



Kenya Crop Conditions Bulletin

August 2021

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National Synthesis (Maize, Beans, Wheat)

Overview

- Crop conditions are favourable due to rains received in July and August in the North Rift and parts of Central and South Rift except in Baringo, Samburu, lower parts of West pokot and Laikipia Counties where conditions are under watch due the continued dry spell
- Harvesting of beans completed in most regions except in parts of South Rift, while harvesting of maize is complete in Eastern, coast, Nyanza, parts of western and central with average to below average yields realised depending on the region
- Total crop failure of maize crop was experienced in Kitui, Tana River, Lower parts of West Pokot and Kibwezi East in Makueni County
- Land preparation and planting started in a few counties for the short rains crop especially in Western, Lower Nyanza

In the Bulletin

National Synthesis 1

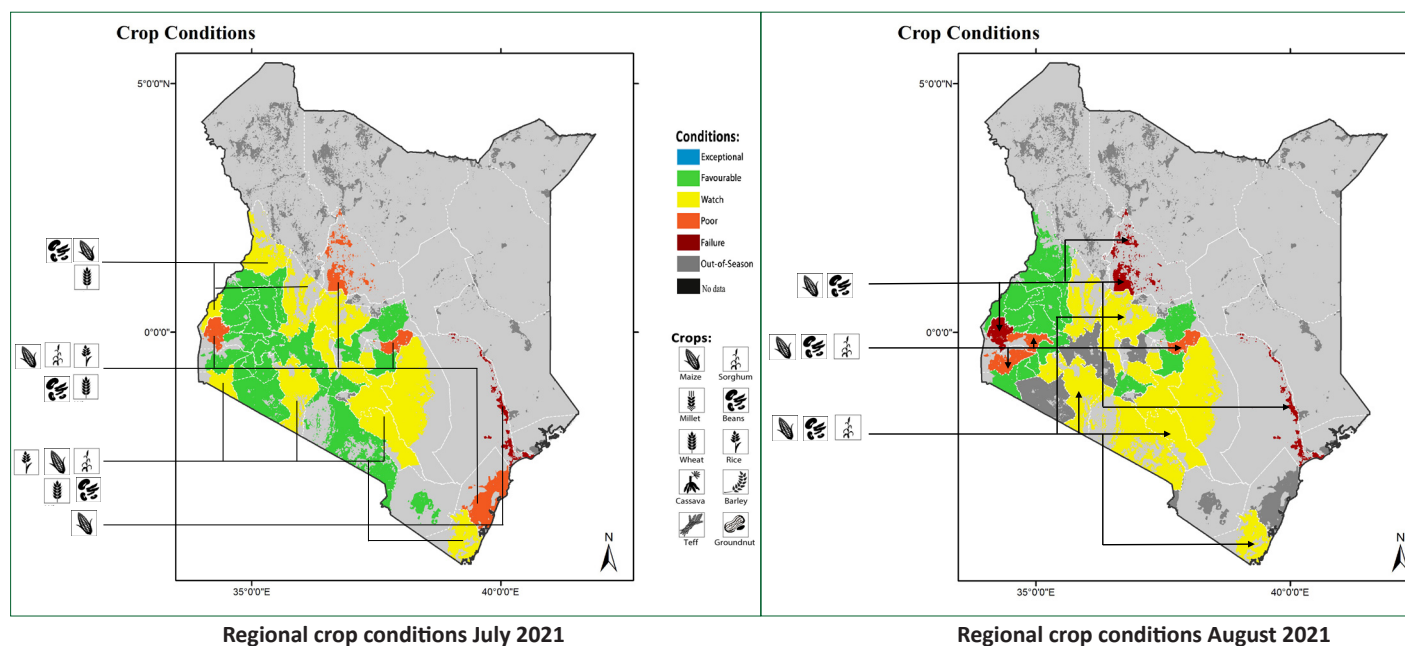
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Map showing regional crop conditions information in Kenya for July 2021 and August 2021 for maize, beans, wheat, green grams, cowpeas, rice and sorghum. The crop monitor map is based on a combination of several variables including remotely sensed data, ground observations, field reports, national and regional experts. Crops with conditions that are other than favourable are labelled on the map with the driver for the resultant condition. The situation in the country has deteriorated in the last month with more areas coming under watch due to lack of rains as compared to last reporting period.

OUTLOOK (Kenya Meteorological Department (KMD)/State Department for Crops Development (SDCD)

The outlook for September 2021 indicates that several parts of the country will continue to experience generally sunny and dry weather conditions. However, the Lake Victoria Basin, the Highlands West of the Rift Valley, Central and Southern Rift Valley are likely to experience near-average rainfall with a tendency to above average (slightly enhanced) rainfall. Occasional light morning showers are expected along the Coastal Strip while the Highlands East of the Rift Valley (including Nairobi County) are likely to experience occasional afternoon showers and cloudy conditions in the mornings especially at the beginning of the month.

Assessment by Region

North Rift Region

Due to improved rainfall, the crop condition in Nandi, Uasin Gishu, Elgeyo Marakwet and Trans Nzoia Counties is now favourable with forecast estimates of 70% of the long term average production expected. Main challenges: Fall Army worms reported in parts of Trans Nzoia and Baringo counties; and Maize Lethal Necrosis Disease reported in parts of Elgeyo Marakwet County. Wheat in Uasin Gishu, Trans Nzoia and Elgeyo Marakwet doing well. In Baringo, Samburu, Laikipia and West Pokot Counties, maize crop performance is lower (50-30% of long-term average) but sorghum, wheat, Irish potatoes and beans are favourable. Overall, the region will achieve 70% of the long-term average for maize.

Harvesting of maize and wheat have not started; harvesting of sorghum, beans, potatoes going on. The beans crop wilted in Samburu while in Laikipia the crop was under watch with 35% expected and 60% expected in Uasin Gishu and beans are in favourable condition in West Pokot. Wheat is at vegetative to reproductive stage with favourable conditions being reported in all the Counties except in Laikipia where 35% of the planted crop is experiencing moisture stress. Wheat performance will be good if conditions remain favourable. Harvesting is ongoing for early planted Irish in Nandi, Elgeyo Marakwet and Uasin Gishu with above average yields being experienced while in Laikipia and Baringo the crop is at maturity to harvesting stage and normal yields is expected. Sorghum condition is favourable at reproductive stage in West Pokot, Baringo, Uasin Gishu, Laikipia and Nandi Counties. Harvesting has commenced in Elgeyo Marakwet County. Harvesting of other crops such as green grams, millet and cowpeas is ongoing in different parts of the region.



Figure 1: Farmer happy with his maize crop in Keiyo North Sub-county

Table 1: North Rift Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag) LR	LTA Achieved Area(Ha)	LTA Achieved Production	% Achieved area vs LTA	% Achieved Production vs LTA
Baringo	31,083	366,245	37,614	712,350	83%	51%
Elgeyo Marakwet	30,200	1,004,500	30,970	3,153,013	98%	32%
Laikipia	25,500	316,450	22,031	382,938	116%	83%
Nandi	65,300	2,000,000	63,103	2,008,469	103%	100%
Samburu	9,600	50,000	7,185	70,918	134%	71%
Trans Nzoia	105,110	4,529,950	102,896	4,794,879	102%	94%
Turkana	282	888	3,948	38,022	7%	2%
Uasin Gishu	104,581	3,837,935	103,588	4,235,958	101%	91%
West Pokot	39,732	794,640	30,532	728,511	130%	109%
Total	411,388	12,900,608	401,868	16,125,059	97%	70%

South Rift Region

Maize and Beans conditions are favourable only in Kericho and upper zones of Bomet and Nakuru with forecast production of 85%. Maize performance in Narok is down to about 68% of long-term average. In lower parts of Nakuru (Lare, Visoi, Solai and Kampi ya moto in Rongai) and lower parts of Bomet and Kajiado, maize is poor with less than 40% expected production. Rains resumed in July but large portion of the crop have not recovered well. Harvesting is ongoing in lower parts of Narok, Bomet and Kajiado. Wheat performed well in most parts of Narok but was heavily affected by Quelea Quelea birds.

Beans crop condition is favourable in the region except in Nakuru and Kajiado Counties. The region forecast production declined by 19% compared to the long term average for maize.

Table 2: South Rift Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag)LR	LTA Achieved Area(Ha)	LTA Achieved Production	% Achieved area Vs LTA	% Achieved Production vs LTA
Bomet	30,763	369,156	25,951	495,001	119%	75%
Kajiado	6,670	47,675	6,780	71,895	98%	66%
Kericho	35,068	1,104,345	35,397	1,138,504	99%	97%
Nakuru	81,246	1,794,208	80,374	2,242,768	101%	80%
Narok	93,165	1,628,637	83,159	1,839,387	112%	89%
Total	246,912	4,944,021	231,661	5,787,555	106%	81%

Central Region

Maize crop is poor in lower parts of Kiambu, Muranga and Nyeri counties; but the crop is doing well in the upper/higher regions. The average maize forecast production compared to long term average is 75% for Kiambu, Muranga and Nyeri counties. In Kirinyaga 90% of forecast production is expected. The regions expected maize production is normal compared to the long term average with a decline of 4 percent.

Beans crop yields follow the same trend as maize. Harvesting is ongoing. Wheat is in favourable condition in Nyandarua and Nyeri (90%) while potatoes are in favourable condition in the whole region (95%). In Kirinyaga, harvesting almost finalized in all farms. Quelea birds menace is being addressed through bird scaring and aerial spraying of pesticides. Normal production expected.



Figure 2: Maize ready for harvesting in Kirinyaga

Table 3: Central Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag)LR	LTA Achieved Area(Ha)	LTA Achieved Production	% Achieved area Vs LTA	% Achieved Production vs LTA
Kiambu	16,800	194,253	20,075	309,740	84%	63%
Kirinyaga	16,573	257,975	17,809	245,692	93%	105%
Murang'a	35,015	348,680	34,709	379,016	101%	92%
Nyandarua	17,100	410,004	17,212	288,128	99%	142%
Nyeri	13,985	181,116	16,720	232,266	84%	78%
Total	99,473	1,392,028	106,524	1,454,842	92%	96%

Lower Eastern Region

Kitui and Kibwezi East in Makueni experienced total maize crop failure, while Machakos and Makueni forecast of 50-40% of the long-term average. Beans, Green grams and pigeon peas are favourable in Machakos and Makueni (about 50%-60%) but poor in Kitui (10%). The region was highly affected by late onset of rains and early cessation of rains with approximately 56% achieved production for maize, with Kitui experiencing total crop failure. Green grams are favourable in parts of Makueni realizing 60% of yields, Machakos 25% but a failure in Kitui and parts of Makueni realizing less than 5%. Harvesting is complete for pulses. Generally, below normal yields have been achieved in the region due to early cessation of rains.

Table 4: Lower Eastern Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag)LR	LTA Achieved Area(Ha)	LTA Achieved Production	% Achieved area Vs LTA	% Achieved Production vs LTA
Kitui	32,553	19,712	31,095	140,873	105%	14%
Machakos	71,944	359,857	78,064	537,106	92%	67%
Makueni	54,121	253,012	68,864	294,211	79%	86%
Total	158,618	632,581	178,023	972,191	92%	56%

Upper Eastern Region

Dry spell affected maize performance in the region, with forecast production of 60% in Meru and Tharaka Nithi, and 50% in Embu. The average production of the region for maize is approximately 72% as a result of the late onset and dry spells in the critical flowering period. Beans also performed poorly due to very wet conditions in April-May. Wheat crop is doing well in Meru (90%). Green grams yields achieved in Embu were slightly higher than those expected while in Tharaka Nithi an average 2 bags per acre realised. Wheat in Meru is in favourable condition in large scale farms with fairly good yields being expected but worsening in small scale farms where 2-3 bags are expected.

Table 5: Upper Eastern Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag)LR	LTA Achieved Area(Ha)	LTA Achieved Production	% Achieved area Vs LTA	% Achieved Production vs LTA
Embu	20,046	201,579	17,595	231,734	114%	87%
Garissa	85	147	73	674	116%	22%
Mandera	1,514	6,947	1,538	7,473	98%	93%
Marsabit	340	965	291	1,485	117%	65%
Meru	22,320	199,565	26,335	332,609	85%	60%
Tharaka Nithi	12,700	151,940	11,259	142,047	113%	107%
Wajir	120	240	300	3,097	40%	8%
Total	57,125	822,151	57,391	719,118	95%	72%

Coast Region

The maize crop is fair in Kwale with about 35% production forecast compared to long term average. The crop is very poor in Kilifi (25%) and Tana River (5%). Generally, the maize crop in the region performed poorly with approximately 18% of the long-term average expected. The forecast for Taita Taveta is 65%.

Green grams were in various stages at the coast from podding and drying in Kwale and Kilifi, and in Taita Taveta the crop has been harvested. Green grams and Cowpeas were in favourable conditions in Kwale but in poor conditions in Taita Taveta.

Overall Crop conditions were only reported as favourable in Kwale with rest of the coast region reporting from watch to poor conditions, to crop failure in Tana River. In both Taita Taveta and Tana River, irrigated crops like rice are doing well.

Table 6: Coast Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag)LR	LTA Achieved Area(Ha)	LTA Achieved Production	% Achieved area Vs LTA	% Achieved Production vs LTA
Kilifi	21,718	86,823	60,647	578,820	36%	15%
Kwale	42,070	186,760	55,847	533,606	75%	35%
Lamu	15,750	84,888	19,097	314,417	82%	27%
Mombasa	210	435	584	4,835	36%	9%
Taita Taveta	4,550	14,875	8,061	87,553	56%	17%
Tana River	2,684	1,284	3,026	42,839	89%	3%
Total	86,982	375,065	147,262	1,562,070	62%	18%

Nyanza Region

Maize did not perform well in Kisumu, Siaya, Homa Bay and Migori (37-78% of long-term average). Maize performance in the upper zones of Kisii and Nyamira are expected to be normal. Harvesting is going on in some and complete in other counties. Overall average expected production of maize is 77% of the long-term average in the region.

Bean production conditions were favourable in Homabay, Siaya, Kisumu and Migori, however the yields were slightly reduced due to the early cessation of rainfall. Beans production is slightly below normal in Kisii and Nyamira due to fungal infections. Sorghum performed better in all the counties (80%) while beans conditions were average for the whole region.

Table 7: Nyanza Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag)LR	LTA Achieved Area(Ha)	LTA Achieved Production	% Achieved area Vs LTA	% Achieved Production vs LTA
Homa Bay	46,322	557,076	43,652	714,294	106%	78%
Kisumu	37,730	180,000	29,507	491,183	128%	37%
Migori	46,400	694,723	45,448	890,672	102%	78%
Siaya	48,300	386,170	46,817	748,062	103%	52%
Kisii	34,750	625,500	37,801	867,098	92%	72%
Nyamira	28,060	645,700	24,458	446,923	115%	144%
Total	241,562	3,089,169	227,683	4,158,232	108%	77%

Western Region

In Western region, Maize performance is good in Kakamega and Vihiga (100-95%) and slightly poor in Busia and Bungoma (76%).

Harvesting is complete Busia and Vihiga and in the lower zones of Kakamega and Bungoma Forecast production is 94% which is almost normal. Beans performed well in the region. Land preparation and planting has started where harvesting is complete.

Table 8: Western Region Maize Production Forecast

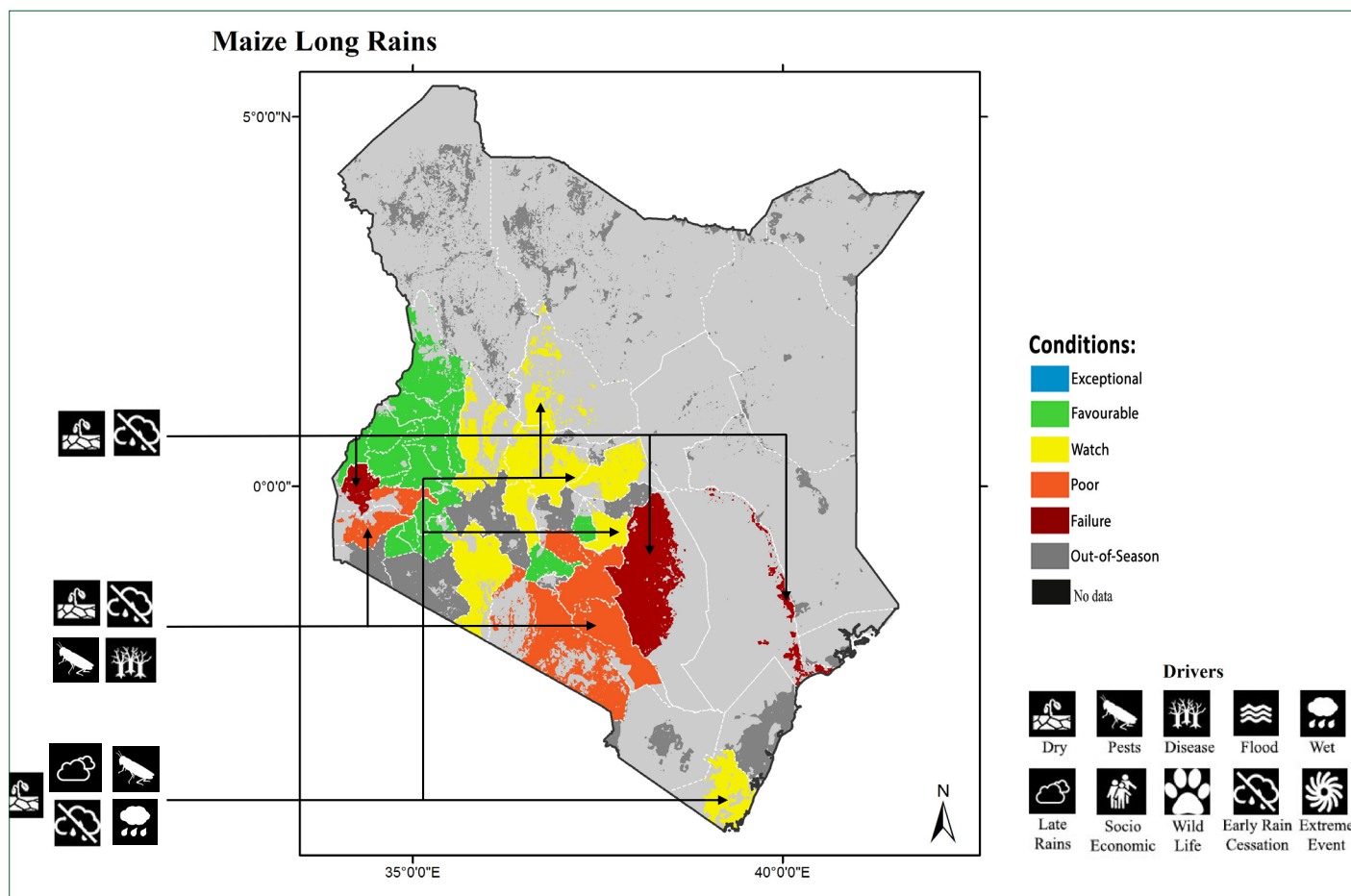
County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag)LR	LTA Achieved Area(Ha)	LTA Achieved Production	% Achieved area Vs LTA	% Achieved Production vs LTA
Bungoma	90,750	2,706,560	89,723	3,383,202	101%	80%
Busia	31,000	467,670	29,441	459,267	105%	102%
Kakamega	78,500	2,132,845	76,042	2,353,049	103%	91%
Vihiga	14,730	296,228	18,249	290,420	81%	102%
Total	461,892	10,547,324	445,116	12,273,494	98%	94%



Figure 3: Harvesting and land preparation in Busia county

Assessment by Crop

Maize Conditions Long Rains Summary



Maize conditions are favourable in the North Rift but under watch in Baringo, Samburu and Laikipia Counties. Conditions are poor for lower Eastern, Coast, parts of Central, parts of Western and lower Nyanza regions where the crop has been harvested and poor yields achieved.

A total crop failure was experienced in Kitui, Tana River and lower parts of West Pokot and Makueni Counties. The trend is worsening in the areas under watch and poor conditions with the continued dry spell.

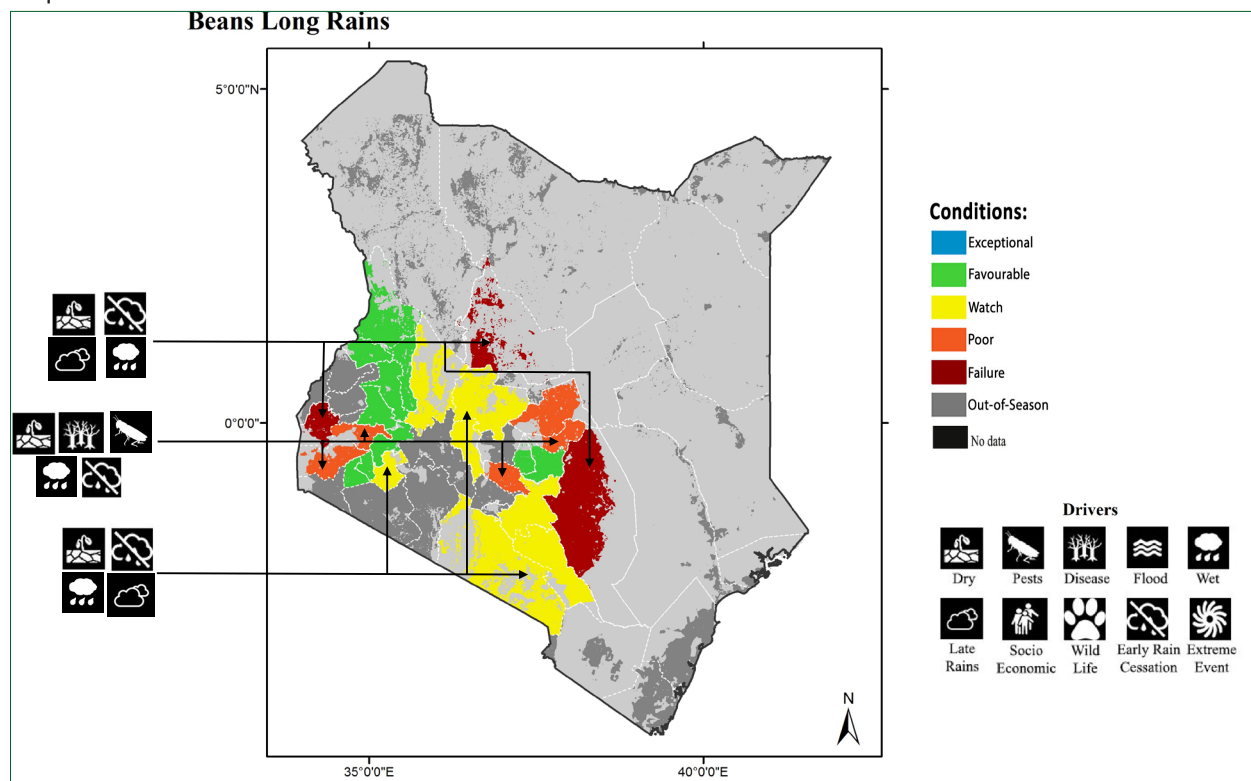
Conditions are becoming favourable in North and South rift counties with resumption of rains during the months of July-August and the crop is at ripening stage with minimal harvesting reported in the hotter parts of the region. Slightly below average yields are expected since the crop suffered moisture stress during top dressing; and some farmers were not able to do top-dressing at all in several areas due to the dry conditions. Production for maize is expected to be 30 million bags down from the long term average of 34 million bags (90kg bags).



Figure 4: Harvested maize in Ithanga ward, Gatanga Sub-county

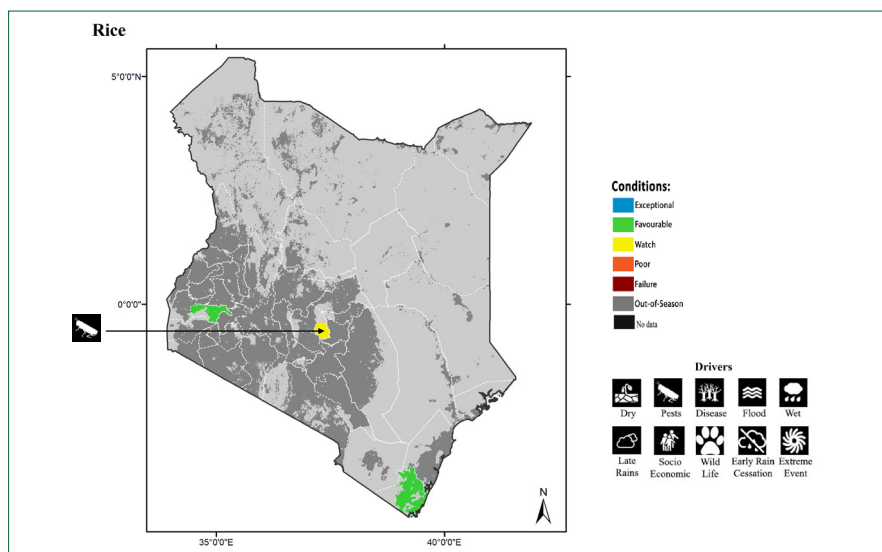
Bean Conditions Long Rains

Conditions are favourable in western, parts of North Rift, Kirinyaga, Embu and Upper Nyanza. Conditions are poor in West Pokot, Kitui, Tharaka-Nithi, Meru, Muranga, Nyeri and Lower Nyanza counties. Conditions are under watch for the rest of the country. Average to below average yields expected. Expected production to drop to 5 million bags compared to long term average of 5.5 million bags. Main bean producing areas of eastern region were highly affected by inadequate rains.



Rice Conditions Long Rains

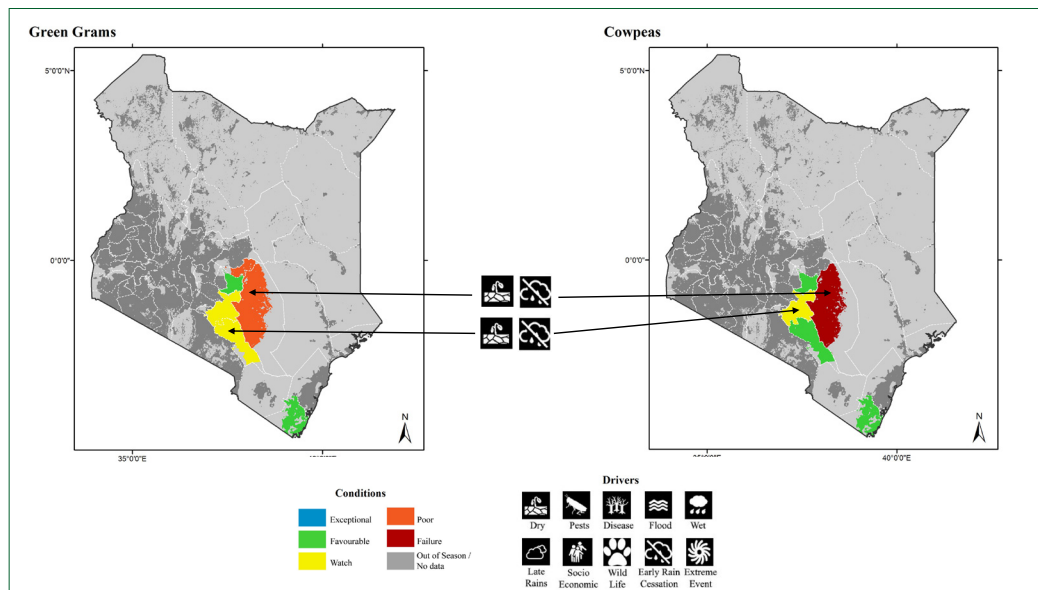
In Kirinyaga, ratoon crop harvesting almost finalized in all farms. Main crop was planted in July and August. Crop condition is good. Most of the crop is at vegetative state. Quelea birds menace is being addressed through bird scaring and aerial spraying of pesticides. Normal production expected. Rice in Taita Taveta is doing well and is in good condition and 95% of the targeted yield will be realized. In Busia and Kisumu conditions are favourable for rice which is at transplanting to early vegetative stage and harvesting for the earlier planted crop and yields expected to be normal.



Cowpeas and Greengrams Conditions Long rains

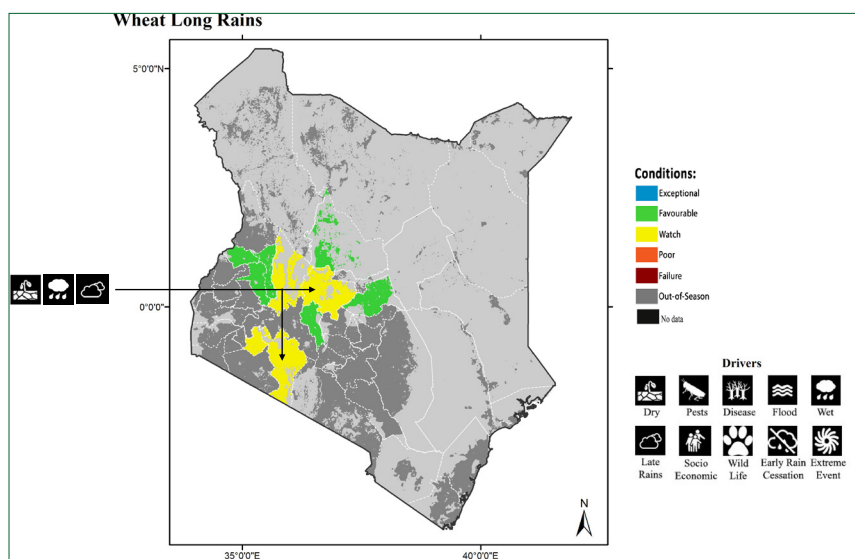
The main growing areas of these crops for grain are in Upper and Lower Eastern and to a lesser extent Coast. In other parts of the country, cowpeas are grown for leaves. In the main growing areas the crop has been harvested and the performance was fair to good given the crop's tolerance to drought. Green grams were in various stages at the Coast from podding and drying in Kwale and Kilifi, and in Taita Taveta the crop has been harvested where the performance was generally poor. Cowpeas

were in favourable conditions in Kwale but in poor conditions in Taita Taveta, podding and drying in Kwale and in good condition. Cowpeas has been harvested in the three counties, Kitui is less than 5% but in Makueni and Machakos conditions were fair and 80% and 60 % of the yields were realized in Makueni and Machakos respectively. Green grams are favourable in parts of Makueni realizing 60% of yields, Machakos, 25% but a failure in Kitui and parts of Makueni realizing less than 5%. Harvesting is complete for pulses.

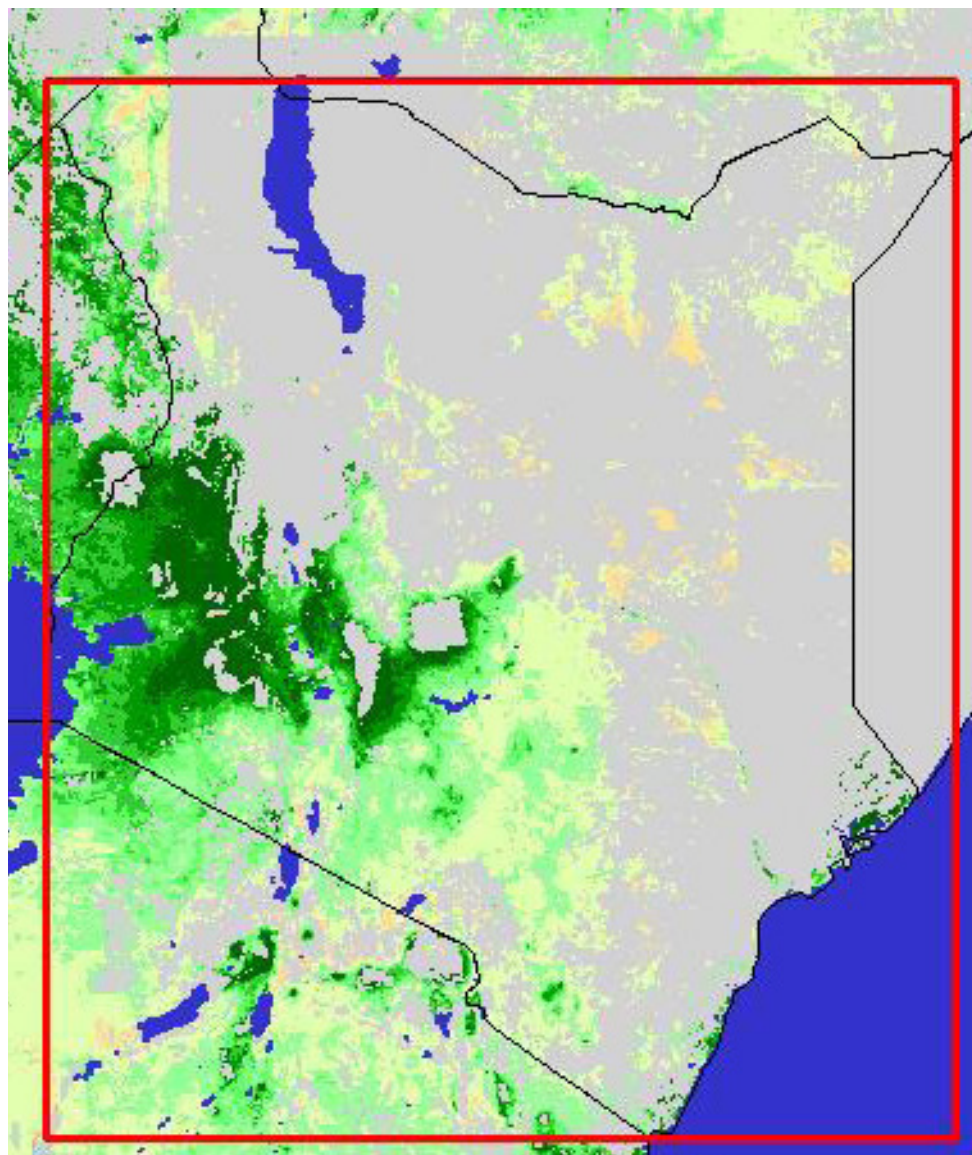


Wheat Conditions Long Rains

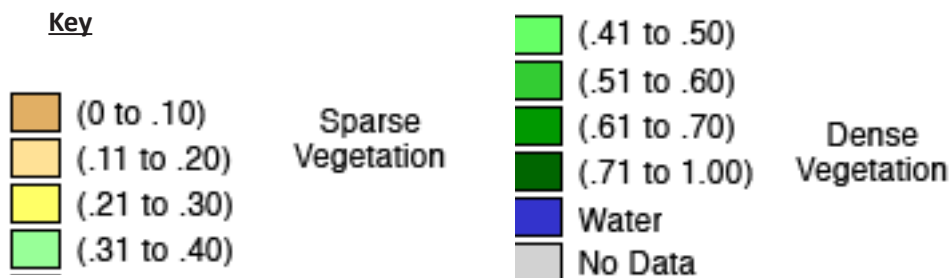
Wheat is mainly grown in Narok, Meru, Uasin Gishu, Trans Nzoia, Laikipia, Elgeyo Marakwet and Nyandarua counties. Wheat is at vegetative to reproductive stage with favourable conditions being reported in most of the Counties except in Laikipia where 35% of the planted crop is experiencing moisture stress. In Meru the crop is in favourable condition in large scale farms due to good management practices but worsening condition for small scale farms. In Samburu, farmers are top dressing with intermittent rains being experienced. An estimated 76% of the target area was realized during the season due to late onset of rains. In Nyandarua, the crop condition at vegetative and tillering stage due to adequate moisture as a result of prevailing rains. The yield was fairly good yields by large scale farms while the small-scale farmers had very poor yields of 2-3 bags per acre in Meru. Other Counties are expecting normal yields. Expected production is normal compared to the long term average.



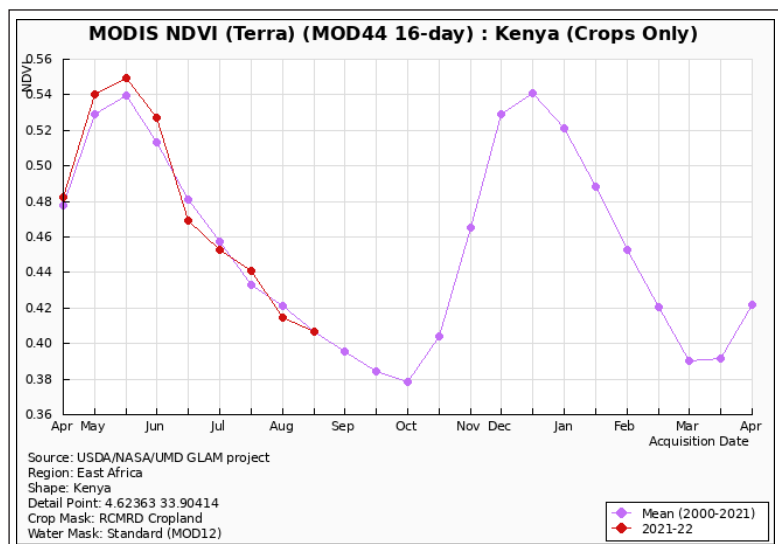
Vegetation Conditions



Key



The Vegetation map represents a 16-day anomaly image for 2021-August-13 to August-28. The **brown** areas represent areas where the vegetation conditions are worse than “normal” (long term average for the 2000 to 2018). The **green** color represents areas where conditions are better than “normal”. The white color represent values where normal conditions are being experienced. Gray areas are those where no data was collected due to cloud cover.



The Graph provides a comparison between current vegetation conditions (red) when compared to the average conditions (Purple) defined by the historical average. The dotted line displays the standard deviation showing how values tend to spread-out from the mean and can be used to gauge the severity of the current conditions.

Climate Outlook

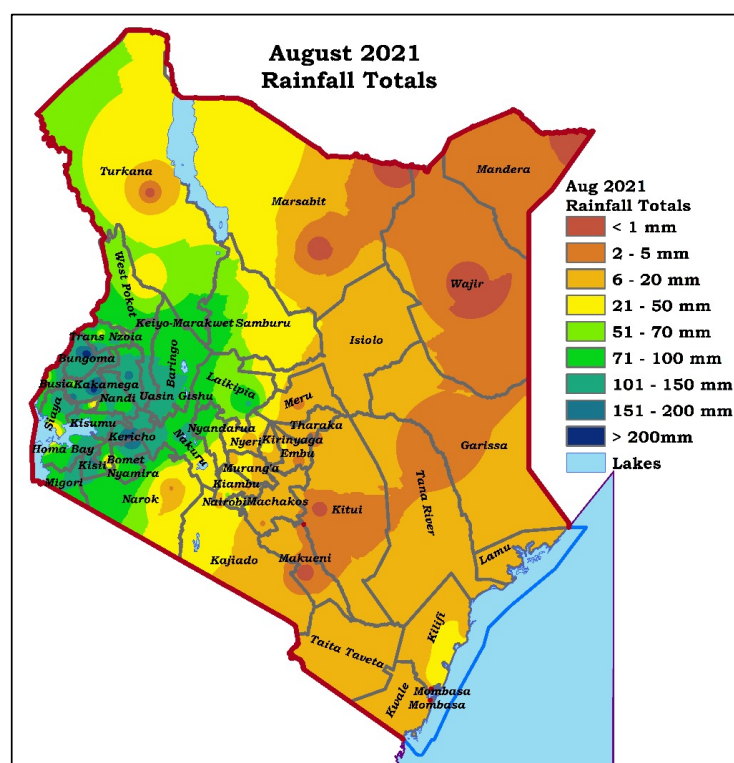


Figure 5: September Rainfall LTM

Outlook for September 2021

The rainfall forecast for September 2021 is based on the observed patterns of the Global Sea Surface Temperatures (SSTs) and more so those over the Indian and Pacific Oceans. The near average to below average SSTs in the Western Equatorial Indian Ocean (adjacent to the East African Coast) and the warmer than average SSTs in the Eastern Equatorial Indian Ocean (adjacent to Australia) and also the near to below average SSTs across most of the equatorial Pacific Ocean were taken into account. This constitutes a negative Indian Ocean Dipole and ENSO neutral conditions. Figure 5 shows the rainfall climatology in September.






August 2021 Weather Review

During the month of August, rainfall was recorded over the Lake Victoria Basin, the Highlands West of the Rift Valley, the Central Rift Valley, the Coast and parts of Northwestern Kenya. This rainfall occasionally spread to the Highlands East of the Rift Valley and Nairobi. Dry weather conditions were recorded over the Southeastern lowlands, the southern Rift Valley, Northeastern and parts of Northwestern Kenya where most meteorological stations recorded monthly rainfall totals of less than 20mm. For example, Wajir, Mandera, Marsabit, Moyale, Makindu and Lodwar stations recorded no rainfall at all.

The rainfall amounts recorded over the Lake Victoria Basin, the Highlands West of the Rift Valley, the Central Rift Valley and the Highlands East of the Rift Valley (including Nairobi County) were near to below average, compared with their August monthly LTMs, while the Coast recorded below average rainfall. Kakamega Station recorded the highest monthly rainfall total of 224mm which is 105.5% of its August LTM. Other stations that recorded rainfall totals exceeding 100mm include Kericho 213.3mm (114.6%), Kisii 167.8mm (103.1%), Eldoret 156.5mm (102.2%), Nakuru 126.4mm (117.5%) and Laikipia 103.7mm (207.3%). Kisumu, Kitale and Nyahururu recorded 99.4mm (126.3%), 99.2mm (65.5%), and 74.1mm (51.1%) respectively.











Terms and Definitions

Crop Condition Classes

	Exceptional	Conditions are much better than average at time of reporting. This label is used only during the grain-filling through harvest stages
	Favourable	Conditions range from slightly below to slightly above average at reporting time
	Watch	Conditions are not far from average but there is a potential risk to final yields. There is still time and possibility for the crop to recover to average conditions if the ground situation improves. This label is only used during the planting-early vegetative and the vegetative-reproductive stages
	Poor	Crop conditions are well below average. Crop yields are likely to be 10-25% below average. This is used when crops are stunted and are not likely to recover, and impact on yields is likely
	Failure	Crop conditions are extremely poor. Crop yields are likely to be 25% or more below average

Driver Definitions

These represent the key climatic drivers that are having an impact on crop condition status. They result in production impacts and can act as either positive or negative drivers of crop conditions.

	Higher than average wetness that results in destruction ie due to water logging and leaching of nutrients		This is a catch-all for all other climate risks (i.e. frost, hailstorms, mudslides etc.)
	Late start of the season		Area is flooded
	Rains end earlier than expected in the season		Destructive insects, birds or animals
	Destructive plant diseases		Drier than average
	Social or economic factors that impact crop conditions (i.e. policy changes, agricultural subsidies, government intervention, etc.)		Crop destruction by wildlife

Conflict: Armed conflict or civil unrest that is preventing the planting or harvesting of the fields by the farmers

Acronyms

The normalized difference vegetation index (NDVI) is a measurement of plant health based on how a plant reflects light (usually sunlight) at specific frequencies.

RCMRD	Regional Centre for Mapping of Resources for Development	SDCD	State Department for Crops Development
SERVIR	Joint development initiative of NASA and USAID	MoALF	Ministry of Agriculture, Livestock and Fisheries
UCSB	University of California Santa Barbara	MLND	Maize Lethal Necrosis Disease
UMD	University of Maryland	GHACOF	Greater Horn of Africa Climate Outlook Forum
USAID	United States Agency for International Development	ICPAC IGAD	Climate Prediction and Application Centre
FAW	Fall Army Worm		

Partnerships