



CROP WATCH BULLETIN

SOUTH SUDAN | March - August 2023

HIGHLIGHTS

- Rains started late across the country, with the bimodal areas receiving their first rains in April and the unimodal areas in late May. Normally the rains in bimodal areas start in March and in unimodal areas at the beginning of May. The rainfall amount was to be below average at the beginning, followed by period of dry spells across the country which lasted two to three weeks on average, from the third dekad of June to second dekad of July. However, the rains have fully established since second and third dekad of July creating favourable conditions for a quick recovery of stressed crops and replanting and planting operations in most cropping areas.
- The impacts of the dry spells were serious in Kapoeta East in Eastern Equatoria. In Western Equatoria, Ezo County, planting of sesame and rice was disrupted, and maize and groundnuts were stunted. In Unity State, Mayendit County maize was replanted. Other areas had to do gap filling.
- Production prospects for the first season of 2023 in Greater Equatoria are not promising mainly due to the prolonged periods of dry spells and the effect of Fall Armyworm (FAW) in some areas. The unimodal areas of Greater Bahr el Ghazal and Upper Nile regions will likely perform better than those of Greater Equatoria because of delayed floods and relative peace.
- Spontaneous voluntary returnees from the neighbouring countries, especially Uganda and the Democratic Republic of Congo, and refugees and IDPs from Sudan who returned to Maban contributed in cultivation.
- The prevalence of pests and diseases in bimodal and unimodal areas has been within the normal range. However, weeds such as babachiro, congress weeds and striga continue to cause damage to field crops. Other pests and diseases like stalk borers and cassava mosaic virus, remained within the normal ranges and had a mild effect on crops.
- Figures on planted area and yields of crops will be made available at the end of 2023 when most of the crops are harvested and the data collection is completed. While the prospects for the first season production in the bimodal areas remain low, the projection for most

unimodal areas is positive, with good production this year. However, the situation may change rapidly depending on the rainfall condition and the arrival of floods in the coming weeks and months.

1. Introduction

The Crop Watch bulletin provides a general outlook on rainfall and crop performance in South Sudan covering the period from March - August 2023. This report is based on interviews with farming households, key informants, including focus group discussion with farming communities and county authorities from the State Ministry of Agriculture and Forestry. Remote sensing products including normalized difference vegetation index (NDVI), satellite-based rainfall estimates and data from locally installed rain gauges are used. Other sources such as the vegetation health index (VHI) and the FAO's agricultural stress index (ASI) were also used. The analysis examines rainfall and crop performance in the bimodal and unimodal areas of South Sudan during the period under review. Despite the accuracy of this analysis, the performance of crops may change rapidly within a short period of time depending on the rainfall situation and other biotic factors across the country. Accessing information in inaccessible and conflict affected areas was one of the main constraints the assessment teams (taskforce, agricultural extension workers and monitoring and evaluation assistants) faced in the production of this report.

2. Rainfall and crop performance in the Greater Equatoria region

The rainfall situation in the first season of 2023 in Greater Equatoria has not been favorable. Some locations in Western Equatoria received early rains in the second dekad of March, whereas rains were delayed in most of Central and Eastern Equatoria States, starting in April and May for most locations with dry spells in between (reported more than ten days consecutively). The distribution and amount ranged from poor to below average in most of these areas. However, in July the rainfall has shown improvement in amount and distribution.

2.1 Western Equatoria State

a) Rainfall amount and distribution

Rainfall started in the second week of March in most locations in Ezo County and considered normal start and earlier than the previous year. However, dry spell of 2 – 3 weeks at end of March to second week of April disrupted sesame and rice planting and affected the already planted crops such as maize and ground nuts leading to their stunted growth. The amount of rainfall was below average with poor distribution but improved to average as the season progressed. Planting continued for groundnuts, maize and rice after the improvement and establishment of the rains.

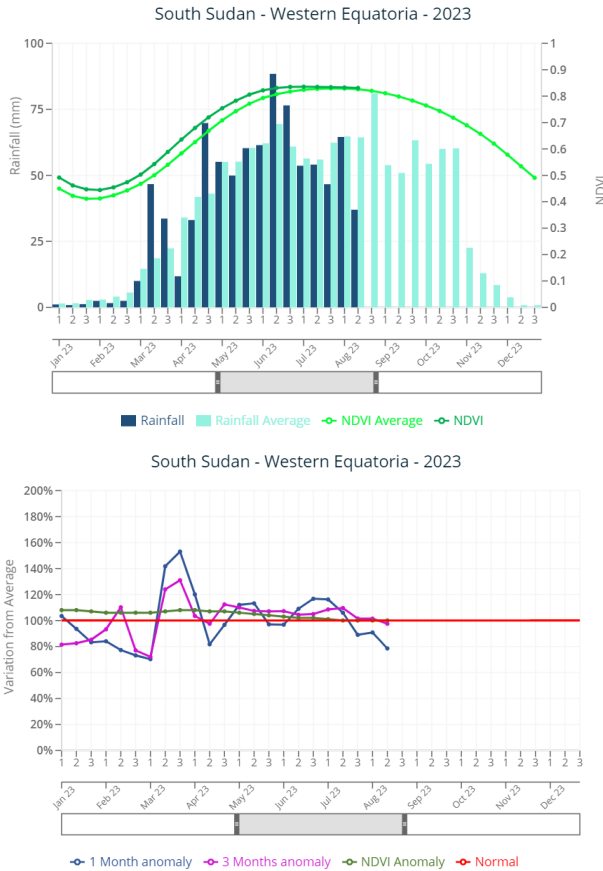


Figure 1. Rainfall and NDVI anomalies for Western Equatoria State

In Tambura the onset of the rainfall was mixed, in Mabaiku Boma for instance the rainfall started in the third week of April and followed by three weeks dry spell in the last week of April to the beginning of May. Whereas in Mangburu Boma the start of the rains delayed to the first week of May and dry spell followed in the last week of May. Despite the dry spell, the average amount of rainfall reported in the Bomas mentioned above was better than that of the previous year and the effect of the dry spell was mild on the crops.

Rainfall started in the second week of April across the three Counties of Greater Mundri (Mundri West, Mundri East and Mvolo) and was described by most respondents as late and below average. However, crops performed well compared to last year when heavy rains in July and August affected sorghum and ground nuts.

In Yambio, Maridi and Ibba Counties, the rainfall started in the third week of March, which was considered as slightly late compared to the previous year. The amount recorded was below average but became average in mid-May. There were no dry spells reported across the three counties.

b) Crop production

In Nabingba and Ezo Central Bomas in Ezo County, mixed crops such as groundnuts, maize, sesame, and cowpeas were planted in the second week of March through April. While sesame, rice and long

term sorghum were planted in mid-June. Fall army worm affected the maize crops at early vegetative stages especially during the dry spell period when crops are weak as a result of moisture deficiency, while snails appeared when rainfall intensified, and crops had regained vigor in addition variegated grasshoppers, wild pigs and monkeys were some of the pests reported all had mild effect on the crops. However, the most common disease devastating cassava is the cassava tuber rot that has serious impact on cassava tubers and spreading rapidly through cassava stalk cuttings. Despite all these pests, the crops are relatively doing well and with ample and well distributed rains, the prospects for good production in the first season are high.

The cultivated area in Tambura and Nagero and number of farming households have increased due to relative peace and the return of the displaced persons. While in Ezo the cultivated area has slightly decreased because IDPS who were integrated into the community in the previous year have since returned to their place of origin. However, the areas under rice cultivation have increased in Ezo due to rice crop gaining importance as a commercial crop and easy cultural practices and storability nature of the crop.

In Maridi, Ibba and Yambio performance of the crop is good at the time of the assessment and prospects are high for better production in the first season. While in Mundri West, East and Mvolo, Maize was in tussling stage, sorghum in vegetative stage and sesame intercropped with sorghum were in vegetative stage and groundnuts in vegetative and flowering stages. There was no replanting of any of the crops and the prospects for the season are good harvest anticipated should the rains continue to be average in Mundri east and Mvolo and improved further to average in Mundri West. Harvest of maize should be on going while groundnuts are harvested in September.

This year's first cropping season in Western Equatoria is favorable because of average rains that are well distributed, relative peace and high market prices related to inflation has encouraged the farmers to cultivate more land. However, there are also other factors that may lead to post harvest loses for instance the very high atmospheric moisture content may affect the grain negatively making it susceptible to pest and diseases, poor storage, poor roads connecting supply areas to areas of demand and poor marketing at local level.

2.2 Central Equatoria State

a) Rainfall amount and distribution

The onset of rain in most of Central Equatoria State counties was late in April and according to farmers, the distribution and frequency was mixed. Some counties like Yei and Morobo experienced early rains in mid-March and followed by dry spell in early May for a period of two weeks with intermittent showers. However, in Juba and Terekeka counties the rains were established in mid-April. Generally, the amount of rainfall across the state was described by farmers as below average at the start of the season but progressed to average after the dry spell. According to the farmers the average rains are better for the crops seem to be doing well.

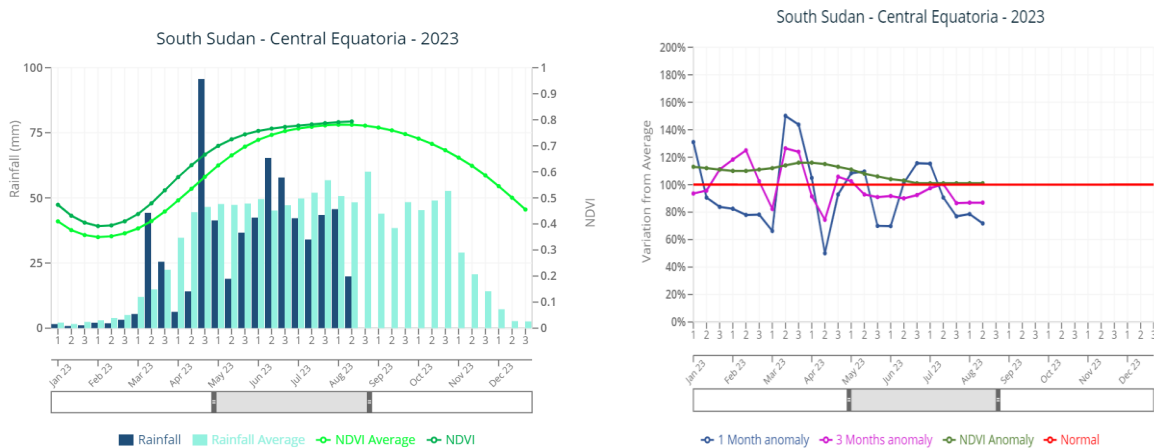


Figure 2. Rainfall and NDVI anomalies for Central Equatoria State

b) Crop production

Although land preparation such as bush clearing and felling of trees started early in January through March in anticipation of the early rains, the rains arrived in April, which was considered late. The late arrival of the rains also delayed planting between the end of April and the first week of May. Farmers are always careful before planting to ascertain if the rains are likely to continue for a long period of time and favor germination of crops. In Yei access to land was reported to be a problem especially in far fields due to insecurity. Farmers cannot access cultivation land three miles from the town. This limited opportunities to expand land which prompted farmers to cultivate empty plots of land within the town. While in Morobo, far fields are accessible and farming households in these counties have increased due to return of returnees from the neighboring countries of Uganda and Congo. High food prices and economic pressure on people has encouraged opening of more new lands. Planting started immediately after the onset of the rains in April and continued to May and June depending on the crop. In Terekeka and Juba access to land is not a problem, planting continued up to June for sorghum. The effect of the short dry spell made some farmers to replant and gap filling of maize in Rokon and Lokiliri Payams in Juba County.

Fall armyworm (FAW) was reported in all the counties of Central Equatoria state with mild to moderate effects on maize and early planted sorghum. There were no control measures taken by majority of the farmers, except few farmers using ashes as a means of control. Other reported pests include variegated grasshoppers, groundnuts rosette virus, millipedes, monkeys, squirrels, bush rats, termites, snails, local birds, white ants, and aphids. The effect of these pests and diseases on the crops was reported mild.

As control measures, farmers erected scarecrows in their farms and mobilized old people and young children to scare away the monkeys, squirrels, and rats.

Most farmers used their own saved seeds either from their previous harvest or purchased from the market and was supplemented by support from NGOs. The County supported with seed and tools distribution is Yei, while Juba and Terekeka were not supported with seeds and tools. Land preparation was done manually by most farmers using hoes, with a few progressive farmers using

tractor services. Hire rates for tractors have gone high by about 30 percent compared to last year. A feddan (0.42ha) in Yei is now cultivated at SSP 45 000 compared to the previous year when the rate was SSP 35 000 per feddan. In Morobo, UNHCR provided one tractor through ACROSS targeting returnees and giving them services at no cost. Whereas in Terekeka the government has 20 nonfunctional tractors and 4 private tractors that are functional. In Juba County, there only 3 private functional tractors and 4 nonfunctional government tractors. Although some members of the communities in these counties own a few livestock, the use of ox ploughs is limited. Terekeka County has the highest number of livestock, followed by Juba County.

Although this may not have been recorded, there is an increasing number of people returning from the refugee camps in Uganda and the DRC, their efforts to produce buffer crops in stabilizing the food security situation will yield fruits this year given some stability especially in Morobo.

2.3 Eastern Equatoria State

a) Rainfall amount and distribution

The rainfall started in the last week of March across Eastern Equatoria State, and it was described by farmers as early but below average. It established in April but was followed by 3 weeks of dry spell in mid-May to June. The impact of the dry spell on maize and sorghum crops was felt in Ikotos County, Magwi County in Magwi Payam and the whole of Western parts of Magwi County and this delayed planting in the County. In Greater Kapoeta, the effect of the dry spell was serious leading to crop stress especially in Kapoeta East.

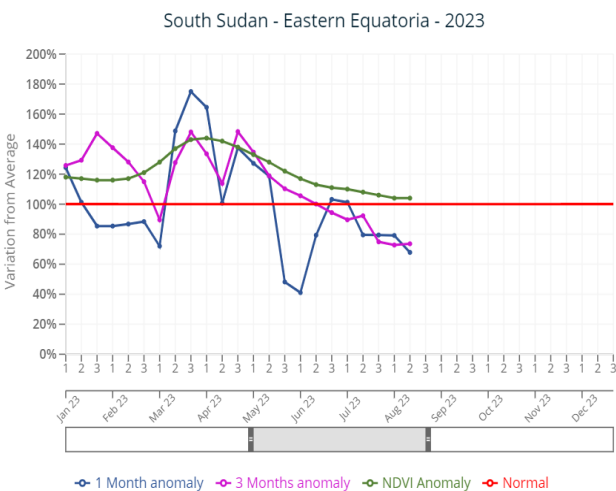
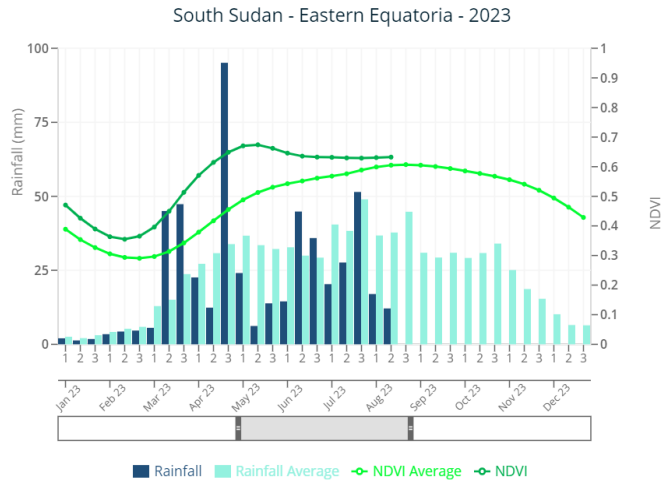


Figure 3. Rainfall and NDVI anomalies for Eastern Equatoria State

Planting took place from March to May in Torit and Magwi Counties while in Greater Kapoeta dry planting is done in March followed by normal planting in April after the onset of rains. Replanting was reported in most counties of the state especially in Narus Payam in Kaldo Boma of Greater Kapoeta, Western parts of Magwi, Torit and in the low land areas of Ikotos County. Majority of farmers and key informants reported that the cultivated area during the first season is slightly lower than last year especially in Torit and other areas affected by the prolonged dry spell, labour shortage and economic hardship that reduced the purchasing power of the rural households. However, the household's areas planted have slightly increased in the green belt agro ecological zone of Eastern Equatoria.



Figure 4. Stressed sorghum farm in Kapoeta East County

b) Crop production

Majority of the farmers reported to have used their own seeds during this cropping season supplemented by market purchase and development partners' particularly FAO and its partners and other NGOs. Social access to seed was common among rural small holder farmers. The prices of seeds are higher than at the same season last year. This is due to economic downturn facing the country. Large proportion of farmers in Eastern Equatoria use hand tools that are usually purchased from the local market and through distribution by development partners (NGOs). However, the use of animal traction is coming up in Magwi and Ikotos Counties, ploughing 1 feddan is at SSP 31 000 compared to SSP 20 000 in 2022. Eastern Equatoria State has more than 20 government tractors, but all are grounded. There are limited number of private tractors and the hire rates have increased. One round operation per feddan is at SSP 40 000 compared to SSP 21 000 last year.

The commonly reported pests include Fall armyworm with mild damage on maize in all the areas assessed, the occurrence of endemic pests and diseases include black ants, termites, monkeys, cassava mosaic virus, striga, stalk borers, small ruminants, and elephant destruction of fields at Pageri that happened in May. This has become a recurring situation in the area because the wild animals have been interrupted by human activities at the national park. Across Greater Kapoeta, African fall worm, local birds, stem borers and congress weed were reported with mild damage on crops,

The prospects of the first season look fair and production is likely to be slightly higher or same as that of the previous year despite the prolonged periods of dry spell.

3. Rainfall and crop performance in the Greater Bahr el Ghazal Region

In Greater Bahr el Ghazal, except for Lakes, which received its rain in April, all the other three states of Warrap, Northern Bahr el Ghazal and Western Bahr el Ghazal received their rains in May. A dry spell that started at the second week of June and ended in the first week of July was experienced almost similarly across the states. The effect of the dry spell in all the states resulted in delayed planting of

short-term sorghum, cowpeas, and vegetables, on top of affecting crops planted early in the season which included maize and sorghum.

3.1 Lakes State

Rainfall across Lakes state started in the last week of April, which was considered slightly late, however in Aluakluak and Abang Payams, rainfall started late in the second week of May and established in June. The rainfall distribution was considered poor, and amount was reported to be below average compared to that of the previous year. Dry spell immediately set in for three weeks from the third week of May to first week of June, with few showers in between, delaying planting in some areas up to early July.

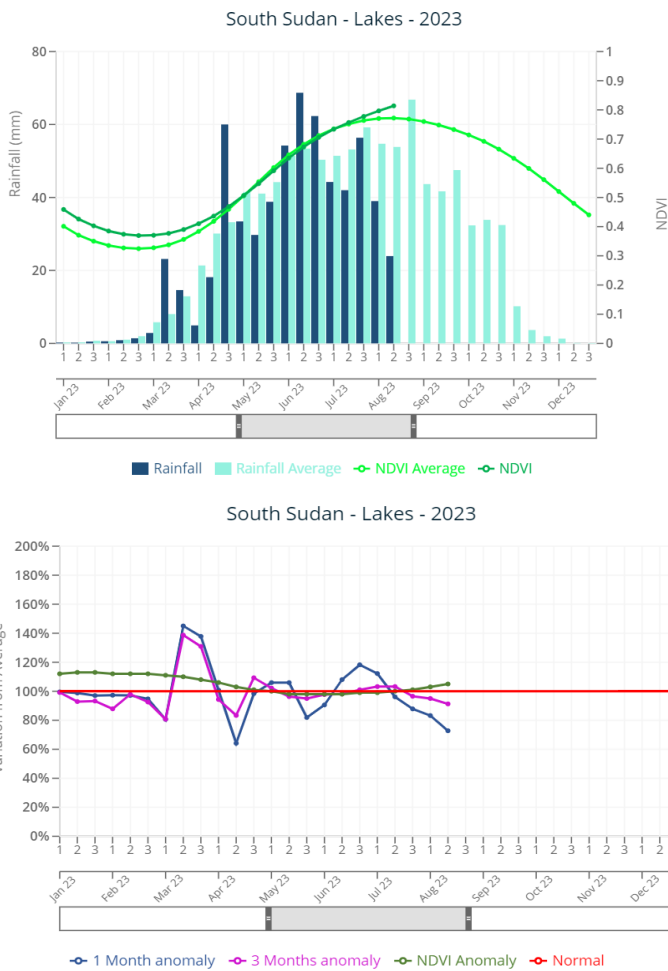


Figure 5. Rainfall and NDVI anomalies for Lakes State

Due to relative stability in the state, the cultivated area has slightly increased this year compared to the previous year due to relative stability and increased use of ox ploughs. Groundnuts are becoming a commercial crop and therefore more areas of groundnuts mixed with sorghum are cultivated. Due to the effect of the dry spell, replanting of groundnuts and late maturing sorghum was done in most

of the areas that had prolonged dry spell Land access was never an issue, except in Wulu, where there is conflict between farmers and pastoralist who use the county as a corridor to Western Equatoria for their livestock grazing.

Common pests and diseases in the state include local birds, foxes, monkeys, porcupines, grasshoppers, and termites. Stray cattle and shoats were also reported to be causing problems to farmers as they must to be chased away from the fields by either children or old people as control measures. Other farmers erect scarecrows for birds and squirrels as control measures. Groundnut rosette virus (GRV) was reported to have affected late-planted groundnuts, while FAW had minimal effect on maize and sorghum. Generally, the effect of pests and diseases was reported to be minimal.

3.2 Warrap State

The rainfall started in the third week of May in an erratic manner, and it was slightly late and below average compared to last year. It however established in second week of June, when farmers planted Groundnuts, maize, sorghum, and some vegetables. This process was however interrupted by dry spells from the third dekad of June to the second dekad of July.

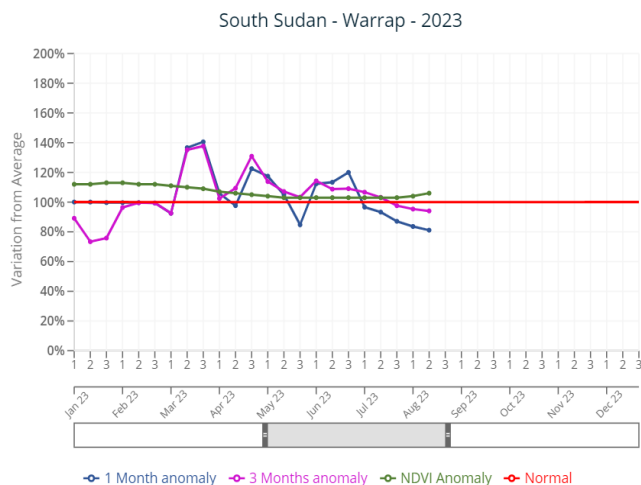
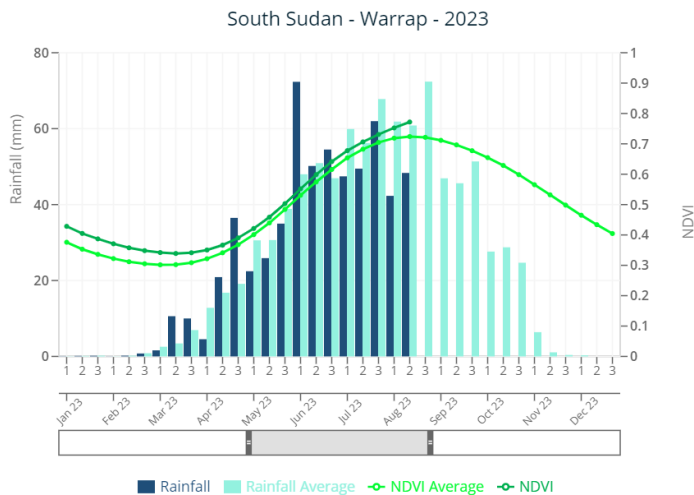


Figure 6. Rainfall and NDVI anomalies of Warrap State

The most common pests and diseases observed in the field include Fall armyworm on maize and sorghum with mild to average infestation level. Other pests that included monkeys, foxes, millipedes, squirrels, and roaming animals also had mild effect on the crops.

The main source of seeds was from farmers own saved seeds supplemented from market purchases, however the following partners NRC, For Africa, HARD, IRW, World Vision and TOUCH also provided improved seeds of rice, maize, sorghum, beans and cowpeas through seed fares and particularly World Vision. For Africa established local seed producers in the state in order to produce seeds locally and to cut down on cost of transportation of seeds from neighbouring countries. Most farmers used hand tools, but ox-ploughs and tractors were also used by a few. The Government has 60 tractors but only one was functional. There are also 30 private tractors available in the state and a big number of ox ploughs owned by most individual and group farmers. For instance, World Vision gave 800 ploughs to farmers across the state. Government tractors hire rates for one-time ploughing operation per feddan cost SSP 20 000 in addition to 20 litres of fuel at the cost of SSP 32 000 compared to SSP 10 000 and 20 litres of fuel at SSP 15 000 in 2022. While private tractor hire rates are slightly higher than the one of the Government at 40 000 compared to SSP 35 000 in 2022. Ox plough hire rates per one feddan in single operation cost SSP 30 000 compared to SSP 20 000 last year.

The season is expected to perform well after crops were able to catch up, following a prolonged period of dry spell. There is a likelihood of floods coming in September and October and chances for better production are good because the crops would have reached maturity stage and the effect of flood would be minimal.

3.3 Northern Bahr el Ghazal

Rainfall across the five counties of the state started in the first week of May and established in June described by respondents as late and below average in amount. There was dry spell in June through July for 2 to 3 weeks with moderate impact on sorghum and ground nuts in Aweil North, Aweil West, and Aweil Centre and with no impact in Aweil East and South. Sorghum was stressed in the highland counties of Aweil North, Aweil West, and Centre whereas sorghum in the flood prone counties of Aweil East and South are doing well and have better prospects than that of the previous year.

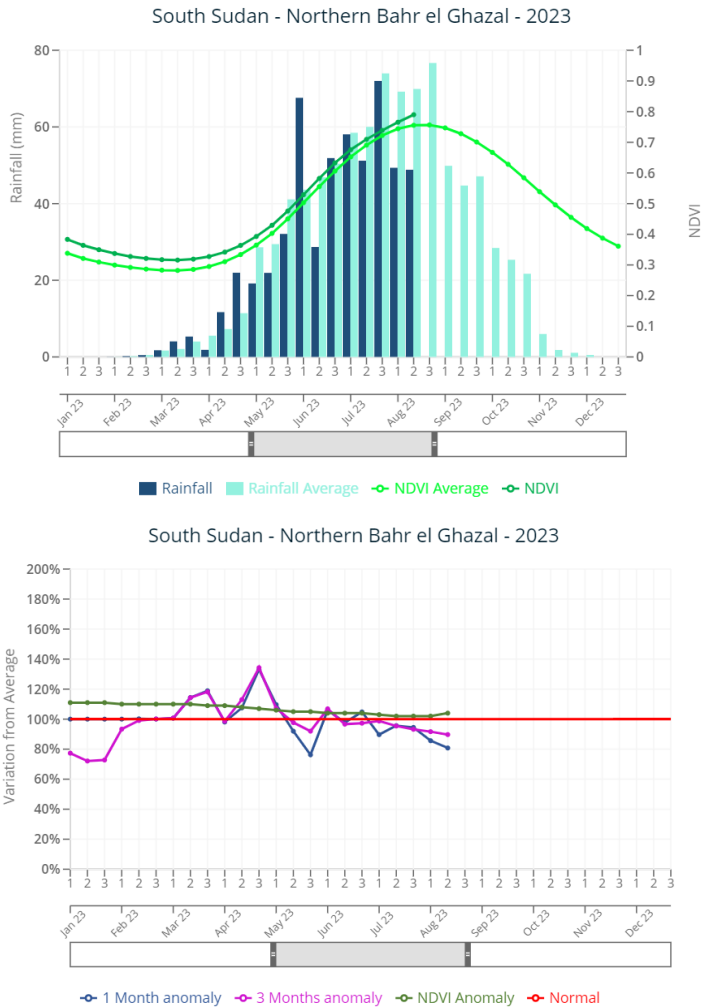


Figure 7. Rainfall and NDVI anomalies of Northern Bahr el Ghazal State

Most of the farmers used their own saved seed supplemented by market with few distributions from FAO and partners. Similarly, most farmers used hand tools for cultivation, but progressive and wealthy farmers use ox-ploughs and tractors. The most preferred sorghum land races include Yar, Malual, Rap Chol, Nyanjang, Nyithin, Luel Jang, Athok and Jur Chak. Sorghum and groundnuts are planted in May through June and due to the prolonged dry spell in June/July for 2 – 3 weeks, replanting of sorghum was carried out in July. There are 4 functional tractors in Aweil Centre one for Government and 3 privates. Aweil East has 5 functional private tractors; Aweil South has 4 functional private tractors while Aweil West has 3 private functional tractors and Aweil North has 4 functional private tractors. There are also considerable number of Ox and donkey ploughs in Aweil East and West especially in Marial Bai and Ayat payams. The cost of tractor hires services differs per county, in Aweil Centre one ploughing operation for one feddan is at SSP 15 000 without 20 litres of fuel compared to SSP 12 000 last year. In Aweil East one feddan is ploughed at SSP 20 000 in addition to 20 litres of fuel compared to the same operation at SSP 15 000 last year. In Aweil South one ploughing operation per one feddan is at SSP 15 000 without fuel while in Aweil West one operation per one feddan is SSP 180 00 compared

to SSP 15 000 last year without fuel and in Aweil North one feddan is ploughed at SSP 15 000 without fuel compared to SSP 12 000 last year. There is limited land access around homesteads and normal access in far fields. The area cultivated this year has slightly decreased due to fear of floods by farmers which has been persistent in the past three years and late start of the rains and insufficient seeds associated with poor harvest last year.

There were few incidences of FAW infestation recorded but the level of infestation was mild. However, Striga weeds are having significant impact on sorghum fields across all the counties visited. Other pests reported were grasshoppers, millipedes, and rats, with mild effects on crops.

The agricultural season looks promising although it is too early to judge. Crops are doing well across the state. Crops from lowland flood prone areas are doing much better than those in the high land areas. Majority of sorghum crops are at vegetative stage with a few in flowering stage. Although is slight decrease in area planted, production prospects will likely be good.

3.4 Western Bahr el Ghazal

The rainfall in 2023 cropping season started late around mid-May in most cropping areas across the three counties of Jur River, Raja, and Wau although some areas received early rains at the end of April and Early May. Localized dry spells occurred in June through July for 2 to 3 weeks but with intermittent showers that were sufficient to avoid moisture stress with no significant effect on the crops. The amount of rain during the season was generally below average with poor distribution and lower than that of the previous year. There were no cases of floods or water logging reported.

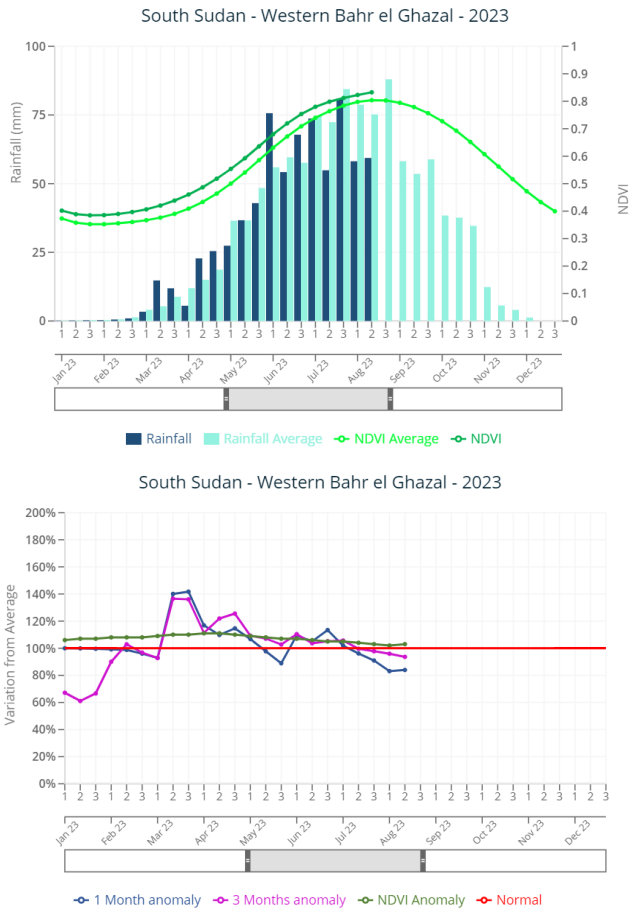


Figure 8. Rainfall and NDVI anomalies of Western Bahr el Ghazal State

Access to near or far fields was reported to be normal in all the three counties visited due relative peace because of improved security across the state. Some few farmers may be reluctant to cultivate in far fields because of fear of destruction of their crops by wild animals and theft. However, respondents have indicated increase in cultivated area compared to the previous year in all the three counties of the state. The average cultivated area in Jur River in 2023 is estimated to be 0.8 hectares compared to 0.7 hectares in 2022. In Raja 0.9 hectares this year compared to 0.6 hectares in the previous year 2022 and 0.6 hectares in Wau compared to 0.4 hectares last year. The main crops grown in WBEG state are sorghum, groundnuts, sesame, cassava, maize, and sweet potatoes. Cassava stocks were lost in the three counties during the conflict but now farmers have stated to propage enough stocks. Majority of the farmers used their own saved seed supplemented by market purchase and distributions made by development partners particularly FAO and other NGOs. The communities also practise borrowing seed stocks from neighbours or close family members especially for cassava stocks.

Generally, most of the farmers use hand tools for land preparation and the related cultural practises, these tools are either purchased from the market or provided by NGO partners. Western Bahr el Ghazal state has 16 government tractors, but all are non-functional. So far there are only two functional private tractors each belonging to Catholic University and University of Bahr el Ghazal

respectively and the hire rates are SSP 30 000 in addition to 2 gallons of fuel compared to SSP 20 000 per feddan last year. However, the efficient utilization of these existing tractors is highly constrained by shortage of spare parts and high fuel prices for instance the price of one gallon of fuel was SSP 7 000. In addition, draft animals (Animals trained to plough) are also used by farmers especially in some areas of Jur river and Raja Counties and the hire rates was 30 000 compared to SSP15 000 last year.

The only migratory pest reported during the season was Fall armyworm which occurred in all the three counties visited causing damage on seedlings particularly maize and sorghum. The damage caused by this pest was reported to be average. The occurrence of endemic pests was within the normal range causing mild damage in all the three counties. Other commonly reported pests and diseases include millipedes, grasshoppers, termites, red monkeys, stalk borers, squirrels, local birds, domestic animals and striga.

The season in the State is expected to perform better despite the late onset of rains and the dry spells in some areas in the state. The improvement of the rains in July, calm security situation will all add to likelihood of good production compared to that of last year.

4. Rainfall and crop performance in the Upper Nile Region

The rainfall in Greater Upper Nile (Jonglei, Unity and Upper Nile) started in May and dry spells that were similar for all the three states - starting in June and lasting for a period of two to three weeks delaying weeding and replanting. Other locations had showers that were sufficient for crop growth, however maize has to be replanted in Mayendit due to the persistent dry spell.

4.1 Unity State

Rains started in the last dekad of May across the three counties of Guit, Mayendit and Leer which was considered late compared to the previous year whereas other areas in the state received their rains in early June. There were dry spells for 2 to 3 weeks in Guit and Leer in July with intermittent showers that are sufficient to avoid moisture stress, however in Mayendit the three weeks dry spell caused damage to maize crops leading to replanting at end of July. The rains were erratic and below average and lower than that of the previous year.

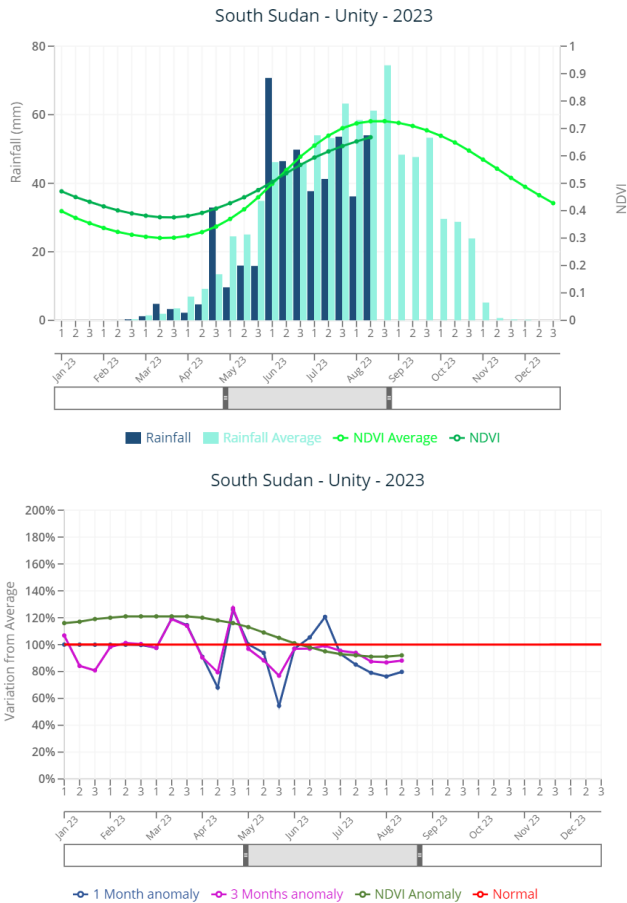


Figure 9. Rainfall and NDVI anomalies of Unity State

The continuous occurrence of flood for the last three years has discouraged most households to cultivate large areas of land, however the returnees who came from Sudan earlier were able to cultivate. Other factors that encouraged or even forced the maize, sorghum, and some vegetables communities to cultivate despite the impeding flood was high food prices and the current economic pressure. The average area cultivated per household in Leer and Mayendit slightly increased due to availability of labour and participation of returnees. However, in Guit the cultivated area has remained like that of the previous year.

The main crops grown in the three counties include maize sorghum and vegetables. In Southern parts of the state most farmers prefer maize because sorghum is highly affected by birds. Majority of the farmers used seeds provided by development partners ICRC, NRC, CH, and Hope Restoration. In Guit there were no seeds distribution done, and the farmers used their own saved seeds supplemented by market purchase. There is also borrowing of seeds from relatives or from neighbours. The prices of seeds were high during the planting for instance a small cup of maize was for 100 SSP compared to 500 SSP in the previous year.

All farming households in the visited counties use hand tools that include hoe and malodas for land preparation and other related cultural practices. There are no functional Government or private tractors in the counties visited.

There were few cases of pests that include grasshoppers and small ruminants and diseases reported. FAW infestation was reported as minimal, but local birds are expected as the crops advance to maturity. Other pests including rats and foxes will likely have minimal effect.

Most of the crops in Guit and Leer counties were in flowering stage, while in Mayendit there was a dry spell for a period of three weeks. The maize crops were in vegetative stage due to the late planting and replanting done in July.

4.2 Jonglei State

The rainfall started in early May in most counties of the State and were considered late when compared to the previous year. The rainfall amount was considered to be below average and lower than that of the previous year. A prolonged period of dry spells for a period of three weeks in mid-May to June was reported. In Twic East, the flood waters from the previous 3 years are still present but receding at a slow pace and still disrupting farming activities, except for a few locations such as Wornyon in the canal area, and the eastern side of the canal where maize is being cultivated. In Bor South County there were no reports of fresh floods only a few areas being farmed on including Anyidi, Makuac and Malou in Kolnyang payam, while the rest of the areas including Baidid that were inundated with flood water are beginning to recede and if floods do not come again in September, Baidid will likely be farmed in the coming year.

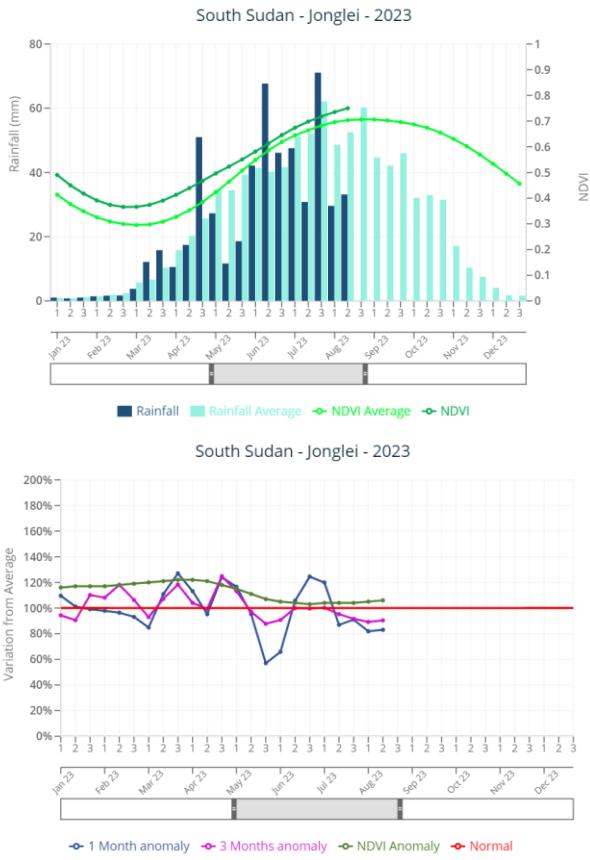


Figure 10. Rainfall and NDVI anomalies of Jonglei State

Planting started immediately after the onset of the rains in May through June. This was followed by replanting at the third week of June for sorghum and gap filling for groundnuts because of the dry spell. Only few farmers received seeds and tools through FAO partners like NPA and direct distribution by FAO. Most farmers used their own saved seeds or purchased their seeds and tools from the market. Land access is limited for far fields due to insecurity caused by community conflict between Bor South and Pibor Administrative Area. In Bor South, the traditional land races of sorghum are planted in Makuac and Anyidi and doing well, while groundnuts are planted in Malou in Kolnyang Payam and the planted areas have increased compared to the previous year, for instance cultivated average area for sorghum is 0.49 hectares compared to 0.38 hectares last year. While groundnuts area is 0.59 ha compared to 0.48 ha last year.

There were no serious pests and diseases reported in Bor South. However, there were few cases of FAW and Striga were reported with limited effect on the crops. There were no specified control measures for these pests reported by the respondents. Although about 80 percent of the population own cattle, there is no mention of ox ploughs being used as communities need to be educated on the importance and advantages of using oxen for farming. Some farmers gave vague reasons why they could not use ox ploughs, such as treasuring their animals and making them work is shameful and against their cultural norms, in addition to the presence of heavy clay soils in the farms. Planted areas are higher than those of last year, and the crops are performing well and if there will be no additional

floods good harvest will be realized in October. The groundnuts in Kolnyang are doing well and the sorghum in Makuac and Anyidi are nearing flowering. If all adverse factors are kept at bay, production will likely be good for the farmed areas.



Fig11. Groundnuts and sorghum fields in Kolnyang Payam in Bor South County, 4 August 20



Fig 12. Early harvest of groundnuts at Kolnyang Payam in Bor South County 4 August 2023

4.3 Upper Nile State

The rains in Renk, Maban and Melut started early in April but established in May. The rainfall amount was below average but better for the crops compared to that of last year that caused flooding and water logging. However, in mid-June dry spell set in for a period of 2 to 3 weeks moderately affecting maize in Maban. In other locations, sorghum crops were stressed delaying weeding and replanting. In

Maban the cultivated area of the local community remained the same or slightly decreased due to shortage of seeds caused by poor harvest last year and fear of flooding. But for the refugee's community, the cultivated area slightly increased due to cash for food support given to them by WFP and reduction in food ratio that triggered increase in farming. In addition, the number of farming households has increased due to influx of returnees and refugees from the crises in both Ethiopia and Sudan.

Input supply is in high demand, hand tools and seeds that include sorghum wad Ahmed, and Gadam Hamam are mainly from the market or from kinship support. There are no tractors in Maban, but in Melut semi mechanized scheme there are 135 functional tractors and more than 600 functional tractors in Renk semi mechanized scheme. Tractors hire services for one season (3 months) is SSP 2 100 000 broken down as follows: tractor hire is SSP 1 500 000 and hire of disc is SSP 600 000. Plowing of 120 feddan (marbu for two operations plowing and harrowing cost SSP 720 000 in addition to 2 drums of diesel. Two operations of plowing 5 feddan (jadaa) and harrowing cost SSP 100 000.

The cultivated area in Melut commercial farms has increased this year due to increase in number of functional tractors and suitable conditions for cultural practices resulting from below average to average rains and the cultivated area is estimated at 90 000 feddan (37 800 ha). While in Renk County the cultivated area has slightly decreased due to increase in fuel prices and the estimated cultivated area is 300 000 to 350 000 feddan (126 000 to 147 000 ha). In the commercial farms 80 percent of the cultivated area is sorghum, 10 percent is sesame and 10 percent other crops that include maize groundnuts and assorted vegetables. The reduction in sesame area cultivated is attributed to less demand from commercial companies in Sudan due to the current conflict.

There is no use of fertilizers or manure due to high cost and accessibility, but commercial farmers in Renk and Melut recommended the use of selective herbicide to control weeds and provision of credit through Agricultural Bank of South Sudan as an incentive for good yields and production.

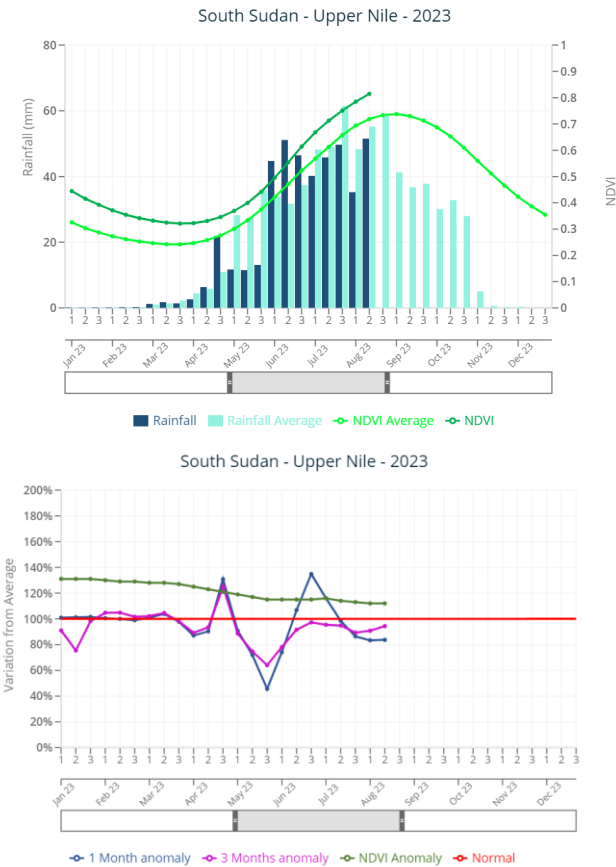


Figure 13. Rainfall and NDVI anomalies of Upper Nile State

The common pests that include local birds, termites and astray livestock have been reported. There were few cases of Fall armyworm reported affecting maize and sorghum crops but with mild effect. Grasshoppers were reported to have moderately affected sorghum in Gager and Remela in Renk County.

5. Conclusion

- The rainfall across the country generally started about one or two weeks late, and were followed by dry spells in some locations, before the rains established around July, with May and June experiencing erratic and below average rains in most parts of the country.
- The weather extremes have affected various parts of the country differently. In Eastern Equatoria State, Kapoeta East has been the most affected by the dry spells with most of the agricultural fields planted with sorghum and maize seriously stressed. Although dry spells had serious impact in Greater Equatoria in the first season, the central and northern parts of the country, seemed to have survived the effect of the dry spell due to most of the areas in low lands having high moisture retention capacity. In addition, some of these areas were inundated by floods in the last three years and still have high moisture content. There are no reports of floods to date, but there is possibility of its arrival in September/October and by

then crops would be in maturity stage and apparently there will be minimal damage related to post harvest handling. The improvement of rains in August will enable stressed crops in high land areas to regain health in the central and northern parts of the country.

- In Greater Equatoria, the first season harvest of maize and groundnuts is ongoing, while in the semi mechanized schemes in Renk and Melut, planting of short Arfa Gadmak, continued into the second half of July. Main pests like Parthenium in Kapoeta, Babathiro (*chromolaena odorat*) in Western Equatoria and Striga all over the country have continued to persist, while other minor pests are present in acceptable levels of infestation with mild damage to crops.
- The cost of mechanization is one of the limiting factors when it comes to area cultivated especially in the semi mechanized schemes, with tractor hire rates increasing to about 50 percent compared to last year. Moreover, the lack of spare parts for government tractors and the extremely high cost of fuel for the few functional tractors continue to put mechanization out of reach of most small-scale farmers. Farmers in the agricultural schemes in Renk, Melut and Manyo are usually supplied with tractors and spare parts from Sudan which is now not due to the war in the country. The cultivated areas for sesame have reduced in the semi mechanized schemes because farmers fear lack of market as the situation in Sudan remains volatile.

Recommendations

- Timely provision of various types of vegetable seeds including cowpeas and sweet potatoes, as well as planting materials to benefit from the receding flood water from last year's floods.
- For South Sudan to come out of food insecurity impasse, good agricultural policies, provision of support to farming communities, including extension services, and the promotion and use of draught animal power and tractors, are some of the few options which the Government could consider promoting. The demand for both ox and donkey ploughs and tractors, despite the expensive hire rates, are indications that farmers are willing to expand their agricultural land.