



# Kenya Crop Conditions Bulletin

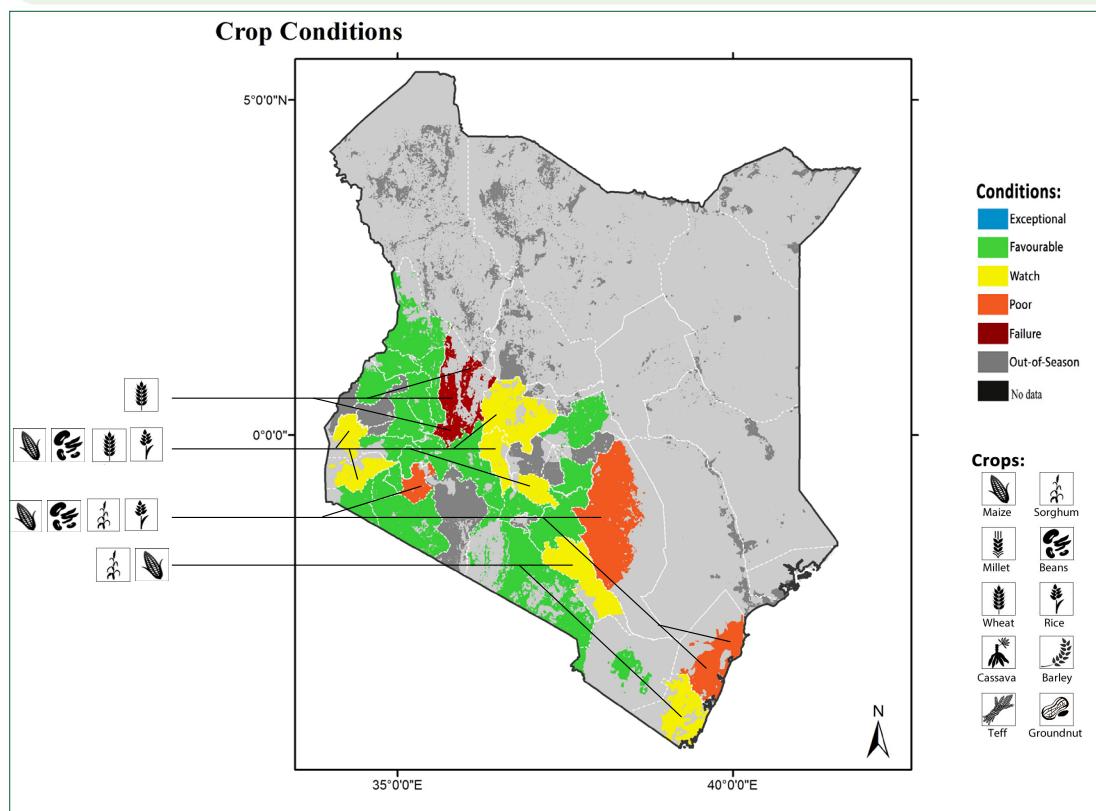
## May 2021

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

#### Overview

- The onset of the March-May seasonal rainfall was late over several parts of the country except in the Highlands West of the Rift Valley, the Lake Victoria Basin and parts of the Highlands east of the Rift Valley where the onset was on time
- The month of March saw depressed rainfall over the whole country and in April and May 2021, several parts of the country received near to below average rainfall
- The rainfall ceased early over several parts of the country except over the Lake Victoria Basin, the Highlands West of the Rift Valley, the Central and South Rift Valley and parts of the Coastal strip. The distribution, both in time and space, has been generally poor over most parts of the country
- The late onset of rains, planting and other cropping activities delayed across the regions affected and the crops are behind in development as compared to same period last year
- An estimated 32 million bags (90kg bag) of maize is expected from the current season compared to the national long term average of 34 million bags
- Beans production will decrease by approximately 30 percent to an estimated 5 million bags from a long term average of 8 million bags



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Map showing regional crop conditions information in Kenya as at 20<sup>th</sup> 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 favorable are labeled on the map with their driver.



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

The outlook for the **June-July-August (JJA) 2021** rainfall season indicates that the Highlands West of the Rift Valley, Lake Victoria Basin Region, Central and Southern Rift Valley as well as the Northwestern region are likely to receive slightly above-average rainfall. The Coastal strip is likely to receive below-average rainfall. The rest of the country is expected to remain generally dry. Most areas in the Central Highlands and Nairobi area are expected to experience cool/cold and cloudy conditions with occasional rain or drizzle. The temperatures are likely to be slightly warmer than average for the season.

## Assessment by Region

### Central Region

In Central region the performance of the long rains has generally been poor. The rains have been depressed and poorly distributed over the season. Consequently, the crop performance has been adversely affected especially in the marginal lower parts of the county while the crop is generally good in the upper zones. However, the better part of the month of May has been generally very wet and warm in the entire region. The favourable weather conditions have contributed to improved crop growth especially in medium and high potential zones.

**Outlook:** The performance of the long rains has been below long term average but favorable for bean crop development. The bean crop is at early reproductive stages of development, if more rainfall is received a good harvest will be realized. For beans 70 percent of expected yields is expected thus normal production will be achieved. For maize in Kiambu 40 percent is the expected yields thus it is below normal.

### Coast Region

The maize crop in coast is in poor condition especially in Kilifi, Tana River and Taita Taveta while the crop in Kwale is under watch due to late onset of rains which were also poorly distributed; and prevailing dry conditions after the early cessation of rains. The trend in Kilifi, Tana River and Taita Taveta is worsening but improving in Kwale after resumption of the rains. The planted crop in Tana River dried up at below knee high stage due to total lack of rains received during the reporting period. Cowpeas and green grams were in favourable conditions in Kwale but in poor conditions in Kilifi and Taita Taveta due to prevailing dry conditions.

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

### Lower Eastern Region

In the Lower Eastern Region, condition for maize is only favourable in Machakos, on watch in Makueni but poor in Kitui County. The trend is stable in Machakos and Makueni but worsening in Kitui due to the early cessation of rains and prevailing dry conditions. Generally there was late onset of rains in the region. Most of the crop is at flowering stage to cob formation. Beans, Cowpeas and Green grams are in favourable condition in Machakos, under watch in Makueni but poor condition in Kitui.

**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 hill masses of Makueni with the lowlands expecting below normal yields. For pulses below normal yields are expected in the region due to the dry spell experienced in the reporting period.

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## Upper Eastern Region

Crop condition was favorable in 50 percent of Meru County. However, on set of rains in Buuri Sub County and parts of Tigania sub counties was delayed till mid-April hence crops are at early vegetative phase. For green grams, production is expected to increase due to adoption of Technologies Innovations and Management Practices (TIMPs) being promoted by National Agricultural and Rural Inclusive Growth Project (NARIGP). Cowpeas production is expected to be low due to effects of Powderly mildew and aphid's infestation. Control efforts by farmers is ongoing. Wheat is performing well at present but an invasion by Quelea birds towards end of May might affect the overall yields.

**Outlook:** Production of wheat is expected to be normal if the current favorable conditions continue but it is likely to be affected by the invasion of Quelea quelea birds which are currently being controlled. Beans production is expected to be normal if the current favorable conditions continue. The beans are almost ready hence not likely to improve. In lower parts of Meru County especially in Imenti and Igembé sub counties, the expected yield is on average 3 bags per acre. In Buuri, there is likely to be total crop failure since the rain started in Mid-April and its already subsiding when the crop is at early vegetative phase. Green grams production is expected to be normal if the current favorable conditions prevail.

## North Rift Region

In North Rift, the crop condition is favourable in Nandi, Uasin Gishu, Trans Nzoia and Elgeyo Marakwet Counties covering an estimated 70% of the total crop area in the region. The Counties of Baringo, Samburu, Laikipia and West Pokot are under watch due to prevailing dry conditions. In Trans Nzoia, crops in Chepchoina, Endebess and Keiyo wards bordering West Pokot are experiencing moisture stress. The condition for Sorghum in West Pokot and Irish Potato crop in parts of Baringo (Eldama Ravine) is in favourable condition. There are reported cases of FAW infestation in Trans Nzoia, Baringo, West Pokot, Uasin Gishu and Nandi (estimated at 5% of crop area). However, farmers have employed chemical control measures using recommended pesticides. In counties where crop conditions are under watch, the key drivers include delayed onset of the MAM rains, prevailing dry spells and Fall Army Worm (FAW) infestation. In all the Counties, planting has been completed for maize, beans and irish potato with 90% of target area planted. Area under maize has decreased in Elgeyo Marakwet County as farmers have shifted to beans and Irish potato production.

Wheat planting is ongoing in Trans Nzoia, Uasin Gishu, Baringo & Elgeyo Marakwet Counties. The maize crop is at early vegetative phase in all the Counties except Tinderet and Aldai in Nandi County where the crop is at tasselling stage and Baringo where the crop is at germination in some areas. Beans and Irish potato crops are at vegetative to reproduction stage in all counties. Weeding and pest control activities are being undertaken. For maize crop, top dressing is a challenge due to prevailing dry spell in all Counties.

**Outlook:** Average to above average production is expected in Trans Nzoia, Nandi, Uasin Gishu and Elgeyo Marakwet while average to below average production is expected in the other 4 counties due to decrease in area under the crop, poor rainfall performance, poor germination and pest infestation. Crop failure may be experienced in parts of West Pokot, Laikipia and Baringo Counties.



Figure 1: Healthy bean crop at early vegetative stage in Elgeyo Marakwet County

## South Rift Region

The crops conditions are good in most parts of the region having received adequate rainfall for long rain season. Maize and beans are at different stages in the region depending on timeliness of land preparation, rainfall onset, topography and different agro ecological zones. Apparently, most of the crops are at vegetative to reproductive stage.

**Outlook:** Normal yield expected for maize in the four counties if the current weather conditions continue. However, crop failure is expected in some parts of Nakuru e.g Rongai Sub County. For beans normal yield is expected in most parts except in Nakuru and some Sub counties in Kajiado.



Figure 2: Condition of Maize in Rongai Sub county, Nakuru County

## Lower Nyanza Region

For Lower Nyanza region conditions are favorable having improved from the previous exposure to floods and FAW. Farmers were able to control the effect of the pests with support of National and County Governments hence reducing the impact of the pests on the overall yield. The region planted in Mid-March. 60 percent of the crop is at tasseling stage and 40 percent at vegetative growth. There was early cessation of rains in Mid-May when crops were at tasseling and dough production. This is expected to impact on the production eventually. Beans in the region are grown as intercrops with maize and is at maturing stage with 35 percent being harvested in Kisumu, Homabay 40 percent harvested and Siaya beans harvested at 10 percent. Crops planted as from mid-March are in good condition.

**Outlook:** Normal yields expected for the Maize crop planted in Mid-March. Below average yields expected for the crop planted late due to the early cessation of the rains. Normal yields expected for the beans crop in the region.

## Upper Nyanza Region

In Lower Nyanza region, the crops are generally in good condition from the adequate and well distributed rainfall received during the long rains season. Crop stages of growth for maize vary from late vegetative phase to early dough stage for the early planted crop. 70 percent of the maize crop is at early vegetative production (tussling stage) and 30 percent of maize crop is at dough stage. Bean stages vary from flowering to maturity. The area received a long stretch of heavy rains resulting in fungal diseases and shading which resulted in fungal diseases hence affecting the performance per crop.

**Outlook:** Average to normal yields expected in Migori and Homabay and poor to average yields expected in Kisumu and Siaya. Expected yield is 20 bags per Ha in Kisii and Nyamira counties.

## Western Region

In Western region, conditions are favorable for both maize and beans due to good performance of rainfall. Maize is at different stages depending on timeliness of land preparation, rainfall onset, topography and different agro ecological zones.

**Outlook:** Crop performance is good and normal yields are expected if current weather conditions continue.



Figure 3: A good maize crop in Samia Sub county, Busia County



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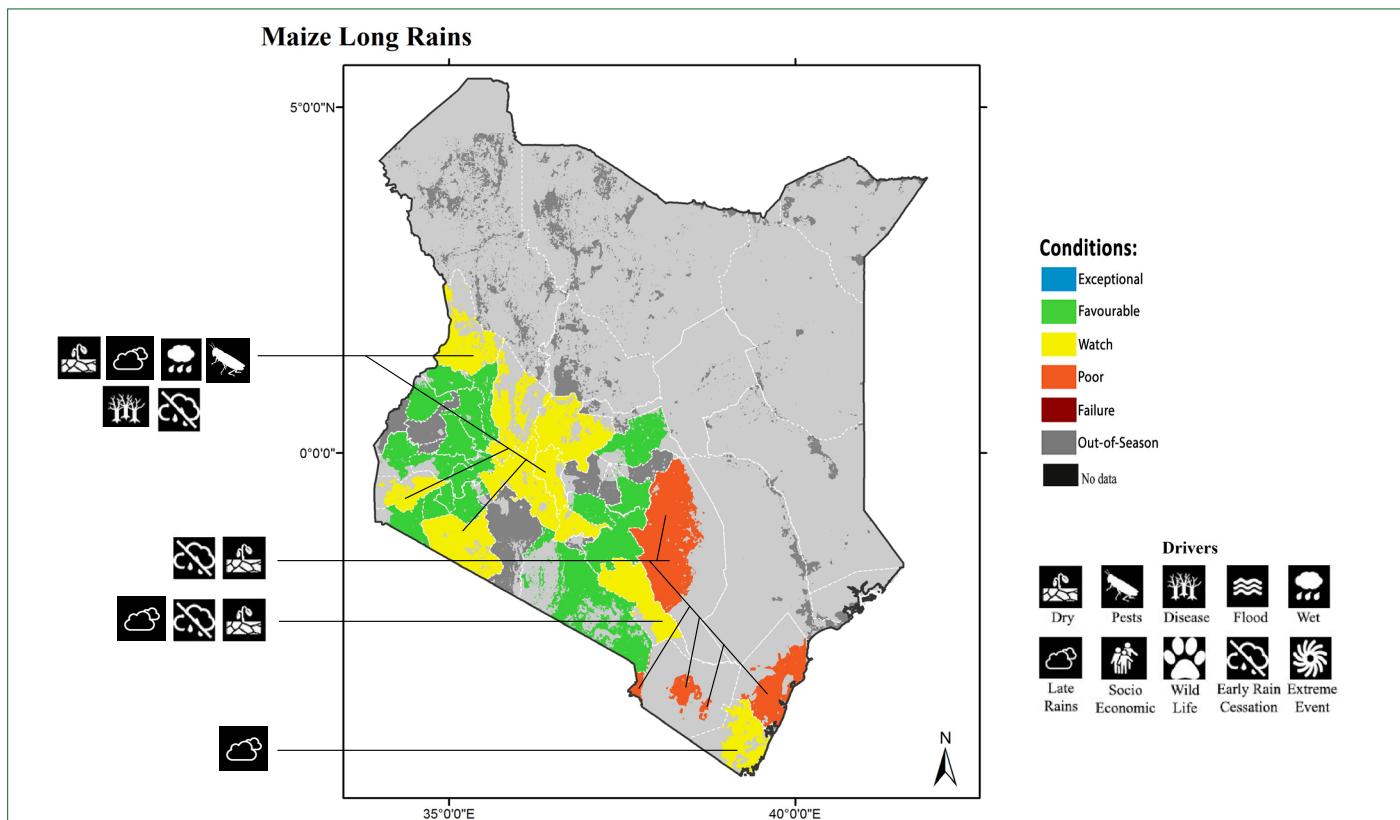
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## Assessment by Crop

### Maize Long Rain Conditions

In Kiambu county, the 60 percent of area affected by Fall Army Worm improved with some flush rains that were experienced in April coupled with use of pesticides as a control strategy. 20 percent of land under maize in Kirinyaga is in maize streak and FAW prone areas. The maize crop in Coast is in poor condition in Kilifi, Tana River and Taita Taveta counties while the crop in Kwale is under watch due to late onset of rains which were poorly distributed and prevailing dry conditions and subsequent early cessation of rains. The trend in Kilifi, Tana River and Taita Taveta is worsening but improving in Kwale after resumption of the rains. The planted crop in Tana River dried up at below knee high due to lack of rains received during the reporting period. Conditions are favourable for Maize in Machakos but on watch in Makueni and Kwale. In Taita Taveta, Kitui and Tana River conditions are poor and total crop failure is expected due to inadequate rains that were late in onset and compounded by early cessation. Some farmers in these areas did not even plant. Average yields are expected in Machakos and Makueni hill masses and parts of Kwale county. Late planting was reported in Baringo where majority of the maize crop in the farms is at germination stage. In the other North Rift counties, the crop is at early vegetative stage while in some parts of Nandi, the crop is at tasseling stage.

Expected maize production normal in Central region due favorable weather conditions throughout the growing stages, fewer incidences of pests including fall armyworm (FAW) and diseases. There was FAW infestation in Kiambu and the lower zones of Kirinyaga. Farmer support services including inputs subsidy and relief have also contributed to the favorable outlook of the crop. Maize production is favorable in Upper Eastern region due to reception of adequate and well distributed rainfall in the season and normal yields are expected. Maize is at vegetative to reproductive stages. Expected maize production in South Rift is normal in most parts of the region due to favorable weather conditions through the growing stages. Incidences of FAW infestations were however witnessed in late planted areas of Nakuru e.g Elementaita of Gilgil Sub County. The earlier planted maize in Narok West was affected by Maize Lethal Necrosis Disease (MLND), inadequate rainfall and claims of poor seed about 21 percent.



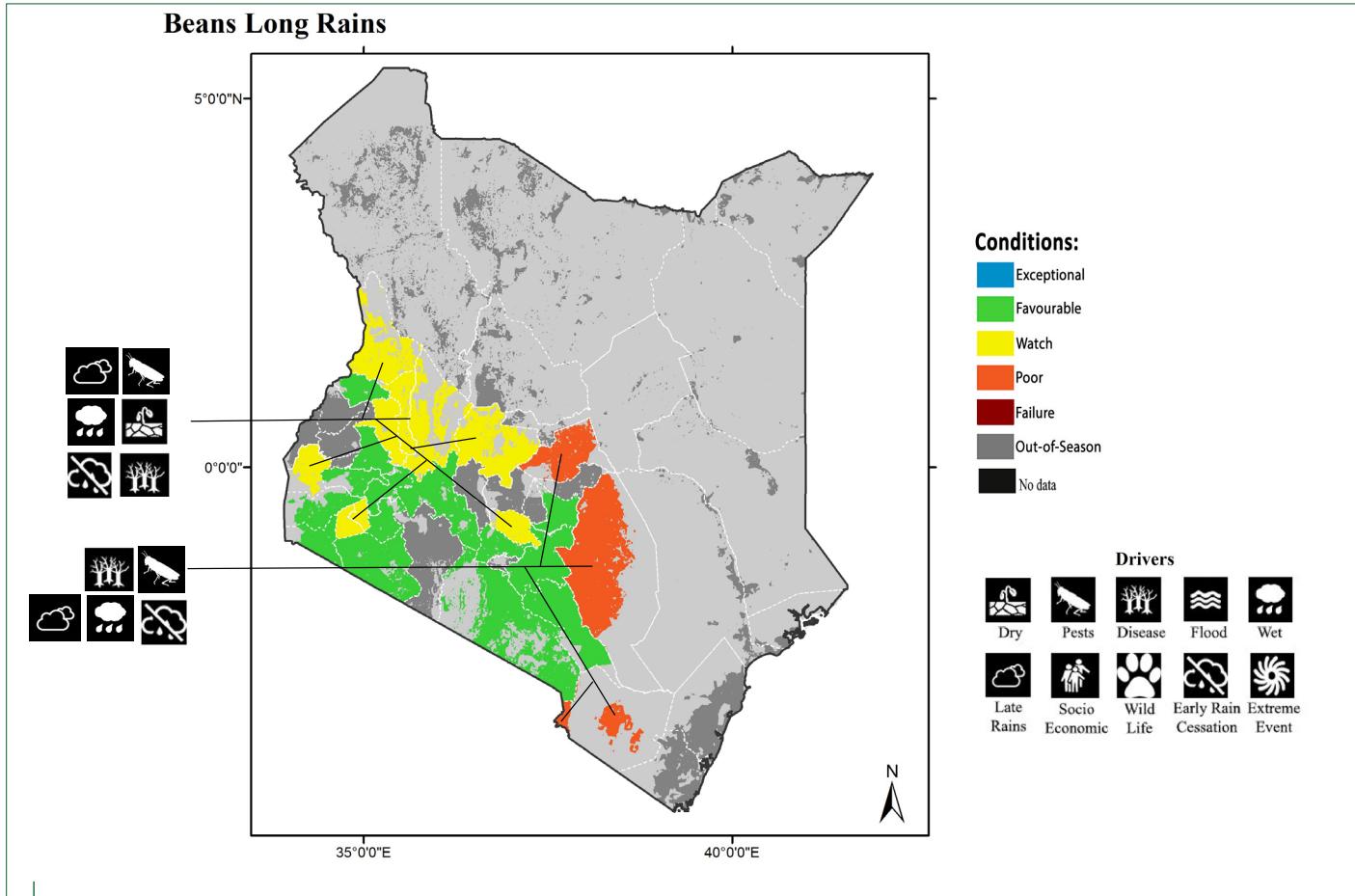
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## Bean Conditions Long Rains

Beans in Central region are at flowering to pod formation stages of development. These are critical stages of development which require moisture for good yields .30 percent of land under beans is in beanfly and rust prone areas. In Taita Taveta and Kitui, beans crop condition is poor due to dry conditions and early cessation of rains. The crop is in favourable condition in Machakos and Makueni especially in the hill masses. The yields are expected to reduce to below average due to moisture stress experienced by the crops in Machakos and Kwale. A total crop failure will be experienced in Kitui and minimal yields expected in Taita Taveta.

The crop is at germination stage in parts of Samburu i.e. Samburu Central as well as Mogotio and Tiaty in Baringo county. In the remaining North Rift Counties, the crop is at flowering to reproduction stage. Increased acreage under beans was reported in Elgeyo Marakwet County. In Central Region bean is in favorable condition in the entire region due to favorable weather conditions throughout the growing stages and fewer incidences of fungal diseases. Farmer support services including inputs subsidy and relief have contributed to the good performance of the crop. The expected yield is below normal. The condition of beans in Tharaka Nithi and Meru is poor, while the crop in Embu County is in favorable condition. The expected yield is below normal. In Western region, bean production is in favourable condition in the entire region due to favourable weather conditions throughout the growing stages and fewer incidences of fungal diseases. Bean crop is between flowerings to harvesting stages in the four Western counties. Production in lower and upper Nyanza is expected to be normal except in Siaya, Kisii and Nyamira counties which received heavy rainfall in April and early May leading to fungal infections and post-harvest losses. Beans production is favorable in the entire South Rift region due to favorable weather conditions throughout the growing stages. Beans are at vegetative to reproductive stage, however beans in Bomet are at planting to early vegetative stages. Minor pests and diseases including aphids, fungal and rust conditions have been witnessed in Narok.



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## Wheat Conditions

In Central region, wheat is produced in the two Kieni Sub counties in Nyeri County in the upper zones, crop performance is favourable. Planting for the long rains is completed in Laikipia. Land preparation and planting is ongoing in Trans Nzoia, Uasin Gishu, Elgeyo Marakwet, Samburu and Baringo Counties.

In Meru wheat is cultivated almost entirely by large scale farmers during the long rains i.e. over 75%. These farmers practice conservation agriculture and the crop is at soft dough stage and has not been affected much by the weather.

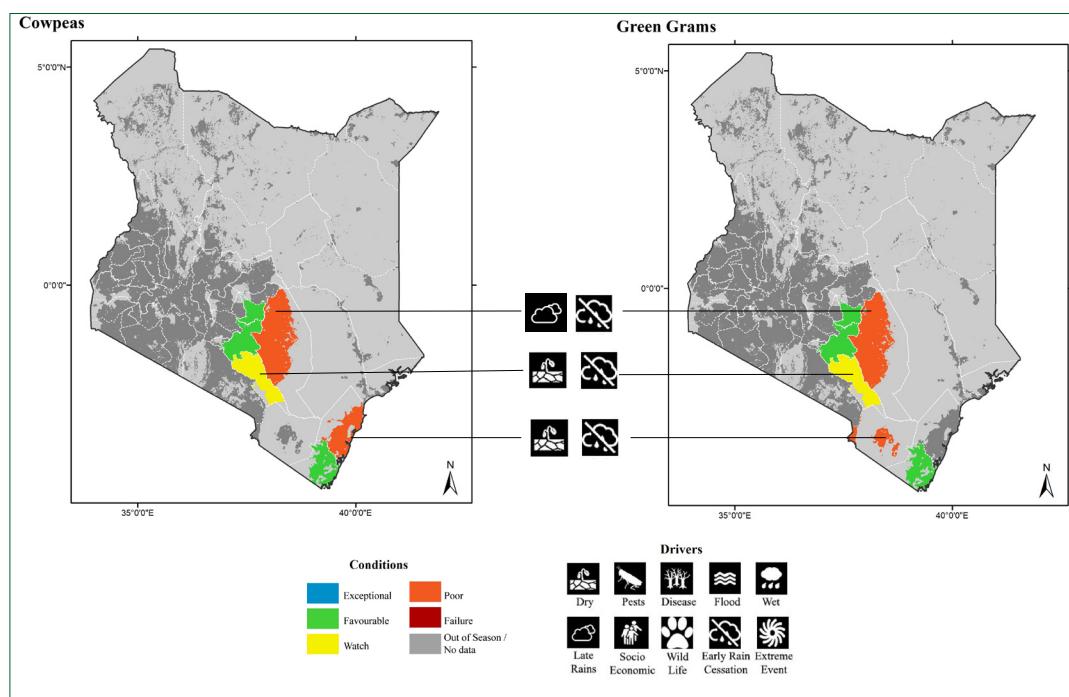
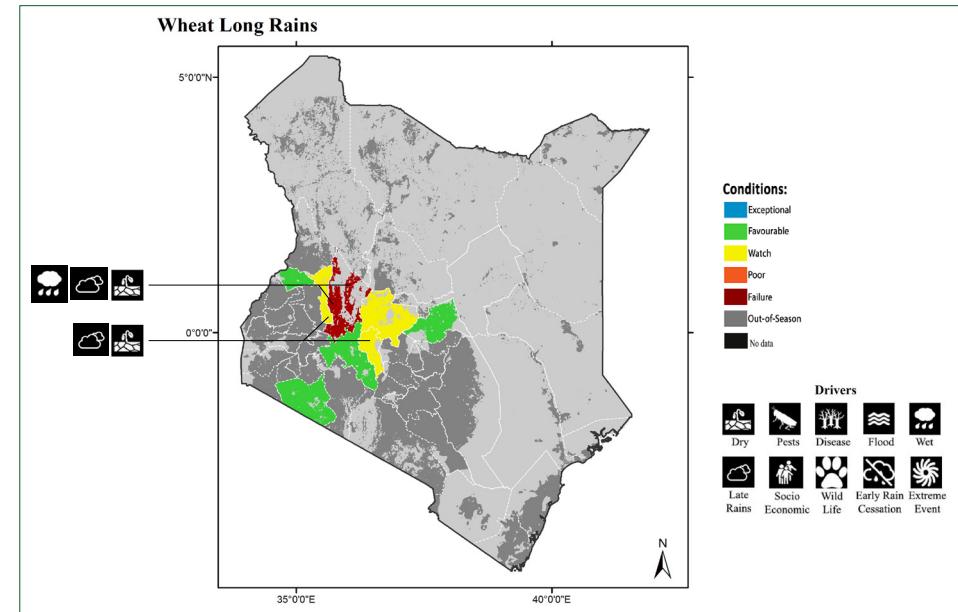
However, for small scale farmers the crop depends entirely on rainfall hence it's at early vegetative stage and likely to fail. The wheat is performing well at present but an invasion by quelea birds towards end of May may affect the overall yields.

## Green Grams and Cowpeas

Crop conditions for cowpeas are poor in Kilifi and Kitui but under watch in Makueni. The crop condition is favourable in Machakos and Kwale counties. The poor condition is attributed to dry conditions experienced in May. The condition for the cowpea crop in Embu and Tharaka Nithi is favourable. In Tharaka Nithi, early planted crop is fair, while for ASAL areas the crop performance is below average due to moisture stress and late onset of the rains which was in 4<sup>th</sup> week of March.

Green grams, conditions are favourable in Kwale and Machakos, under watch in Makueni but poor in Taita Taveta and Kilifi counties. Generally the yields are expected to decline to below average due to moisture stress experienced by the crops.

The expected low production is due to Powdery mildew and aphids infestation.





Republic of Kenya

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

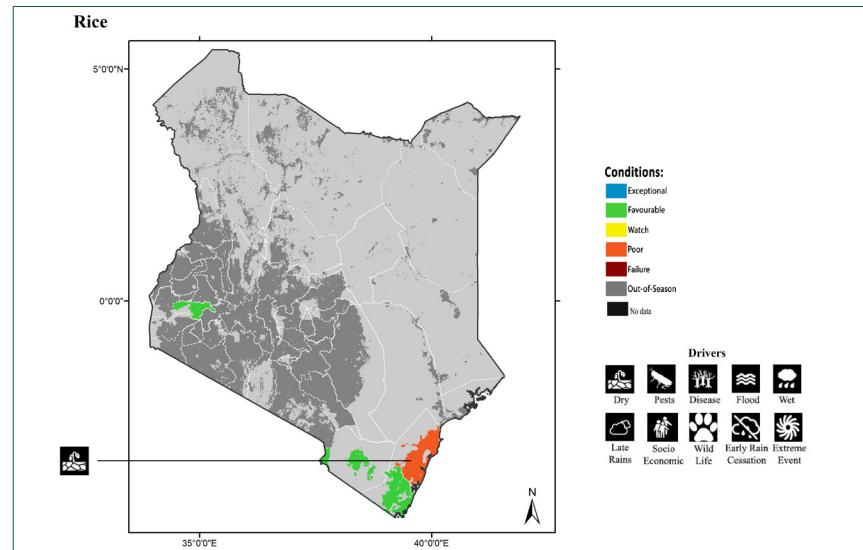
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## Rice Conditions

Rice is in favourable condition in Kwale and Taita Taveta while the crop is in poor condition in Kilifi due to inadequate moisture in valley bottoms where the local varieties and upland rice is planted. 85 percent of the crop in Kilifi may be lost if the rain condition does not improve.

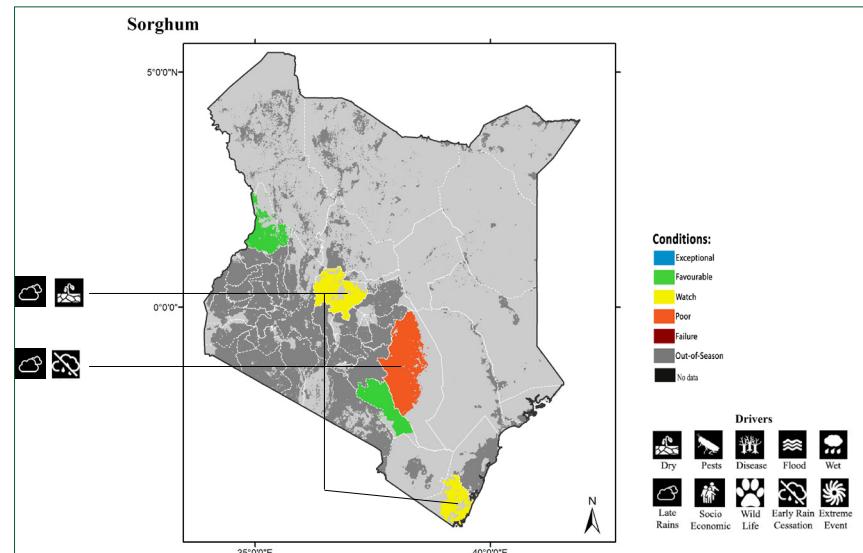
Based on the current situation, it is expected that a yield of 95 percent will be achieved in Taita Taveta. In Kwale expected yield is below normal as there is inadequate water in the rice farms. In Nyeri, the crop is under watch conditions. 90 percent of land is under Quelea quelea bird attack.



## Sorghum Conditions

Sorghum is in favourable condition in Makueni and under watch in Kwale. The crop is in poor condition in 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. In Makueni and Kwale, below average yields are expected.

In parts of West Pokot County especially Pokot South, the crop is at vegetative to reproduction stage and the condition is favourable. Normal harvest expected in all agro ecological zones.

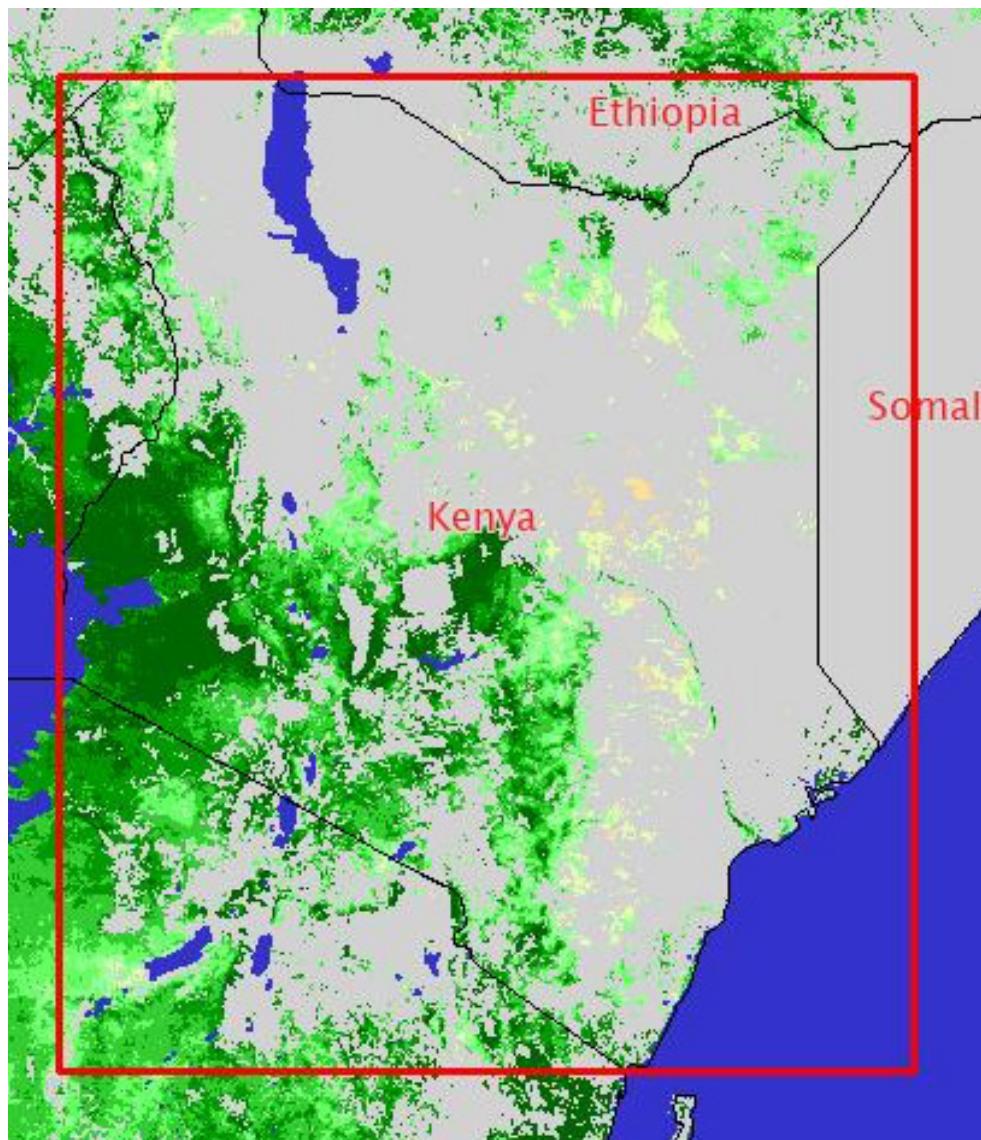




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## Vegetation Conditions



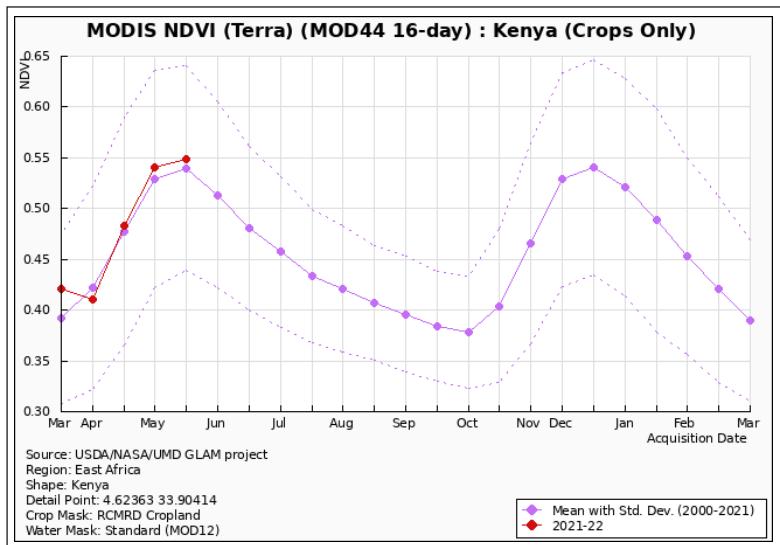
### Key

<span style="background-color: #996633; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	(0 to .10)	Sparse Vegetation	<span style="background-color: #669933; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	(.51 to .60)
<span style="background-color: #CC9933; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	(.11 to .20)		<span style="background-color: #336633; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	(.61 to .70)
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<span style="background-color: #33CC33; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	(.41 to .50)		<span style="background-color: #CCCCCC; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	No Data

The Vegetation map represents a 16-day anomaly image for 2021-May-09 to May-24. 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.



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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

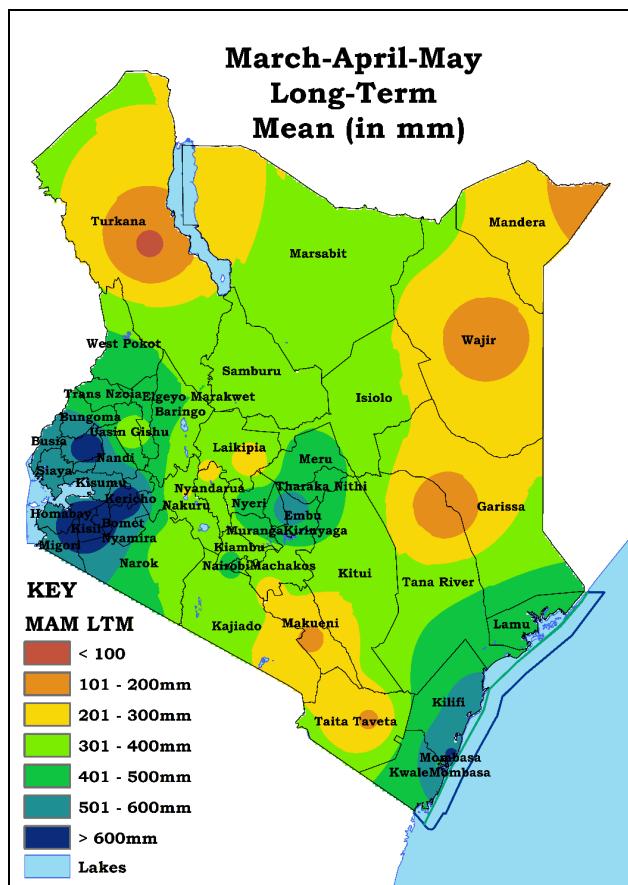


Figure 4: March-April-May Seasonal Rainfall Long-Term Mean

## April 2021 Weather Review

The month of April 2021 was characterized by occasional rainfall over the Lake Victoria Basin, highlands west of the Rift valley, central and southern Rift Valley, the highlands east of the Rift Valley as well as parts of the south-eastern lowlands. The northwest, northeast and the coast remained generally dry throughout the month with few days experiencing rainfall especially at the beginning and towards the end of the month. However, isolated cases of heavy rainfall were recorded over the highlands west of Rift Valley, highlands east of Rift Valley, Nairobi area and few areas over northeast during the month. Kisumu and Wilson are the only stations that recorded above normal rainfall in April with 134% and 125.7%, respectively. Other stations that recorded near average rainfall are Dagoretti, Eastleigh, Kericho, Mandera, Thika, Kakamega, Kisii, Eldoret, Voi, J.K.I.A and Embu. All the other stations recorded below normal rainfall. Rainfall analysis during the months of March and April 2021 indicates that the seasonal rainfall was depressed over most parts of the country for the period.

## Outlook for March-April-May 2021

The forecast as shown in Figure 4 indicates that the Lake Victoria Basin, parts of the Highlands East of the Rift Valley (including Nairobi County), the Highlands West of the Rift Valley, parts of the Northwest, the Southern Rift Valley and Central Rift Valley are likely to experience enhanced rainfall. However, near average rainfall is expected over the Southeastern Lowlands, parts of Northeastern and the Coastal region. The extreme Northeastern region is likely to experience below average rainfall. The temporal rainfall distribution is expected to be poor especially over the Eastern and Coastal regions. The peak of the rains is expected to be in the month of April for most regions except over the Coastal Strip where the peak is expected during the month of May.

## 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