



# Kenya Crop Conditions Bulletin

## June 2021

Ministry of Agriculture,  
Livestock, Fisheries & Cooperatives  
State Department for Crop Development  
and Agricultural Research

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### National Synthesis (Maize, Beans, Wheat)

#### Overview

- The crop conditions in the country deteriorated compared to May and most counties are under watch due to reduced rainfall in the reporting period
- Beans are being harvested in the hotter parts of the country with yields of below average being achieved
- Maize is generally at vegetative to reproductive stage in North Rift and conditions are favourable, but in Lower Eastern, Coast, Central, Nyanza and South Rift Regions, the conditions are under watch and worsening due to lack of rains. Total crop failure has been experienced in Tana River, Kitui and parts of Kilifi due to inadequate rains which were late and compounded by early cessation
- In North Rift, wheat is at planting to early vegetative crop stage and condition is favourable with average to below average yields expected

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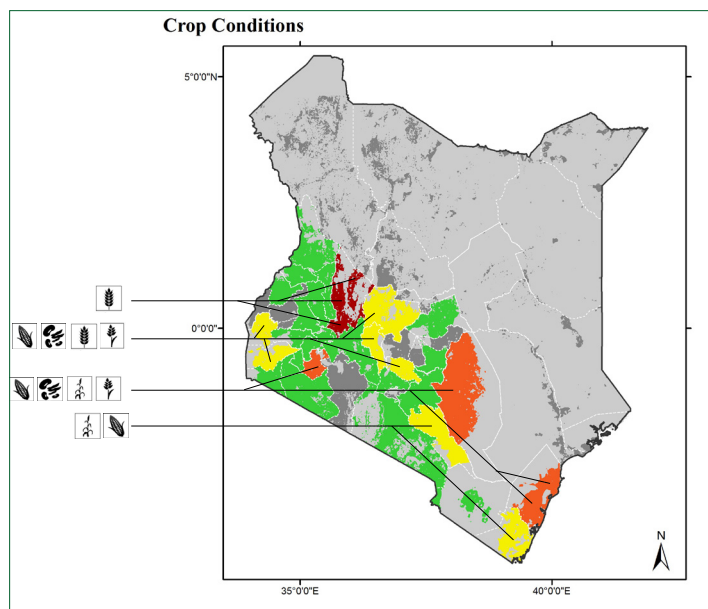
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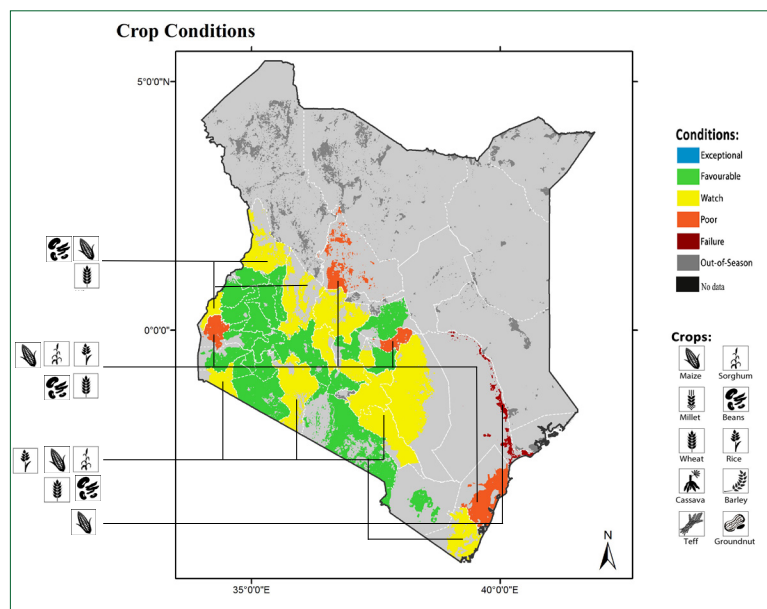
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Regional crop conditions May 2021



Regional crop conditions June 2021

Map showing regional crop conditions information in Kenya for June 2021 and May 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 labeled 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 July 2021 indicates that counties in the Lake Victoria Basin Region, Highlands West of the Rift Valley, Central and Southern Rift Valley and the Northwestern parts of the country are likely to experience near-average to above-average rainfall (slightly enhanced rainfall). The Coastal Strip is likely to receive near-average rainfall. Counties in the Northeast and Southeastern Lowlands are likely to experience generally sunny and dry conditions. Cool/cold and cloudy/foggy conditions with occasional rains/drizzles are expected to prevail over the Highlands East of the Rift Valley, Nairobi County and the Central and Southern Rift Valley.

## Assessment by Region

### Coast Region

The maize crop in coast is under watch in Kilifi and Kwale but the trend is improving slightly after some showers were received mid-May. The crop in Tana River in rainfed areas is already a failure due to late onset of rains which was also poorly distributed, the prevailing dry conditions and early cessation of rains. The crop in the rainfed areas dried at below knee high stage. Maize crop in Taita is in poor condition on the lower areas due to the prevailing dry conditions and after early cessation of rains. Greengrams and cowpeas were in favourable conditions in Kwale but in poor conditions in Taita Taveta. Green grams are under watch in Kilifi but the cowpeas are in poor conditions due to prevailing dry conditions. Overall Crop conditions were only reported as favourable in Kwale with rest of the coast region reporting from watch conditions to crop failure.

**Outlook:** Expected yields for maize will be below 50 percent especially for the Kilifi, TaitaTaveta and Kwale with total crop failure in Tanariver. Expected yields for pulses is below 20 percent.

### Central Region

In Central region, the crop conditions are under watch in Laikipia, Kiambu and Muranga due to the dry spell being experienced. In Muranga waterlogging had affected the crops earlier and has been worsened by the dry conditions that followed before the crop could recover especially beans. In Kiambu County the dry spell in the middle of the season affected 35 percent of bean crop in the county. Kirinyaga and Nyandarua and Nyeri conditions are favorable for all crops on the upper zones.

**Outlook:** Normal production is expected in Kirinyaga for maize and beans while below normal production is expected for bean crop in Kiambu and Nyandarua and for maize in the drier parts of the region.



Figure 1: Bean harvesting in Ngoliba Ward, Thika

### Lower Eastern Region

In the Lower Eastern Region, conditions for maize has deteriorated from favourable last reporting period to watch situation in Machakos as it has not rained. The crop in Makueni has also moved from watch to poor in the same period but still poor in Kitui county. The trend is generally worsening in the region due to lack of rains in the three counties. Most of the crop is at flowering stage to cob formation. Beans, are in favourable conditions in Machakos, under watch in Makueni but a failure condition in Kitui. Cowpeas are under watch in Kitui and Makueni but favourable in Machakos. Greengrams are in favourable condition in Machakos, under watch in Makueni but a failure in Kitui. The dry conditions have led to deterioration of the crop condition in the region. Beans are being harvested in the region.

**Outlook:** Total crop failure of maize is expected in Kitui county while in Machakos 40 percent is expected of targeted yields and average yields for the hillmasses of Makueni with the lowlands expecting below normal yields. For pulses below normal yields to total crop failure in Kitui is expected due to the dry spell experienced in the reporting period.

## Upper Eastern Region

In Upper Eastern region, the maize crop is under watch in most counties due to dry conditions and early rain cessation. Beans also performed poorly due to wet conditions early in the season. Harvesting of early planted crops in Tharaka-Nithi started in the first week of June, 40 percent of the crop is harvested and completion is expected by the second week of July 2021. In Embu the bean crop has matured and is unlikely to be affected negatively by the cold and dry conditions. Meru County grows less maize during the long rains due to expected poor rainfall performance. Most farmers also intercrop maize with legumes providing a cover crop. Due to the prevailing dry weather conditions only 30 percent of the crop in the county is likely to reach maturity.

**Outlook:** It is expected that, below normal production will be attained due to the unfavorable conditions that are being experienced.

## North Rift Region

Favourable crop conditions are prevailing in Trans Nzoia, Nandi, Uasin Gishu and Elgeyo Marakwet Counties. Crops are at vegetative to reproductive stage for maize, beans, Irish Potato and at planting to early vegetative for wheat. Crops in parts of Elgeyo Marakwet (Emsoo, Tambach, Sambirir and Endo wards) as well as Trans Nzoia (Chepchoina, Keiyo and Endebess wards) have been affected by the dry spell. Flower abortion and shrivelling of pods in 30 percent of the planted bean crop has been observed. Management of fall armyworm infestation in Nandi, Uasin Gishu and Trans Nzoia Counties is ongoing. Resumption of rains in the 4 Counties is expected to improve the crop condition. In Baringo, Samburu, Laikipia and West Pokot, crops are under watch and the trend is worsening especially for beans which have experienced premature drying and wilting at flowering stage. An estimated 50 percent of all crops are experiencing moisture stress. The key drivers are dry spells, late onset and early cessation of the rains. Drought tolerant crops such as sorghum are still in good condition.

**Outlook:** Average yields for maize, Irish potato and wheat and below average yields are expected for beans in Trans Nzoia, Uasin Gishu, Elgeyo Marakwet and Nandi Counties. Below average yields with a possibility of crop failure are expected if the current dry spell continues in Laikipia, West Pokot, Baringo and Samburu Counties.



Figure 2: Maize and bean intercrop, beans almost maturing Kaptagat area, Kaptarakwa ward Keiyo South

## South Rift Region

In South Rift region, both maize and beans conditions are favorable in Kericho, Kajiado and upper zone of Bomet due to good rainfall distribution in these areas. However, Nakuru and Narok conditions are under watch and the trend is worsening due to the prevailing dry conditions after early cessation of rains. The crop in some areas in Nakuru such as *Kambi ya Moto* in Rongai is already a failure due to the dry spell. Maize is at different stages in the region depending on timeliness of land preparation rainfall onset, and different agro ecological zones.

**Outlook:** Crop performance could be affected by unreliable rainfall in some parts of the region. However the parts which received good rainfall distribution are likely to realise normal yield.



## Nyanza Region

Conditions for maize are on watch in Lower Nyanza region. This occasioned by dry conditions in Kisumu, Siaya and Homabay and early cessation of rain in Migori. Beans performance in this region is stable due to sufficient and well-distributed rainfall in Kisumu, Siaya, Homabay and Migori during the production period for beans. Maize is at different stages in the region depending on timeliness of land preparation rainfall onset, wetlands (river valleys or meadow) and different agro ecological zones.

In Upper Nyanza regions of Kisii and Nyamira, conditions for maize are favorable. The beans are mostly harvested and conditions are stable though yields are expected to be slightly depressed due to increased incidences of fungal infections because of more rainfall.

**Outlook:** Maize Crop performance could be affected by mid-season drought leading to below normal production in Lower Nyanza, Upper Nyanza though is expected to have normal yields. The beans crop yield is expected to be normal due to stable conditions for growth of the crop in both Lower and Upper Nyanza with a slight depression in yields for Upper Nyanza.

## Western Region

In Western region, conditions are favorable for both maize and beans due to good performance of rainfall in Vihiga and Kakamega. However condition could tend towards watch for maize in Bungoma and Busia for late planted crops due to mid-season drought. Maize is at different stages in the region depending on timeliness of land preparation rainfall onset, the crop planted in wetlands (river valleys or meadow) and the different agro ecological zones.

**Outlook:** Crop performance could be affected by mid-season drought leading to average to normal production.



Figure 3: Maize in Teso South (L) and in Nambale (R), Busia county



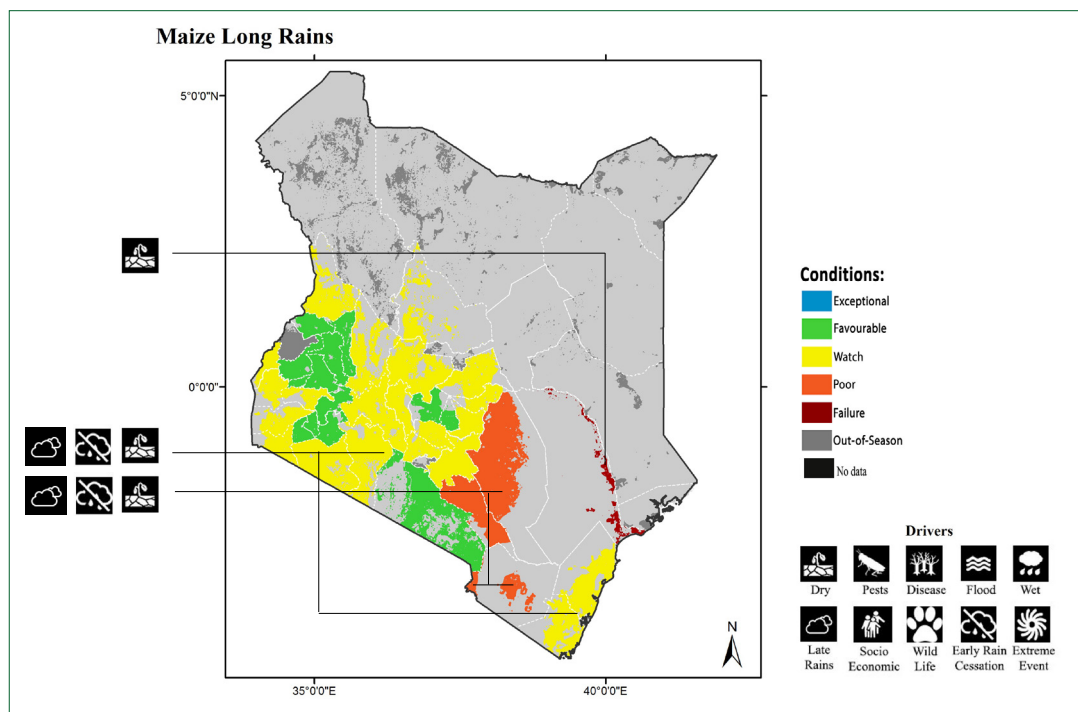
## Assessment by Crop

### Maize Long Rain Conditions

Conditions are watch for lower eastern, Coast, parts of Central, South Rift, North Rift, Western and Nyanza regions. Conditions are poor in Taita Taveta and a total crop failure in Kitui and Tana River Counties. The trend is worsening with the continued dry spell. Below average yields are expected in affected areas. This is because the rains have been depressed and poorly distributed over the season and prevailing dry conditions after the early cessation of rains. Maize in lower areas of Molo, Rongai, Njoro and Subukia are showing serious moisture stress with areas of *Kampiya moto* in Rongai experiencing total crop failure. Parts of Migori, Homabay, Kisumu and Siaya counties have conditions tending towards watch. In parts of Busia as well as Tongaren, Kimilili and Mt Elgon subcounties in Bungoma, conditions are tending towards watch. There is continued poor rainfall performance leading to moisture stress and outbreak of fall armyworm (FAW). Total crop failure is expected in Tana River due to inadequate rains which were late and compounded by early cessation and as a result the crop dried below knee high stage. Some farmers in these areas did not even plant. Maize is under favourable conditions in Elgeyo Marakwet, Trans Nzoia, Nandi and Uasin Gishu where the crop stage is vegetative to reproductive. Condition is also favourable in Upper Nyanza, Parts of Western, Kericho, Kajiado and some parts of Bomet County. Maize production is favourable in Kisii and Nyamira counties as the crop was not affected by mid-season drought. Maize production is favourable in Kakamega, Vihiga and parts of Busia and Bungoma. Normal to average yields are expected in areas with prevailing favorable conditions.



Figure 3: Maize condition in Cheponge, Elburgon ward, Molo Sub County



## Bean Conditions Long Rains

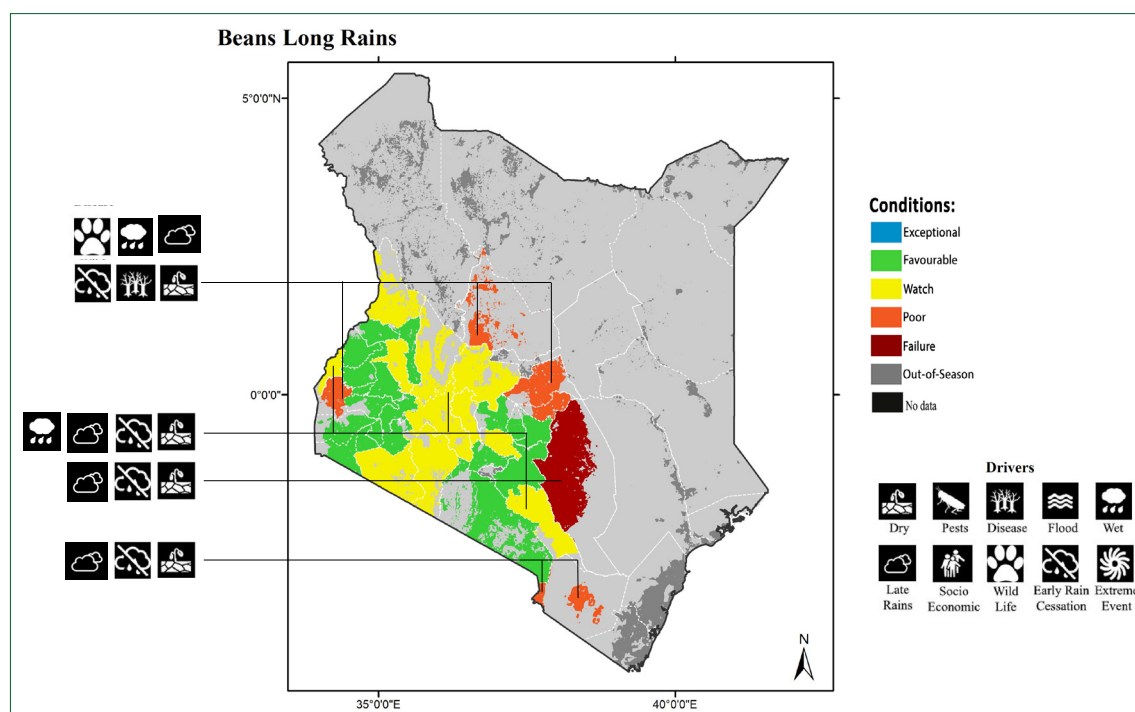
Bean crop is under watch in Lower and Upper Eastern, parts of central, North Rift and South Rift regions. Conditions are favourable in parts of Lower Nyanza, Lower Eastern and wholly in Upper Nyanza, North Rift, and parts of Western regions. Bean crop condition is poor conditions in Taita Taveta and but a failure in Kitui due to dry conditions and early cessation of rains. The yields expected in areas under watch is likely to reduce to below average due to moisture stress experienced by the crops while a total crop failure will be experienced in Kitui to minimal yields in Taita Taveta.

In central region, Kiambu county, early planted crop is already harvested estimated at 30 percent with 60 percent physiologically mature. Heavy rains during flowering and pod formation stage affected beans in higher parts of the Meru County.

In North Rift region, for Elgeyo Marakwet, crop condition is favourable with average to below average yields expected but some areas such as Emsoo and Tambach in Keiyo North, Sambirir and Endo wards in Marakwet East the crop has been affected by the dry spell. Favourable conditions is reported from Kericho, Kajiado, and Bomet County. The trend is worsening in Rongai of Nakuru County but stable in the rest of the county. Kericho and Bomet, yields expected are above average. While in Nakuru, Kajiado and Narok yield is expected is likely to be below average.

In Nyanza region, conditions are favourable in the Homabay, Siaya, Kisumu and Migori but slightly below normal conditions in Kisii and Nyamira. The yield is expected to be normal due to stable conditions for growth in both Lower and Upper Nyanza with a slight depression in yields for Upper Nyanza due to fungal diseases. More than 60 percent of the crop has been harvested in Nyanza region.

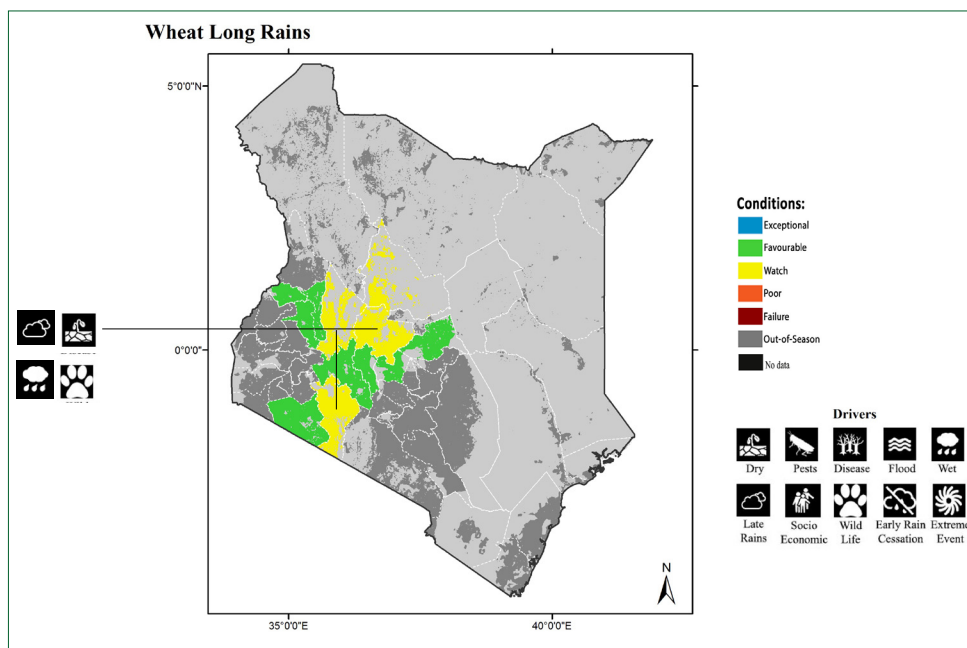
In Western region, bean production is favourable in Kakamega, Vihiga and parts of Bungoma and Busia but poor in late planted crop in Bungoma and Busia due average weather conditions. Bean is at flowering to harvesting in the four counties.



## Wheat Conditions

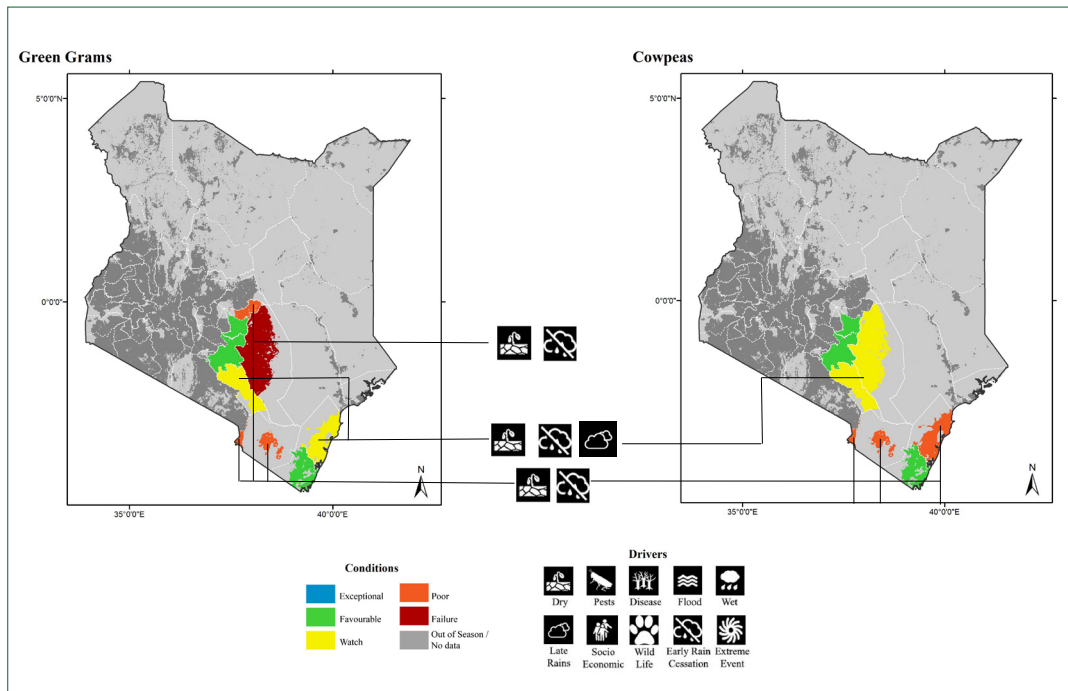
In Baringo germinated wheat crop is showing signs of moisture stress. Below average production is expected for wheat in the county. In Elgeyo Marakwet wheat is at early vegetative crop stage and condition is favourable with average to below average yields expected.

For Trans Nzoia, 50 percent the targeted area under wheat has been ploughed and planting has started. In Uasin Gishu conditions for wheat are favourable. In Meru and Narok, the crop is at soft dough stage and not affected much by the weather. This is due to conservation agriculture practiced by large scale wheat growers who constitute about 75 percent of the wheat farmers in Meru County. There is moisture stress in Nyandarua County due to the dry spell especially in major wheat growing sub counties, this has resulted to poor germination and decreased planting activities. Expected yields are below normal.



## Green Grams and Cowpeas

Crop conditions for cowpeas are poor in Kilifi and under watch in Makueni and Kitui. The crop condition is in favourable condition in Machakos and Kwale counties. The poor condition is attributed to dry conditions experienced in the month. For green grams, conditions have remained favourable in Kwale and Machakos, under watch in Makueni and Kilifi but poor in Taita Taveta and a failure in Kitui County. Generally the yields are expected to reduce



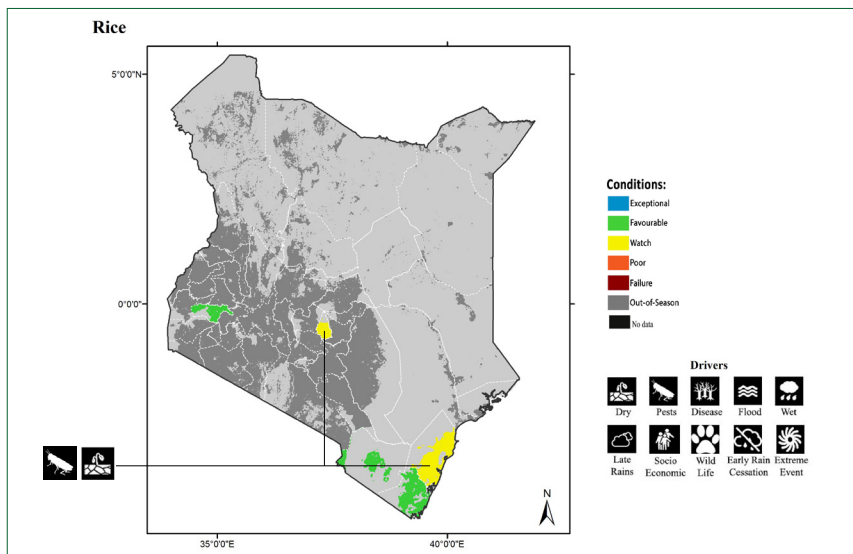
to below average due to moisture stress experienced by the crops. In Embu, the expected low production is due to powdery mildew and aphids infestation.



## Rice Conditions

Rice is in favourable condition in Kwale, Kisumu and Taita Taveta. The crop is under watch conditions in Kilifi due to inadequate moisture in valley bottoms where the local varieties and upland rice is planted. Based on the current situation a yield of 95 percent will be achieved in Taita Taveta and in Kwale expected yield is below normal as there is inadequate water in the rice farms. Kilifi the conditions improved slightly after some showers were received from mid June.

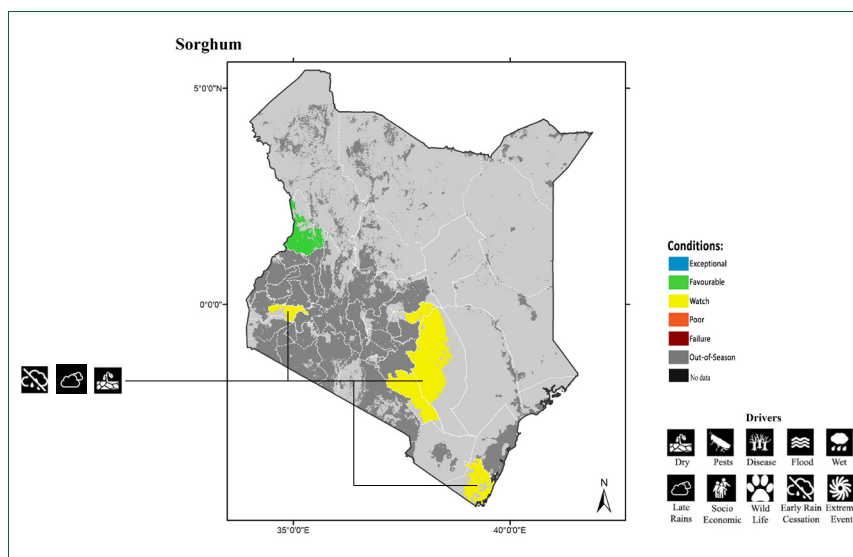
In Kirinyaga county crop is under watch as 90 percent of rice is under attack by *quelea quelea* birds. Bird scaring and aerial spraying of pesticides is ongoing.



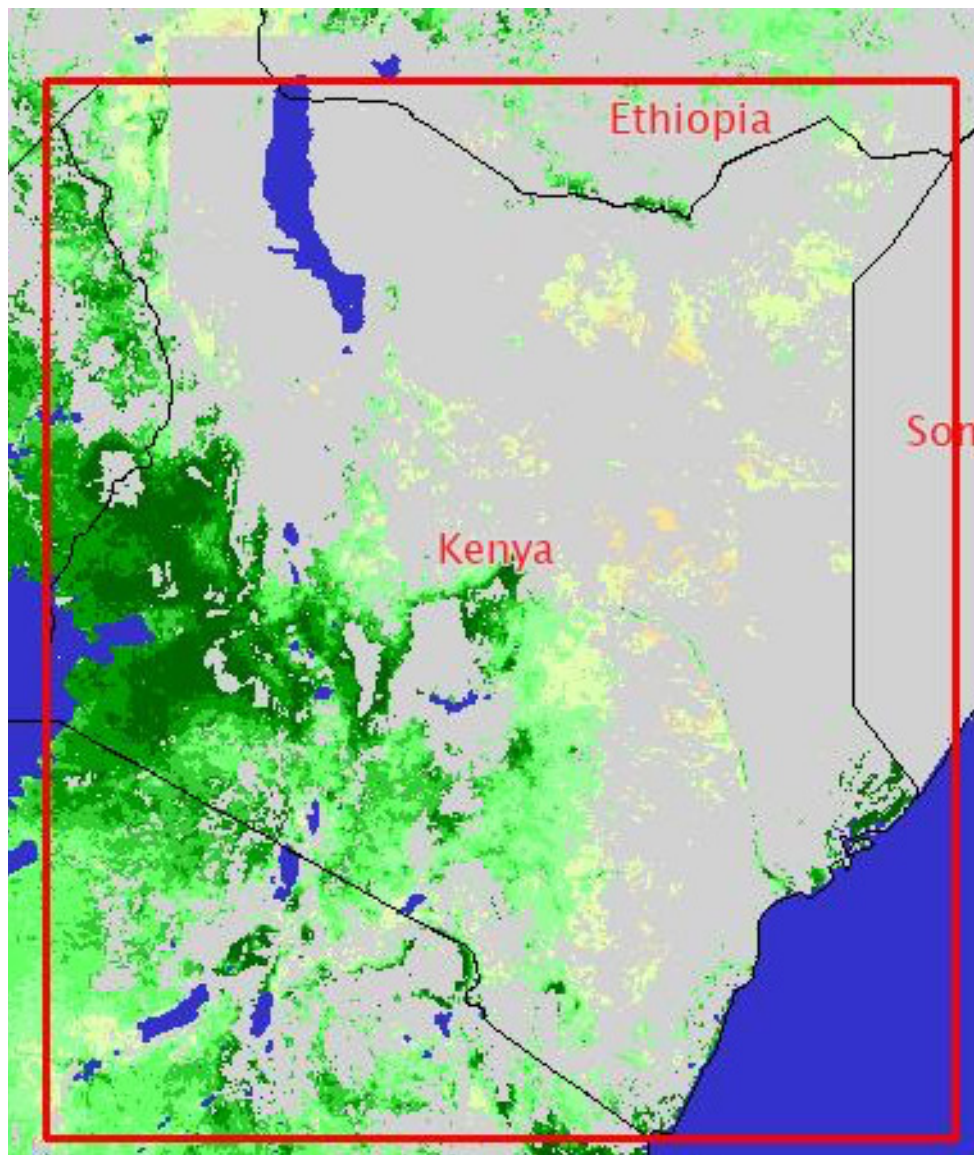
## Sorghum Conditions

Sorghum in Makueni has deteriorated from favourable to watch conditions while the crop is still under watch in Kwale and Kitui. With resumption of rains at the Coast region especially Kwale, the condition is expected to improve. Over 95 percent failure is expected in Kitui, while in Makueni and Kwale below average yields are expected due to the inadequate rains and prevailing dry weather.

Prevailing dry condition from the second week of May in ASAL areas of Tharaka-Nithi have negatively affected production. Harvesting of early planted crops started in the first week of June, 40 percent of the crop is harvested and completion is expected by the second week of July. On average yields of 1 bag per acre have been achieved. In Kisumu 25 percent of the crop is maturing, 50 percent at booting and 25 percent is at vegetative stage. The long rains' crop performance is normal. Sorghum is tolerant to water stress and production is expected be normal in the season.



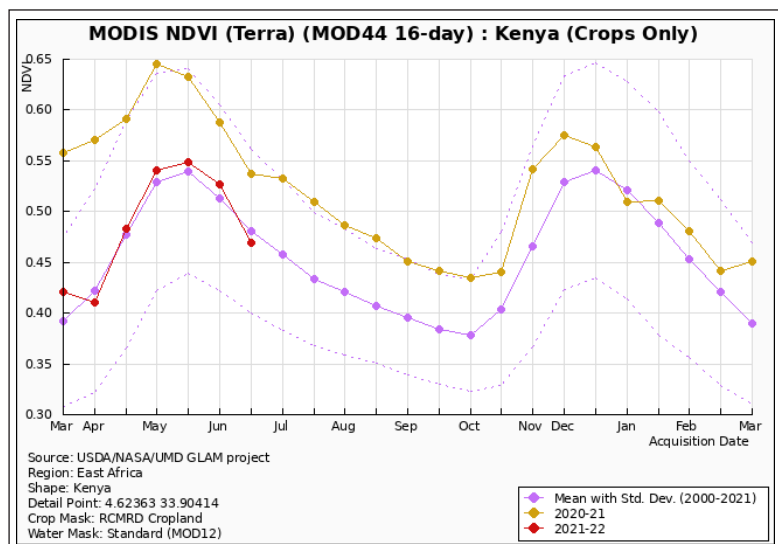
## Vegetation Conditions



### Key



The Vegetation map represents a 16-day anomaly image for 2021-June-10 to June-25. 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

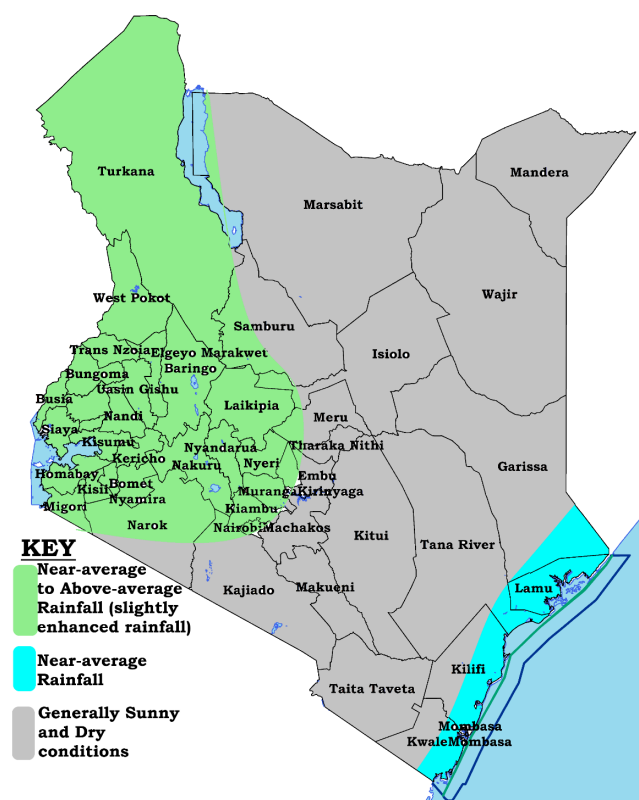


Figure 4: July 2021 rainfall forecast

## June 2021 Weather Review

Several parts of the country remained generally dry in the month of June. However, several stations over the Highlands West of the Rift Valley, the Lake Victoria Basin, Central and South Rift Valley as well as the Coastal Strip received significant amounts of rainfall. Analysis of the June 2021 monthly rainfall from 1<sup>st</sup> to 29<sup>th</sup> June 2021 indicates that most parts of the country experienced near to below-average rainfall (below 75 percent of the June LTM). As at 29<sup>th</sup> June, 2021, Kakamega Meteorological Station had recorded the highest monthly rainfall total of 161.2mm (99.6% of its June LTM). This was followed by Lamu station which recorded 146.3 mm (89.0%). Msabaha, Mtwapa, Malindi, Kisii, Kericho, Mombasa, Kitale, Kisumu, Narok, Nakuru and Eldoret stations recorded 126.4mm (80.1%), 126.3mm (91.1%), 110.6mm (76%), 93.8mm (55.2%), 65.8mm (41.1%), 47.9mm (49%), 43.5mm (42.6%), 41.6mm (48.2%), 25.3mm (94.8%), 21.7 (28%) and 11.3mm (11.4%) respectively. The rest of the stations recorded less than 10mm of rainfall with Lodwar, Mandera and Thika recording no rainfall at all throughout the month.

## Outlook for July 2021






The rainfall forecast for July 2021 (Figure 4) indicates a slightly wetter than usual month over the western parts of the country. Near-average to above average rainfall is likely to be recorded over the Highlands West of the Rift valley, Lake Victoria Basin, Central and Southern Rift Valley as well as the Northwestern parts of the country. The Coastal Strip is, however, likely to experience near average rainfall. The Southeastern and Northeastern counties are likely to remain generally sunny and dry.

Occasional cool and cloudy conditions with light morning rains/drizzles are likely to be observed in the Highlands East of the Rift Valley (including Nairobi County) and some parts of the Highlands West of the Rift Valley, Central and Southern Rift Valley as the cold season peaks in July.













## 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