



Kenya Crop Conditions Bulletin

September 2021

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National Synthesis (Maize, Beans, Wheat)

Overview

- Several parts of the country continued to experience generally sunny and dry weather conditions
- The Lake Victoria Basin, the Highlands West of the Rift Valley, Central and Southern Rift Valley continued to experience some moderate rainfall
- The short rains season started in the Nyanza region and the crop is from planting to early vegetative stage for maize while in the Eastern, Coast and parts of Central; land preparation for the short rains has started but still at below 50%
- Harvesing of most of the long rains food crops continued in the medium to high potential areas of the country

In the Bulletin

National Synthesis 1

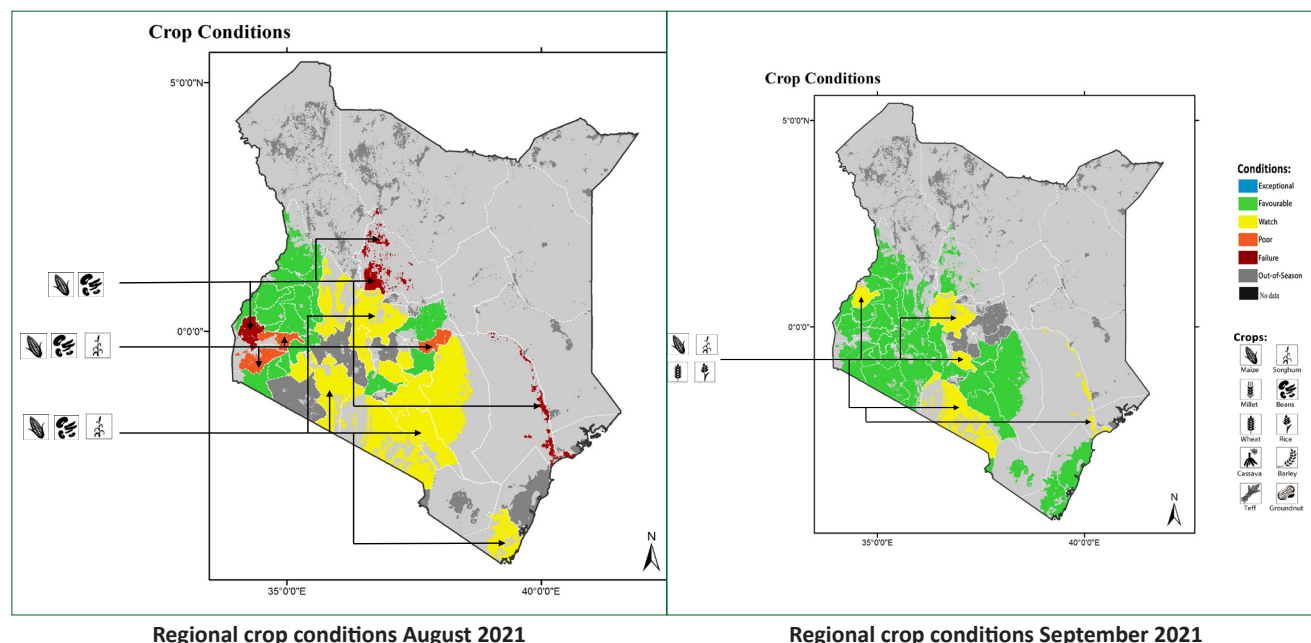
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Regional crop conditions August 2021

Regional crop conditions September 2021

Map showing regional crop conditions information in Kenya for August 2021 and September 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 expected near to above average rainfall in the Highlands West of the Rift Valley, Central and South Rift Valley is likely to provide sufficient soil moisture to sustain agricultural production. The rains may, however, adversely affect harvesting, drying and storage of grains. The continuation of sunny and dry weather conditions in Northeastern Counties and the South-eastern lowlands may continue diminishing pastures for livestock in these regions.

Assessment by Region

North Rift Region

Due to improved rainfall in the month of August and September the crop conditions in Nandi, Uasin Gishu, Elgeyo Marakwet and Trans Nzoia Counties is now favourable with forecast estimate of 90% of the long term average production expected. Main challenges during the reproductive phase included: Fall Army worms reported in parts of Trans Nzoia and Baringo counties; and Maize Lethal Necrosis Disease reported in parts of Elgeyo Marakwet and Baringo(150 Ha). Wheat in Uasin Gishu, Trans Nzoia, Baringo and Elgeyo Marakwet was doing well. In Samburu, Laikipia and West Pokot Counties, maize crop performance is lower by 31% of long term average but sorghum, wheat, irish potatoes and beans are favorable. Overall, the region will achieve 79 % of the long-term average for maize .

Harvesting of maize has started in some areas and due to the prevailing wet conditions rotting is expected to increase thereby increasing the post harvest losses. Harvesting of sorghum, beans, potatoes is 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 in favourable condition in West Pokot. In Nandi, harvesting of the crop is almost complete a part from few places that planted late. Wheat is at reproductive to early harvesting stage with favourable conditions being reported in all the Counties except in Laikipia where 35% of the planted crop is experiencing moisture stress and yields may be affected negatively. 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 expected 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 and Baringo counties.

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	33,564	503,460	37,614	712,350	89%	71%
Elgeyo Marakwet	30,200	1,004,500	30,970	1,080,235	98%	93%
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	413,869	13,037,823	401,868	16,125,059	98%	79%

South Rift Region

Maize and Beans conditions are favorable in Kericho and upper zones of Bomet, Narok and Nakuru with forecast production of 85% for the region. 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, August and September but large portion of the crop have not recovered well. Harvesting is ongoing in lower parts of Narok, Bomet and Kajiado and almost complete. Short rains have started in Bomet and Nakuru where planting is ongoing. In parts of Narok and Kajiado land preparation for the short rains is ongoing. Some subcounties of Narok (Transmara) maize crop for short rains is almost knee high.

Wheat performed well in most parts of Narok but was heavily affected by *Quelea Quelea* birds.

Beans were in favourable condition in Kericho, Bomet and Nakuru because of good rainfall during the month. Bomet and Nakuru have started short rain season and crops are in favourable condition. Beans are out of season in most subcounties counties in Narok and Kajiado and land preparation is ongoing. The region forecast production for the long rains declined by 15% 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	32,000	369,156	25,951	495,001	123%	75%
Kajiado	6,760	49,120	6,780	71,895	98%	68%
Kericho	35,068	1,284,106	35,397	1,138,504	99%	113%
Nakuru	81,246	1,792,374	80,374	2,242,768	101%	80%
Narok	93,165	1,628,637	83,159	1,839,387	112%	89%
Total	248,239	5,123,393	231,661	5,787,555	107%	85%

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. Bean 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 quelea* birds menace is being addressed through bird scaring and aerial spraying of pesticides. Normal production is expected.

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

Harvesting for all crops is complete with overall below average performance in the region. Kitui County and Kibwezi East sub-county in Makueni County experienced total crop failure, while Machakos and Makueni forecast is down to only 50-40% of the long-term average production. Beans, Green grams and pigeon peas was average 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. Green grams performance was 60% in Makueni while in Machakos it was poor with only 25% of long term average production achieved. Kitui and lower parts of Makueni county achieved less than 5%.

The region is currently preparing the land for short rains season which is the main production season. Land preparation is at 30% to 50%. Sourcing of seeds and other inputs is ongoing.

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 during long rains 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 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

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.

Generally, the maize crop in the region performed poorly with approximately 18% of the long-term average expected. The long rains maize crop performance is above average in Taita Taveta (50-65%), average in Kwale (50-35%) compared to long term average. The crop was very poor in Kilifi (15%) and near crop failure in Tana River (5%).

The region is preparing for short rains especially in Taita Taveta, Kwale, Tana river, Lamu and Kilifi.

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 were normal. Harvesting is complete. 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.

The short rains is ongoing in the region with the crops at planting to early vegetative stages. Planting is at various levels in the region, Homabay planting is at 90% and Migori 70%. The conditions for the short rains crop is good due to the rains being received in the 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 in the lower zones and counties. Forecast production is 94% which almost normal. Beans performed well in the region.

Table 8: Western Region Maize Production Forecast

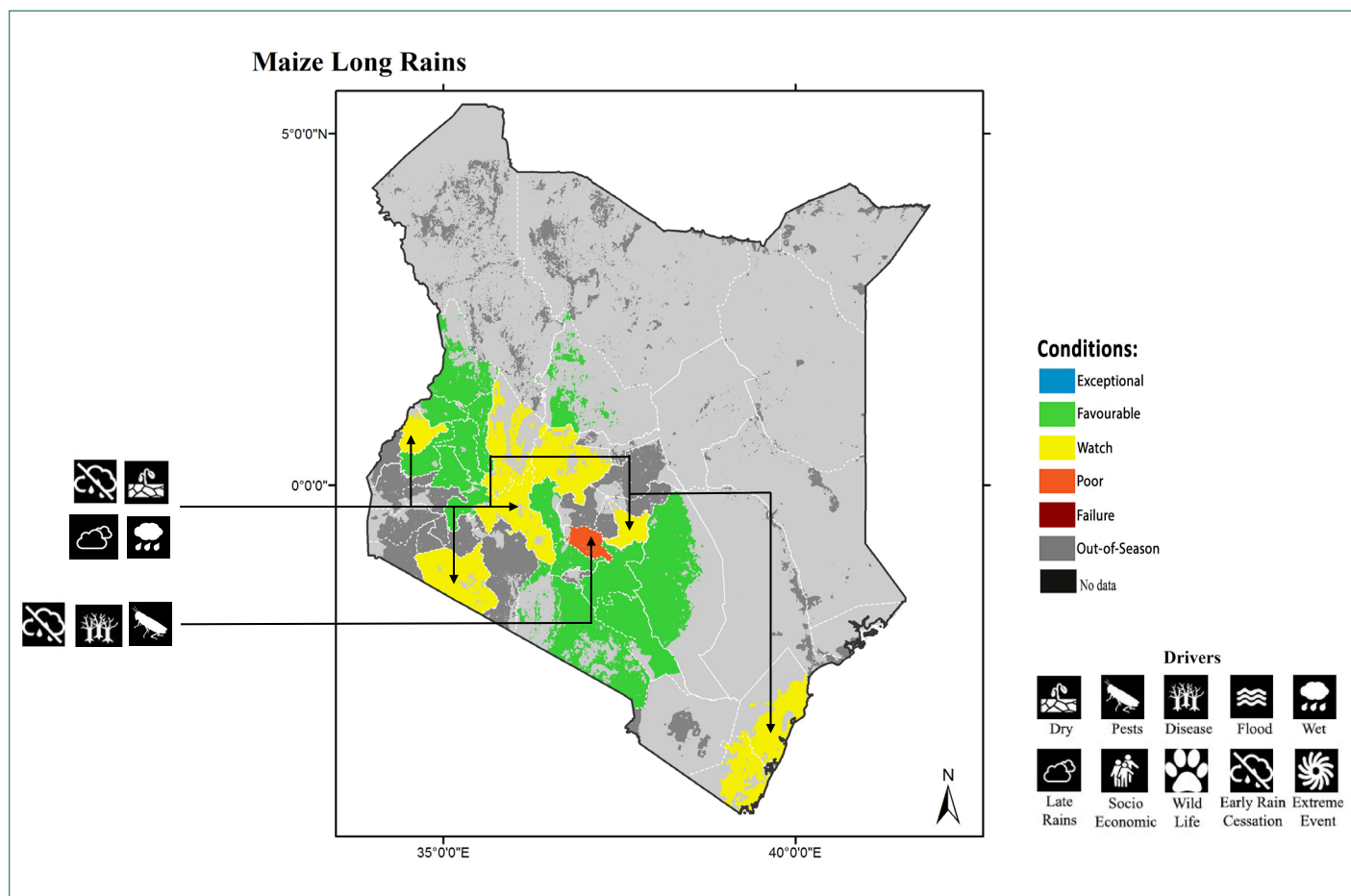
County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag)LR	LTA Achieved Area(Ha)	LTA Achieved Production	% Achieved area Vs LTA	% Achieved Production vs LTA
Bungoma	90,750	2,706,560	89,723	3,383,202	101%	80%
Busia	31,000	467,670	29,441	459,267	105%	102%
Kakamega	78,500	2,132,845	76,042	2,353,049	103%	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 1: Short Rains Bean Crop in Busia County

Assessment by Crop

Maize Conditions Long Rains Summary

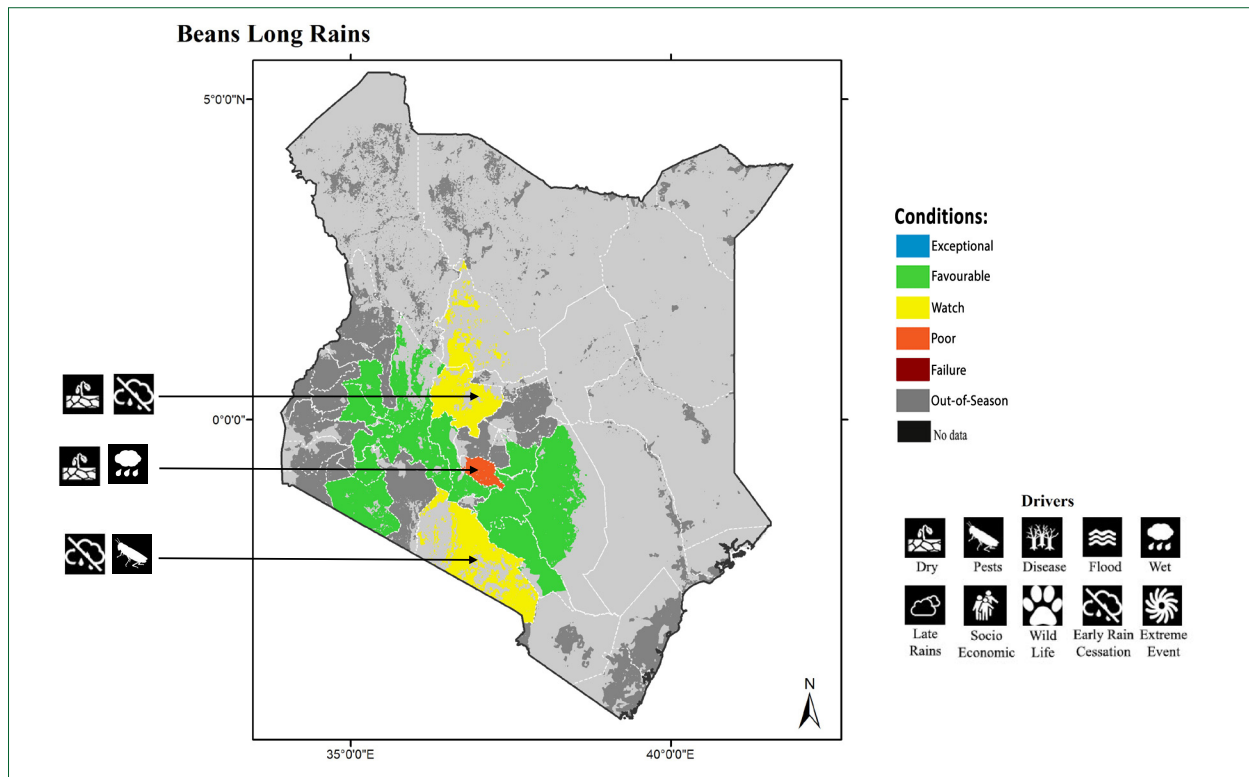


Maize crop condition in Nandi, Uasin Gishu, Elgeyo Marakwet and Trans Nzoia Counties is now favourable with forecast estimate of 90% of the long term average production expected. Main challenges during the reproductive phase included: Fall Army worms reported in parts of Trans Nzoia and Baringo counties; and Maize Lethal Necrosis Disease reported in parts of Elgeyo Marakwet and Baringo(150 Ha). In Samburu, Laikipia and West Pokot Counties, maize crop performance is lower by 31% of long term average. Overall, the region will achieve 79% of the long-term average for maize. Harvesting of maize has started in some areas and due to the prevailing wet conditions rotting is expected to increase thereby increasing the post harvest losses.

The crop has been harvested in lower Eastern, Coast, parts of Central, parts of Western and lower Nyanza regions poor yields achieved. A total crop failure was experienced in Kitui, Tana River and lower parts of West Pokot Counties. The short rains land preparation are ongoing in lower eastern, central, upper and lower eastern and is ranging between 30 and 50%. The crop is at planting to early vegetative stages in Nyanza and Western parts of the country with some counties achieving over 70% planting.

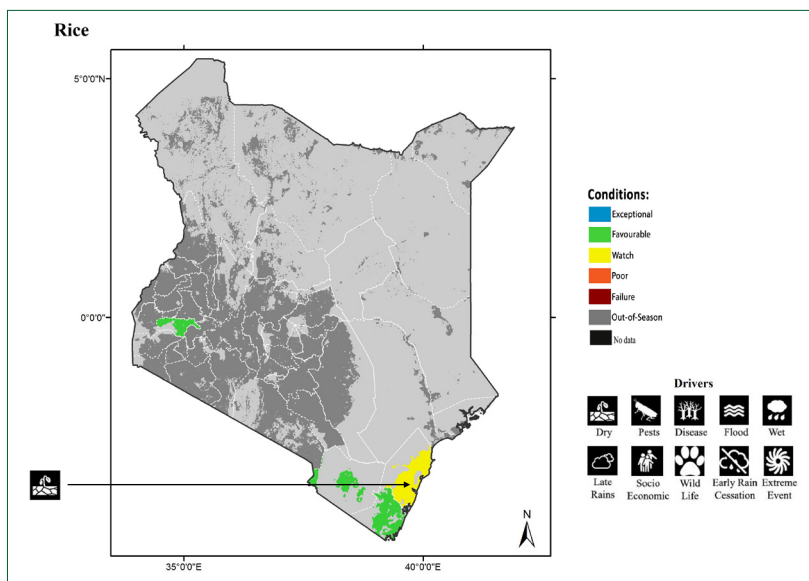
Bean Conditions Long Rains

Conditions were favourable for production of beans in the long rains in Western, parts of North Rift Kirinyaga, Embu and Upper Nyanza. However conditions were poor in West Pokot, Kitui, Tharaka Nithi, Meru, Muranga, Nyeri and Lower Nyanza counties. Average to below average yields were achieved as a result of challenges of dry conditions during the production period. Short rains crop has been planted in Western and Nyanza region and is doing well. Other parts of the country, Eastern, Central and Coast are at land preparation for the short rain crops where the dry conditions are favorable for land preparation.



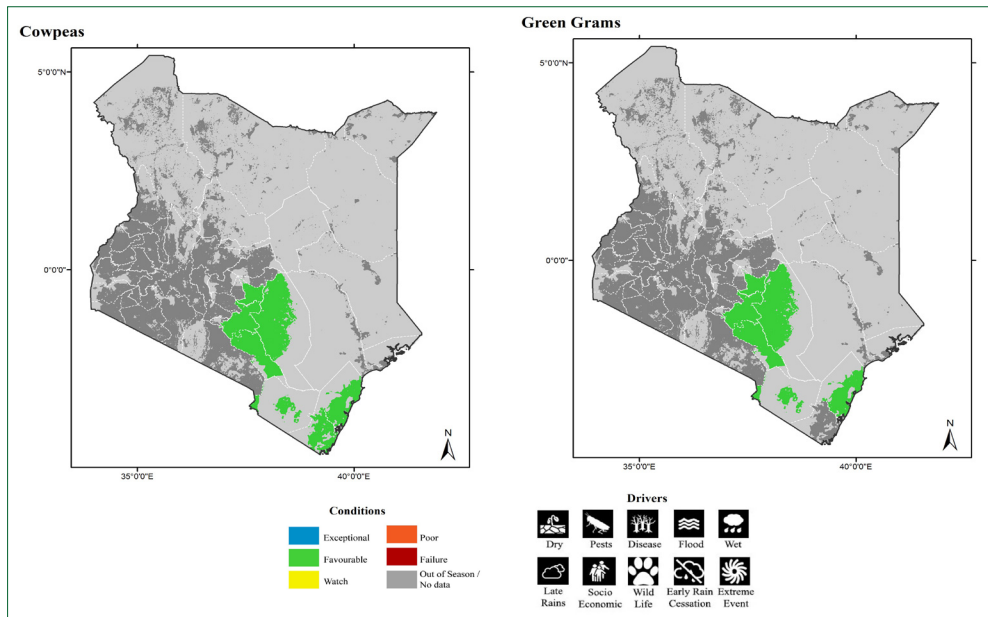
Rice Conditions Long Rains

In Kirinyaga, ratoon crop harvesting is complete. The main crop that was planted in July and August is doing well although rationing of water has started as a result of the dry weather which may slightly reduce the expected yields. Crop condition however is good. Most of the crop is at vegetative stages. 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 all stages transplanting to early vegetative stage and harvesting for the earlier planted crop and yields are expected to be normal.



Cowpeas and Greengrams Conditions Long rains

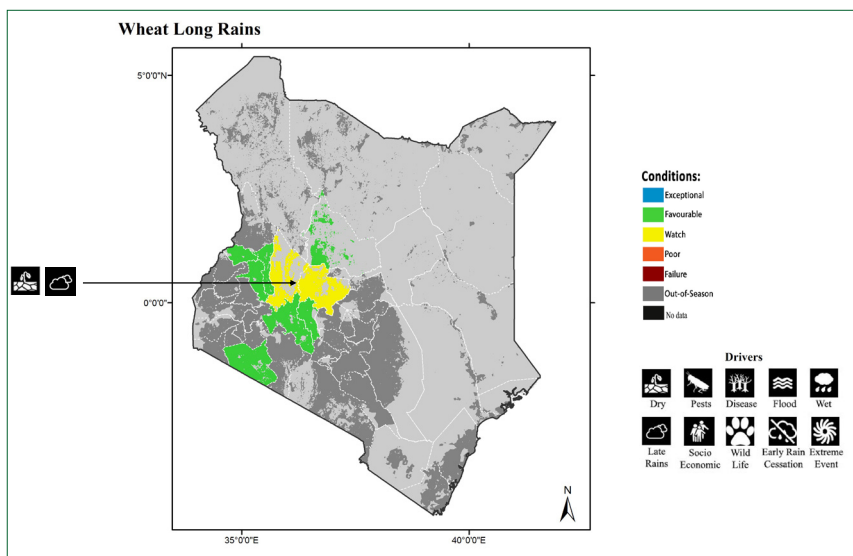
The main growing areas of these crops for grain in upper and lower eastern and to a lesser extent coast. Other parts of the country the cowpeas are grown for leaves. In the main growing areas the crops have been harvested and the performance was fair to good give tolerance to drought. Cowpeas has been 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 were favourable in parts of Makueni realizing 60% of yields, Machakos, 25% but a



failure in Kitui and parts of Makueni realizing less than 5%. Land preparation is on going to plant the short rains crop and the dry conditions are favourable for the activity and dry planting.

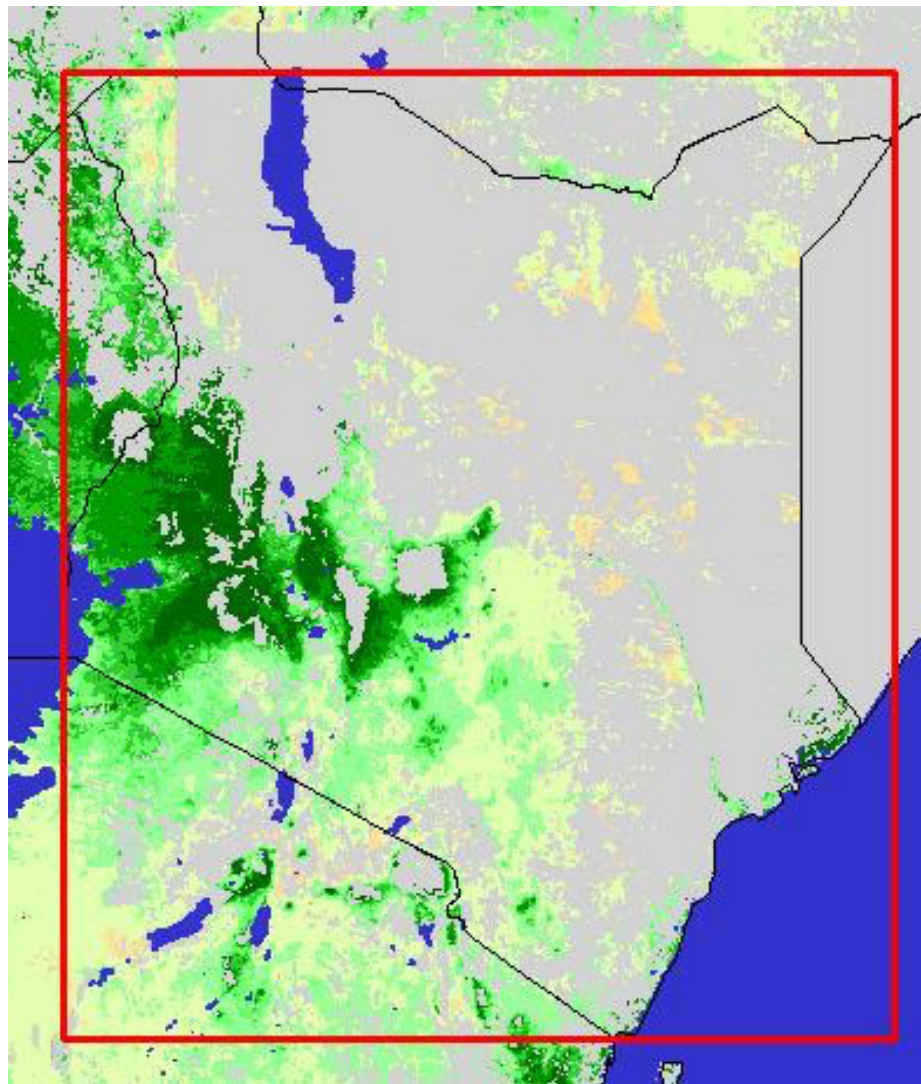
Wheat Conditions Long Rains

Wheat is mainly grown in Narok, Meru, Uasin Gishu, Trans Nzoia, Laikipia, Elgeyo Marakwet, Nyandarua and Samburu counties. Narok and meru wheat LR crop is already harvested. Wheat is at vegetative to reproductive stage with favourable conditions being reported in most the other Counties except in Laikipia where 35% of the planted crop is experiencing moisture stress. 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

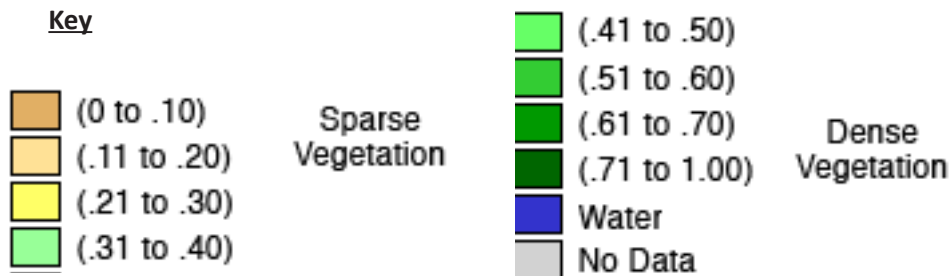


poor yields of 2-3 bags per acre in Meru Other Counties are expecting normal yields. Planting of the short rains is starting in Nyamira and Nyeri counties.

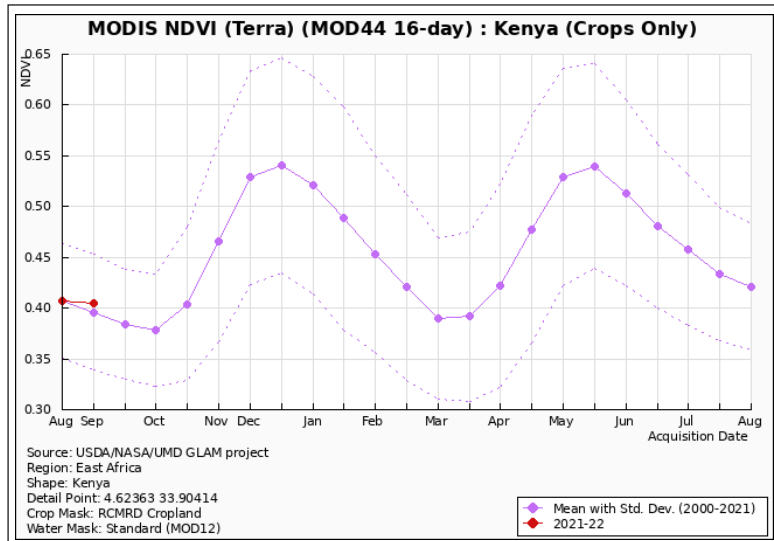
Vegetation Conditions



Key



The Vegetation map represents a 16-day anomaly image for 2021-August-29 to September-13. 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

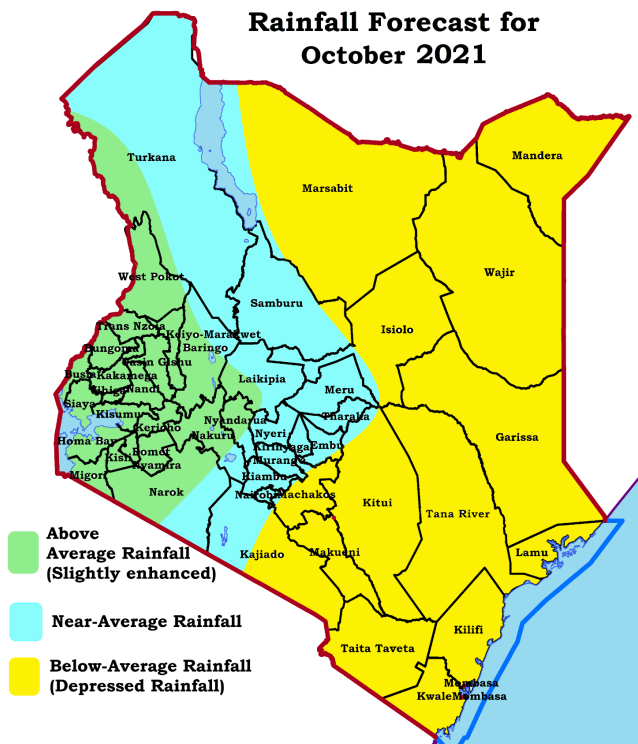


Figure 2: October Raifall Forecast

Outlook for October 2021

The forecast indicates that several counties of the Highlands West of the Rift Valley, the Lake Victoria Basin, the Southern, Central Rift Valley regions and a few areas in the Northwest are likely to experience near-average rainfall with a tendency to above-average. Near to below average rainfall is likely over the Highlands East of the Rift Valley and over some parts of the Northwest. Below average rainfall is expected over the South-eastern lowlands, the Coast and North-eastern regions. The October 2021 rainfall is expected to be poorly distributed, both in time and space over most parts of the country.






September 2021 Weather Review

During the month of September 2021, several parts of the Highlands West of the Rift Valley, the Lake Victoria Basin, Southern and Central Rift Valley and Northwestern Kenya received rainfall that was near to above average for the month of September, while the Coast and a few parts of the Highlands East of the Rift Valley received near to below average rainfall. Generally sunny and dry weather conditions prevailed over the rest of the country during this period.

As at 27th September, Kakamega Meteorological Station recorded the highest monthly rainfall total of 339.6mm which was 195.9% of its September Long-Term Mean (LTM). Other stations that recorded over 100mm of rainfall include Kericho, Kisii, Eldoret, Kitale and Nakuru, which recorded 303.9mm (178.4%), 177.0mm (107.2%), 165.6mm (233.7%), 158.0mm (150.8%) and 146.0mm (192.3%) respectively. Kisumu, Nyahururu, and Narok recorded 94.9mm (89.2%), 90.2mm (130.1%) and 56.1mm (230.3%) respectively. The rest of the stations recorded less than 50mm of rainfall with Mandera, Garissa, Machakos, Makindu and Voi meteorological stations recording no rainfall at all during the month.











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.

 Wet	Higher than average wetness that results in destruction ie due to water logging and leaching of nutrients	 Extreme Event	This is a catch-all for all other climate risks (i.e. frost, hailstorms, mudslides etc.)
 Late Rains	Late start of the season	 Flood	Area is flooded
 Early Rain Cessation	Rains end earlier than expected in the season	 Pests	Destructive insects, birds or animals
 Disease	Destructive plant diseases	 Dry	Drier than average
 Socio Economic	Social or economic factors that impact crop conditions (i.e. policy changes, agricultural subsidies, government intervention, etc.)	 Wild Life	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