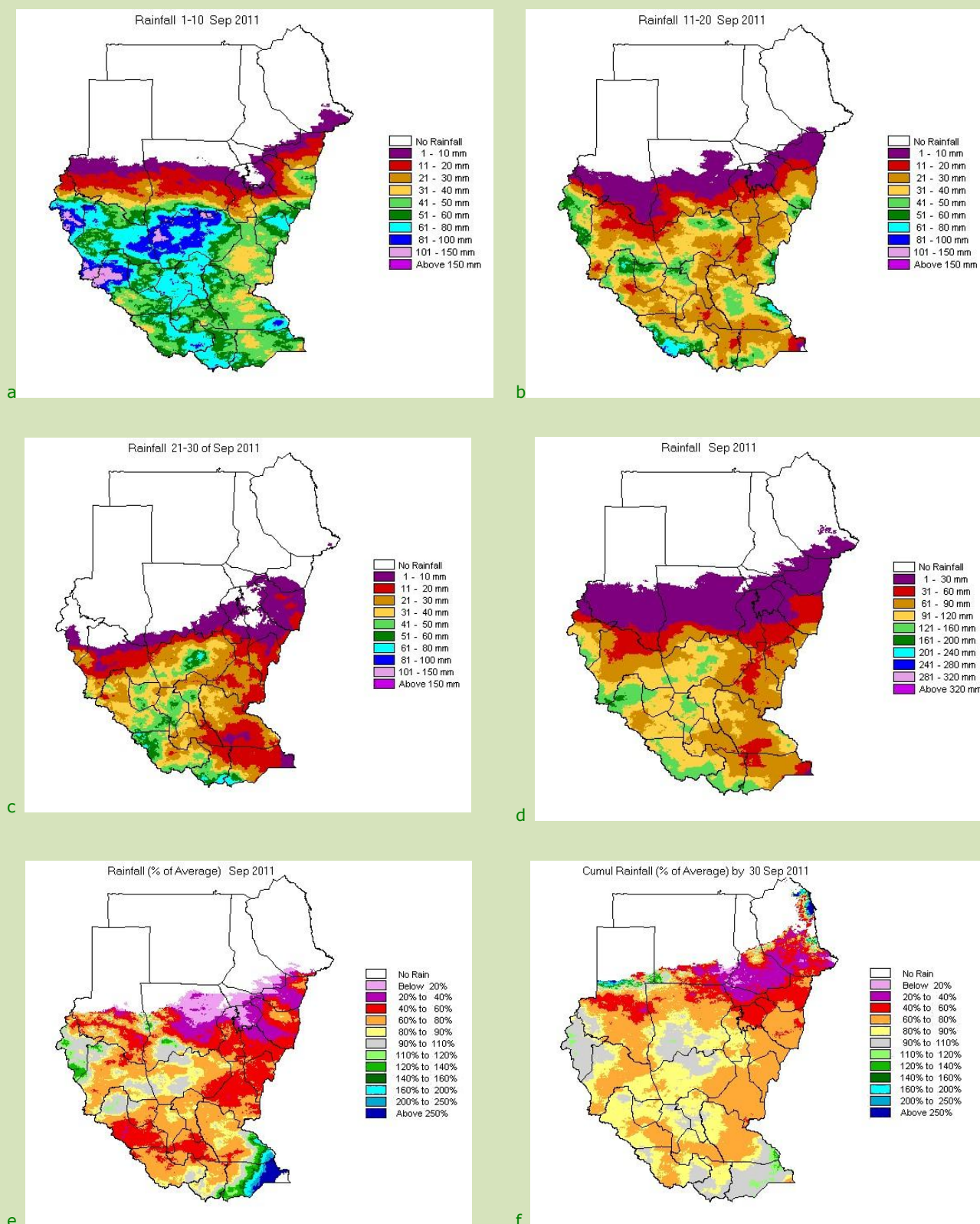


Fig 2: a – Rainfall in early August 2011. b – Rainfall in mid August 2011, c- Rainfall in late August 2011. d– August 2011 total rainfall , e- August total rainfall as % of average . f– Cumulative rainfall as % of Average by late August 2011.

Vegetation Status

Vegetation condition and development are assessed by means of the NDVI (Normalized Difference Vegetation Index) – this is a satellite derived parameter which responds (almost) uniquely to vegetation and

is available on a global scale every ten days.

Slight vegetation development noticeable in Blue Nile, southern Kordofan, Southern Darfur and West Darfur as a result of the August good rainfall, *See Fig(4a)*. Elsewhere, the vegetation development level still below average.

The situation is worsening as the rainy season passed its peak since late August, vegetation development levels still below average in most parts of Sudan.

Generally, vegetation development is likely to improve if September brings good rainfall and have a reasonable distribution.

Kassala, Gedaref, Gezira and West northern parts of Sennar, showed below average vegetation development levels during late September. Moderate to on average vegetation development shown in Blue Nile, Southern Kordofan, Southern Darfur and West Darfur benefited from the good rainfall during early September. *See Fig(4b & b)*.

Good rainfall amounts that registered in early September maintain the situation in Western region of Sudan and Blue Nile, while the long dry spell that occurred at the end of September have a negative impacts on the crops development especially in the semi mechanized areas in the eastern part of the country (Gedaref, Kassala, Sennar and Blue Nile). As a consequence, average to below average crop production is expected in these areas.

Pastoral situation and water resources are affected negatively by the dryness in during September, as a result below average pastoral development were existence from the start of the season in the north parts of the

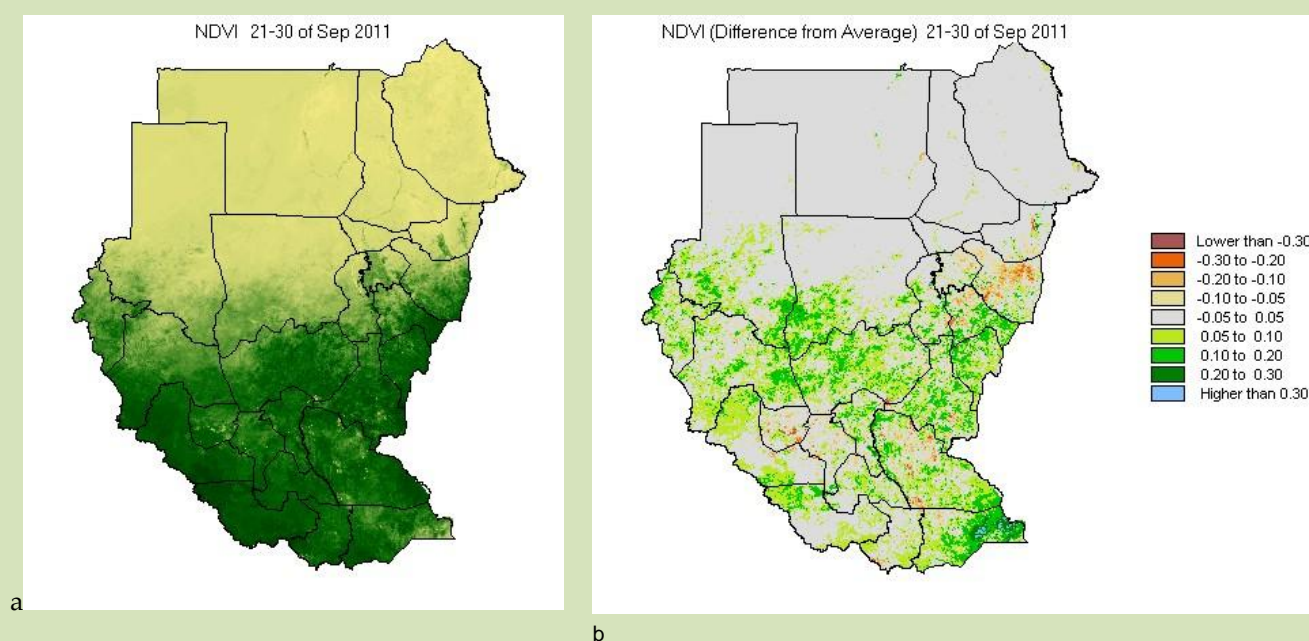
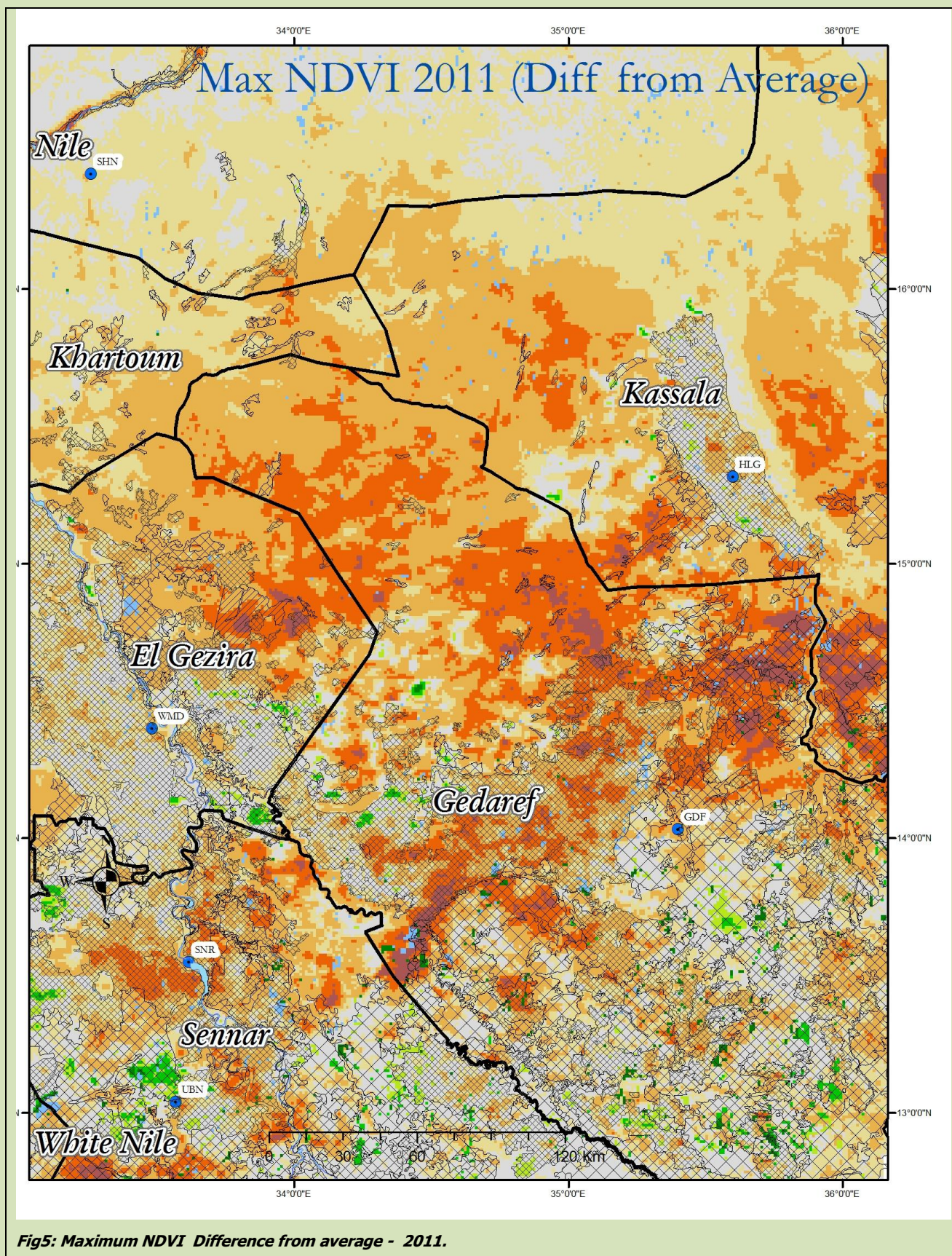


Fig 4a – NDVI progress for late August 2011, Fig 4b – NDVI difference from average in late September 2011 Yellows and reds represent below average vegetation development, greens and blues represent above average vegetation development.

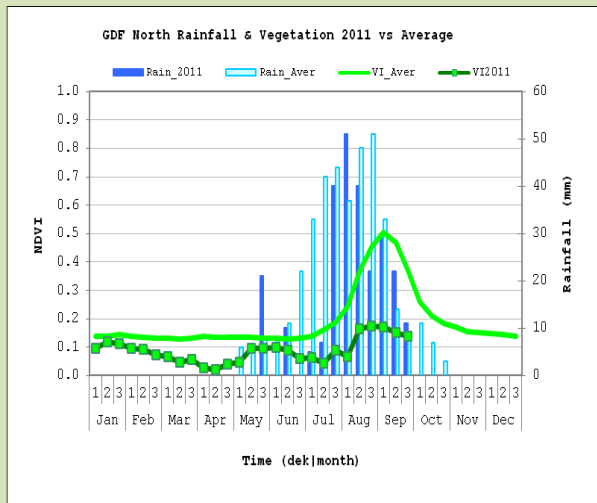
country. As a result, over grazing is expected in the good postural areas.

Generally, vegetation situation is below average levels all over the country and shortage of water resources for the pastoral is expected. *See Fig(5)*.

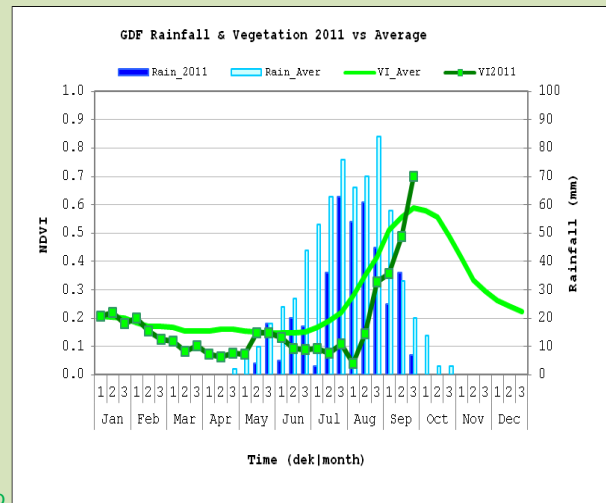


Vegetation & Rainfall Perspectives

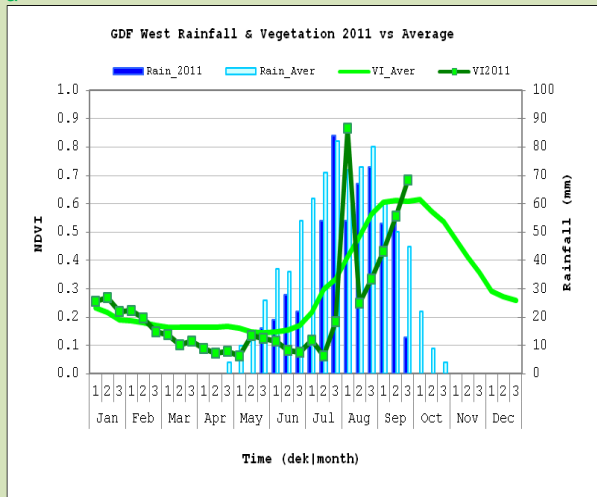
Gedaref State



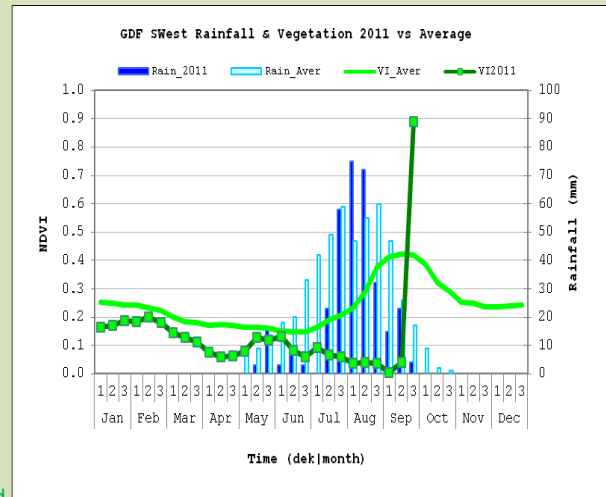
a



b



c

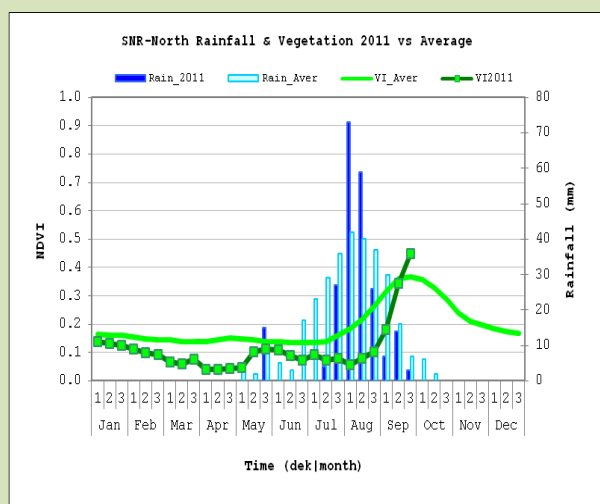


d

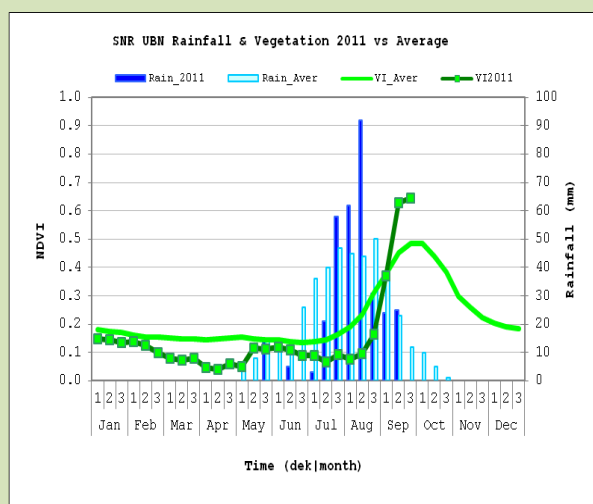
On average to below average rainfall amounts during September over the state. Vegetation and crop development levels still below average it improvement elsewhere.

Generally, on average crop production is expected in the mechanized areas.

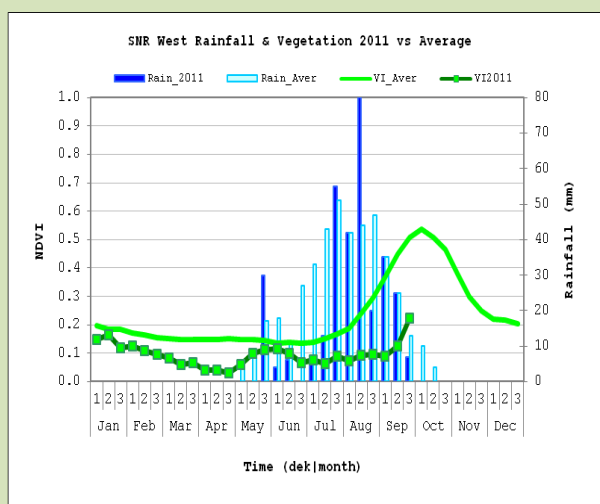
Sennar State: Traditional and semi-mechanize Agriculture



a



b



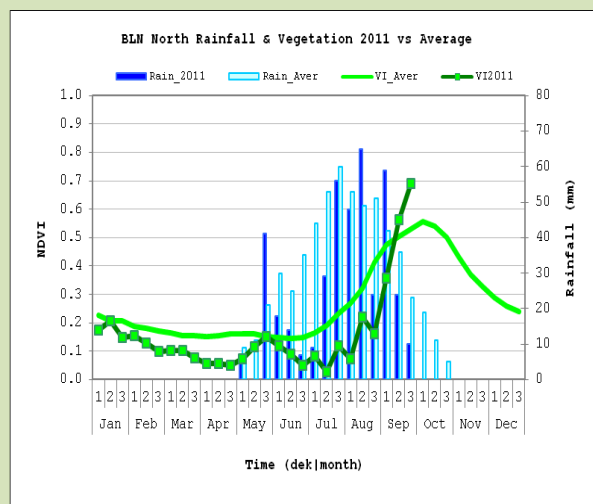
c

Above average rainfall amounts during August and on good September rainfall in the Um Benin and Sennar North contributed positively to the vegetation above average development level in late September.

Mal performance of rainfall during August and September in West areas of Sennar affected the vegetation and crop development.

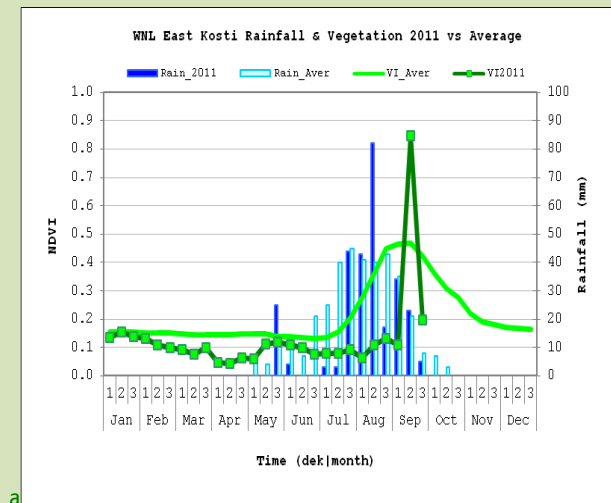
On average to above average crop production is expected in Um Benin elsewhere, on average to below average crop production is expected.

Blue Nile State: Traditional and semi-mechanized Agriculture

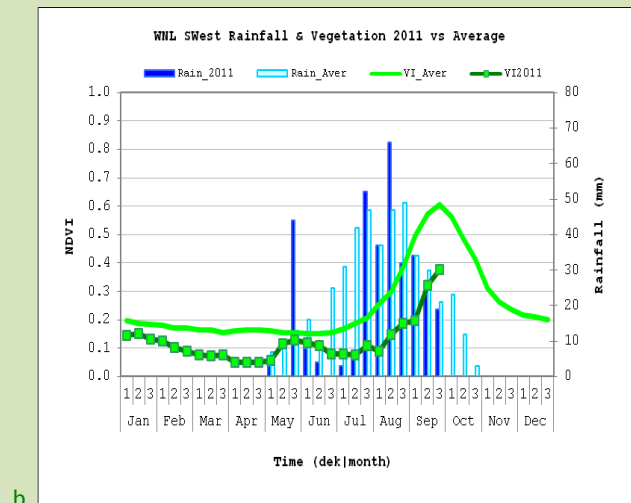


August and early September good assist the above average vegetation and crops development levels in Blue Nile areas. Above average vegetation level noticeable from early September in the north part of the state.

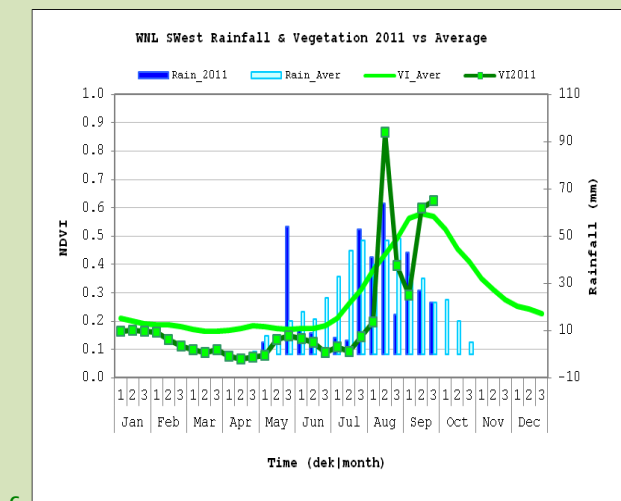
White Nile: Traditional and Irrigated Agriculture



a



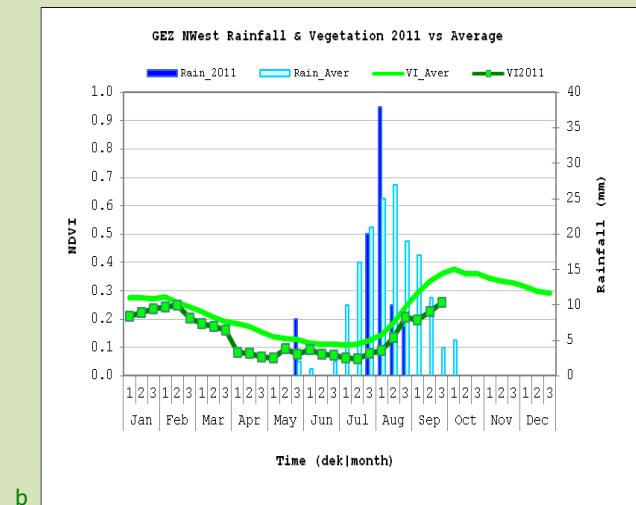
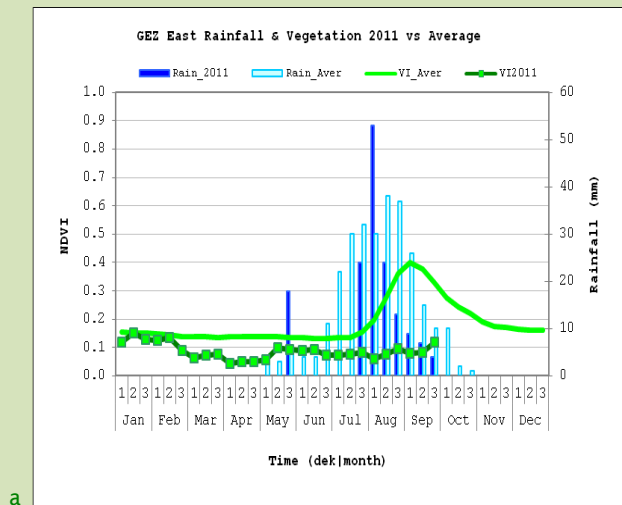
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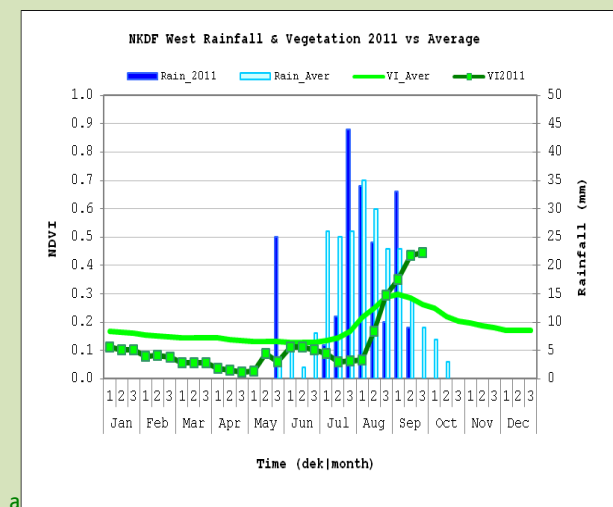
On average rainfall during August and September in the eastern and south western parts of the state associated with sharp fluctuation in the vegetation development and below average levels since the start of growing season, which limited the expected crop production in these areas to on average or below average levels.

Gazira: Traditional Agriculture

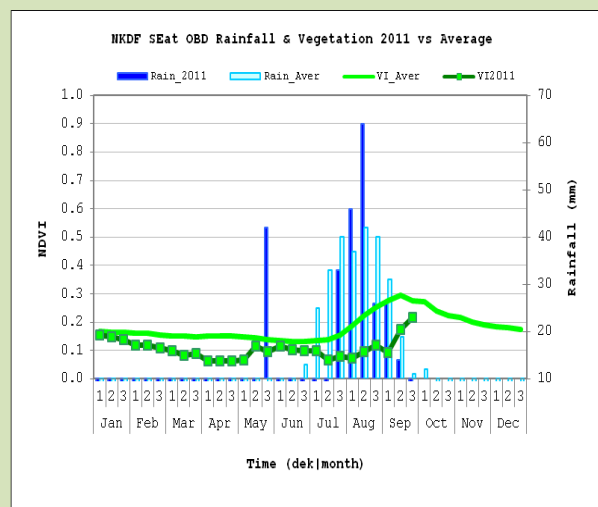


Poor Performance of rainfall since mid August in the eastern and north western parts of Gezira state, which leads to below average vegetation development levels. As a consequence, the crops production is expected to be in below average levels in these areas.

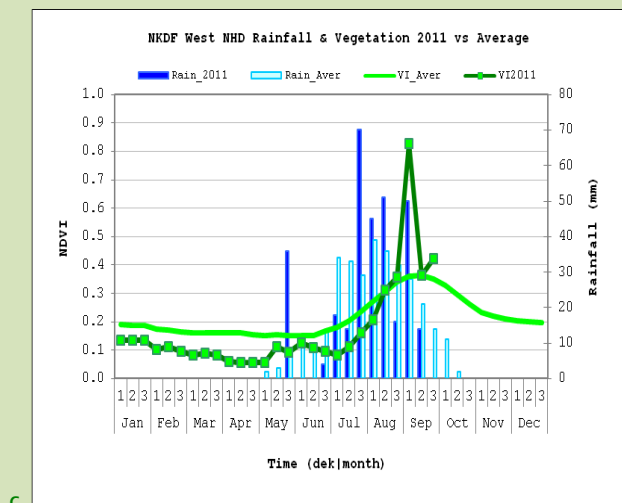
North Kordofan State: Traditional Agriculture



a



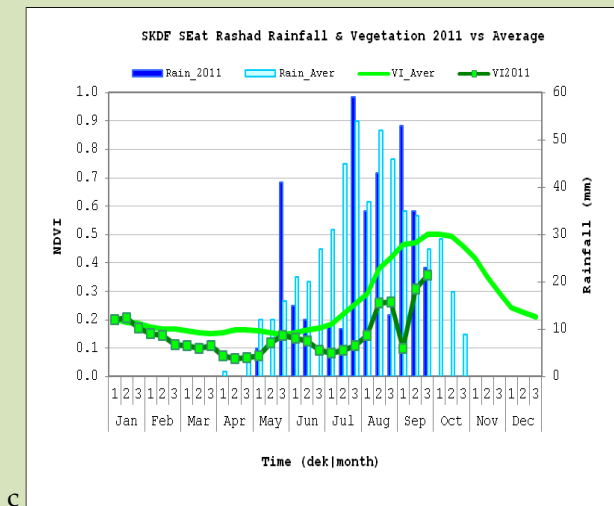
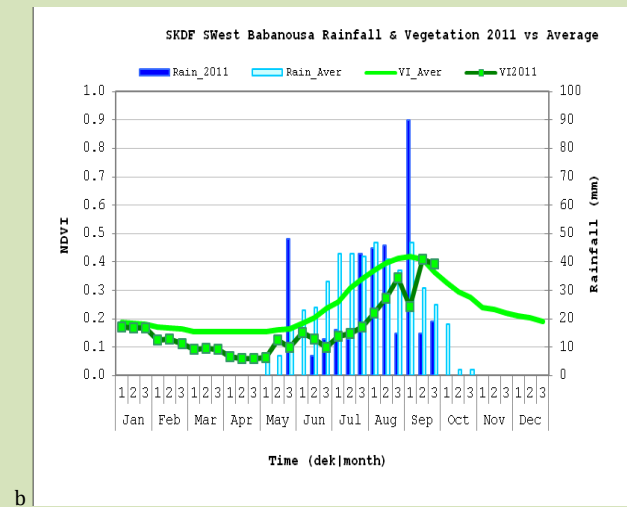
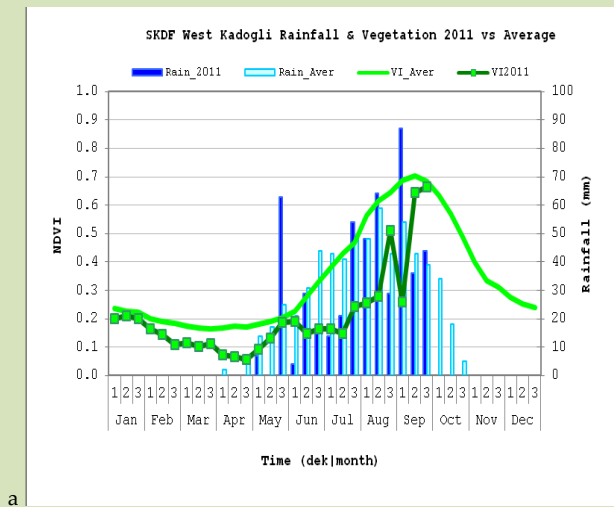
b



c

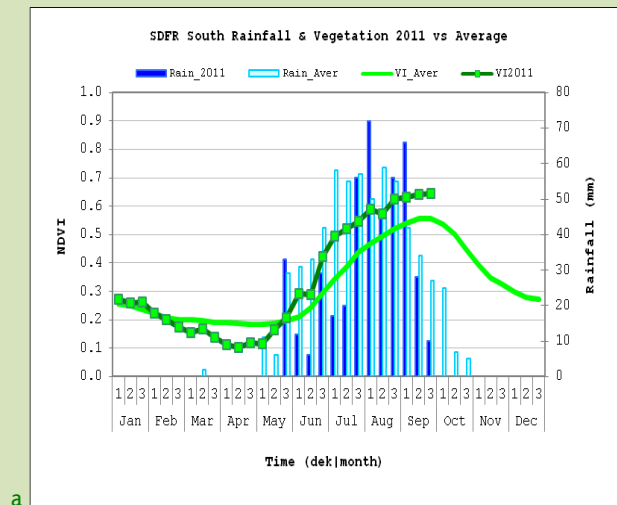
On average rainfall in west El Nahoud and the western parts of the state which helped the vegetation to reached its above average levels during September. Below average vegetation levels are noticeable in south eastern of El Obied as a result of the poor rainfall since mid August. Crops production is expected to be on average levels all over in these areas.

South Kordofan State:

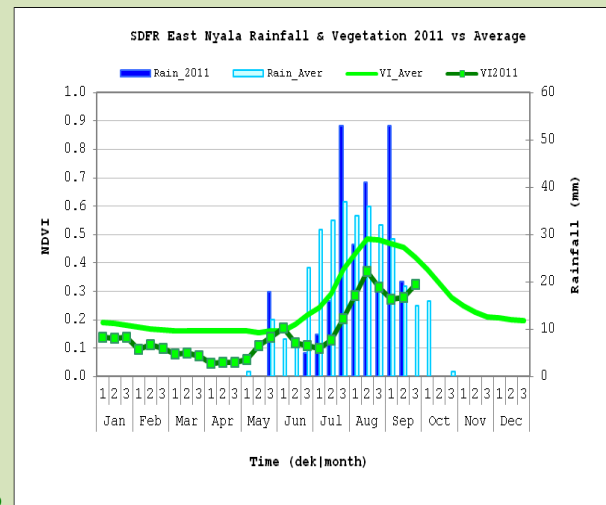


Good rainfall amounts during August and September contributed positively to the on average vegetation development in West Kadogli and south west Babanousa in Southern Kordofan state. To ensure best crops production more rainfall is needed during October in these areas. Contrariwise, the vegetation development levels still below average since the start of growing season in the areas of south east Rashad.

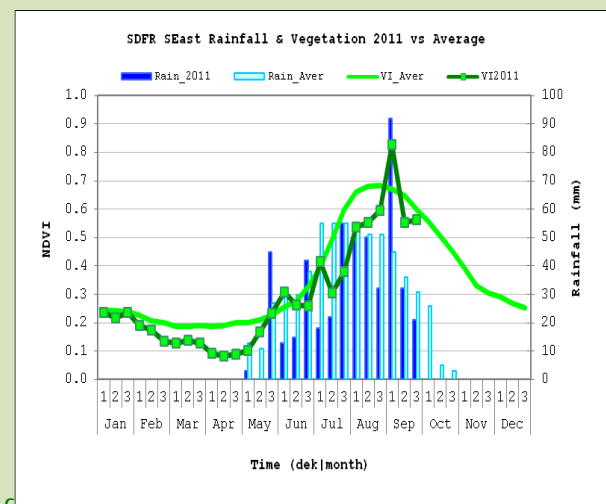
South Darfur State: Traditional Agriculture



a



b

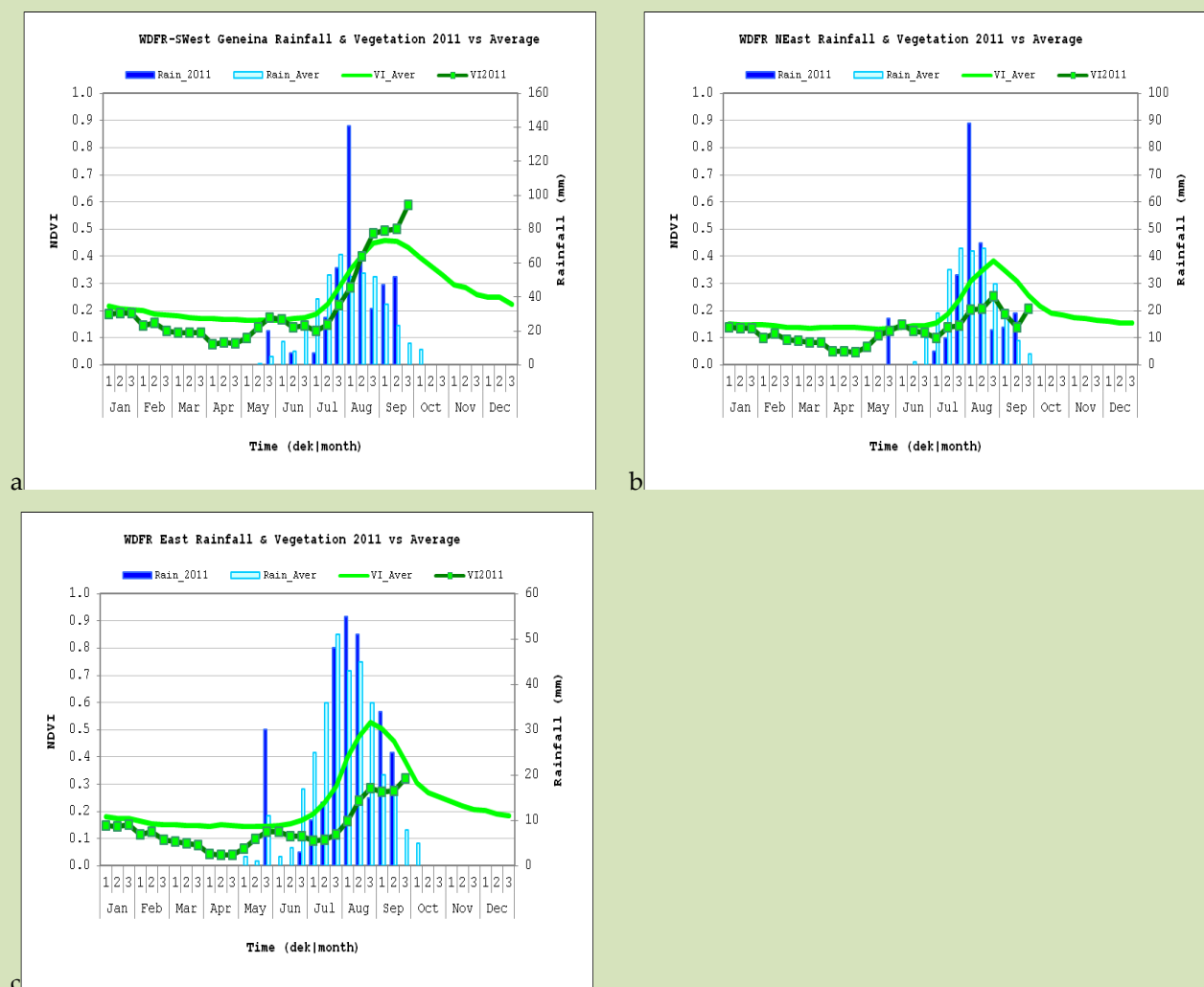


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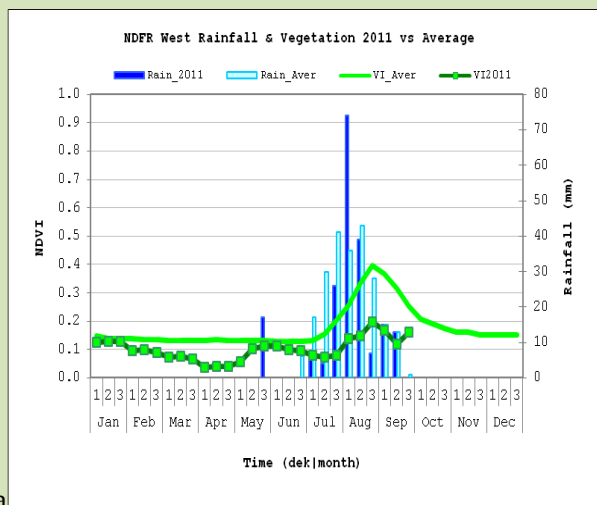
Above average vegetation development levels in the southern parts of the state. Elsewhere, below average levels are shown especially areas of East Nyala and south eastern parts where a significant drop of the vegetation development is noticeable.

West Darfur: Traditional Agriculture

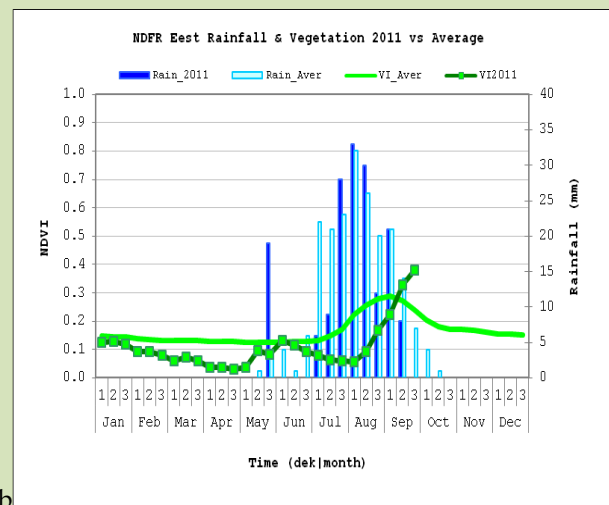


Above average vegetation development levels since mid of August in south west Geneina benefited from the good rainfall amounts during August and September. Eastern and north eastern parts of the state showed below average vegetation amounts, but the Situation is likely to improve during coming dekads.

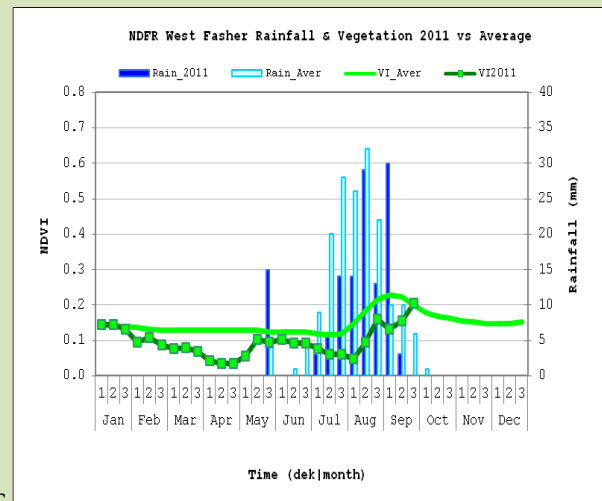
North Darfur: Traditional and Postural



a



b



c

On average to above average vegetation development levels are noticeable in eastern areas of the state and west El Fasher areas. Poor performance of vegetation is in the western parts of the state.

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