Overview

- Late onset, poor distribution and erratic patterns of the 2019 long rains affected the early planted crop resulting in water stress, wilting and poor germination in most parts of the country.
- Planting was delayed in some parts of the country and this is expected to cause a reduction in total production.
- With the onset of the rains late in April, planting and replanting is expected to begin and continue in May.
- Fall army Worm infestation were observed in Narok, Laikipia, West Pokot, Trans Nzoia and Elgeyo Marakwet.
- Notable increase in the prices of maize, beans and wheat was observed in selected markets.

Map showing regional crop conditions information in Kenya as at 20th April 2019 for maize, wheat, beans, green grams and cowpeas. 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.

OUTLOOK (Kenya Meteorological Department (KMD)/State Department of Crops Development (SDCD))
The late onset of the MAM 2019 rains will impact negatively on agricultural activities in most agricultural areas of the country. Farmers are advised to plant fast-maturing crops following the expected short rainfall season and drought resistant crops in areas expected to receive below-average rainfall. Onset of rains late in April with expectations to continue in May will have a positive impact on both crops and pastures.
Assessment by Region

In Central Region, there was delayed onset of rains as the season commenced in the fourth week of April. Early planted beans and maize did not germinate well necessitating replanting. **Outlook:** Below average yields expected; however, the early maturing bean varieties are likely to perform better.

In Coast Region, all counties are under watch due to prevailing dry conditions caused by delayed onset of the long rains. Land preparation is ongoing in preparation for planting maize, beans, cowpeas and green grams. Minimal planting of maize has been done especially in the hilly areas where some slight rainfall was received. **Outlook:** Below average production due to minimal planting of beans, maize and green grams caused by late rains as the season advances. Planting of cowpeas is expected to begin in May.

In the Lower Eastern Region, all counties are under watch due to prevailing dry conditions caused by delayed onset of the long rains. Land preparation is ongoing in preparation for planting maize, beans, cowpeas and green grams. **Outlook:** Minimal planting of beans, maize and green grams is expected due to the late rains as the season advances. Planting of cowpeas is expected to begin in May.

The Upper Eastern Region, delayed onset of rains resulted in poor germination of the early planted crops necessitating replanting. **Outlook:** Below average yields expected; however, the early maturing bean varieties are likely to perform better.

In North Rift, all counties are under watch. In Elgeyo Marakwet, land preparation is ongoing for beans and wheat. However, early planted maize has been adversely affected by erratic and late rains and Fall Army Worm (FAW). However, In Nandi, planting is ongoing in all sub-counties except Aldai which planted early and is currently at weeding stage. In Laikipia over 60% of the cropped land has been prepared and planting is ongoing, but cases of FAW in irrigated sites are still being reported. In Uasin Gishu and Trans Nzoia, prevailing conditions resulted in poor germination of the crops. In West Pokot, planting is complete in 90% of the uplands, but MLND and FAW are still a threat to early established maize currently at ear formation in irrigable areas. In Baringo, poor germination was observed in Mogotio and Ravine with crop failure observed in Pekerra irrigation scheme.

**Outlook:** Normal yields expected in the most parts of the region since the conditions are expected to improve with expected rains. In Uasin Gishu and Baringo yields are expected to drop due to delayed rainfall and poor germination. In Laikipia, good production is expected if FAW is managed and rains are favorable. In Elgeyo Marakwet, replanting and stable rainfall conditions and effective FAW control will be required for the county to achieve normal production.

The South Rift region, is under watch due to late onset of the rains. In Narok, the beans and wheat are between vegetative and reproductive phase and have been affected by water stress leading to about 30% of the crop drying off. About 90% of area set aside for maize has been planted; but the crop which is between vegetative and reproductive phase. There are also cases of MLND and FAW. In Nakuru, planting is ongoing since the second week of April. In Kericho, planting is for maize and beans ongoing, except in the tea zones where the process is complete and second weeding is ongoing for maize. In Bomet, the maize crop is in various stages. **Outlook:** The season is unpredictable because of delayed rains and this is likely to result in reduced yields. In Narok, the situation is expected to worsen affecting yields.

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In Lower Nyanza region, conditions are under watch and the trend is expected to worsen since most parts of the region experiences dry spells that occurred after planting, coupled with erratic rainfall leading to serious water stress on the crops. The crops are in various stages from planting to early productive phase. **Outlook:** Below average yields expected due to prolonged dry spells and erratic rains. There is likely to be total crop failure for the crop planted in late February/early March.
Early Planted crops in Homa Bay

In **Upper Nyanza region**, the crops are under watch due to water stress but the crop is improving due to onset of the rains in the 4th week of April. 20,000ha of beans have been planted and intercropped with maize. The crop stages vary from second weeding and approx. 10% at pod development/maturity for the early planted crop. **Outlook:** Below average yields due to prolonged dry spells and erratic rains.

Crop conditions in Kisii County

The **Western region**, is under watch due to dry conditions and late onset of rains. Rains came in the third week of April and the planted crop is at varying stages from planting to germination. **Outlook:** Below average yields due to late rains.

Fall Amy Worm observed early in April in Vihiga County
Assessment by crop

1. Maize Conditions in March 2019
Maize production is under watch in the entire country due to dry conditions and poor distribution and erratic rains. Where planting had begun, poor germination was observed and in some areas such as there was crop failure. In Narok, Laikipia, West Pokot, Trans Nzoia and Elgeyo Marakwet, incidents of FAW were observed.

2. Beans Conditions in March 2019
Delayed onset of rains affected beans establishment. In areas where the crop was planted such as central, North Rift, poor germination was observed and, in some cases, necessitated replanting. In the coast and lower Eastern regions, land preparation is ongoing for beans planting.
3. Green Grams and Cowpeas
Planting is expected to begin in May due to late onset of rains. Production is expected to be below average due to late planting.

4. Wheat Conditions in March 2019
Delayed rainfall onset led to late planting in the month of April and the process is almost complete. In Central region emergence of the earlier planted seeds can be observed. In North rift, land preparation is ongoing. In Narok, the crop is between vegetative and reproductive phase and is in fair condition.
Vegetation Conditions

The Vegetation map represents a 16-day anomaly image for 2019-April-07 to April-22. 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 areas 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. The dotted line displays the standard deviation showing how values tend to spread out from the mean. While values for April to July 2018 were significantly above average, during the October 2018 to January 2019 vegetation conditions across Kenya were below average.

HIGHLIGHTS

Very dry conditions were experienced in most parts of the country adversely affecting crops and pasture availability. Looking at the graph, conditions in April (Red) were really dry when compared to the long term mean (purple). However, rainfall received toward the end of April is promising for crops and pasture recovery.
May 2019 forecast
According to the Kenya Meteorological Department (KMD), counties in Western and Central Kenya are likely to receive average to above average rainfall while the rest of the country is expected to receive near average to below average rainfall. However, the expected rainfall in May is expected to improve water and pasture conditions. There are good prospects for crop performance especially in the agriculturally high potential areas. Localized flooding is probable in parts of Western Kenya as a result of episodic heavy rainfall that is likely to occur in the region. Cases of lightning strikes are also probable in Western Kenya.

Regional Outlook:
Forecast for March April May (MAM) 2019 Outlook
Good crop and pastoral prospects are generally expected. Further, there is a likelihood of a reduction in fall army worm infestation as high rains are unfavorable for their multiplication and thus high prospects for food security. Expected enhanced rains are likely to bring some relief especially in areas that had experienced moisture deficits in the previous season (OND 2018). In general, good crop projections are expected if the rains do not exceed the specific crop requirements. In Kenya, early onset of the long rains is expected.
Market information
The section provides the wholesale monthly average prices of maize, beans and wheat in major markets across the country.

Kisumu recorded the highest dry maize prices at Ksh. 3250 and the lowest prices were observed in Nakuru where the maize was selling at Ksh. 2890. Mombasa recorded the highest prices in Green maize at Ksh. 4620, Kisumu recorded the highest prices in Canadian beans at Ksh. 8595, while Eldoret recorded the highest prices in Rosecoco variety at Ksh. 9720, and Eldoret for the Mwitemania variety at Ksh. 8910. An increase in all prices when compared to March was observed.

Dry maize was selling at an average price of Ksh. 2897 up from Ksh. 2230 in March, with the highest prices observed in Kisumu at Ksh. 3250 and lowest prices recorded in Nakuru at Ksh. 2575. Maize prices increased in all markets.
Green Maize was selling at an average price of Ksh. 3068 up from Ksh. 3018 in March with the highest prices observed in Mombasa at Ksh. 4620 and the lowest prices recorded in Nakuru at Ksh. 2200. A notable increase in prices was observed.

Canadian Beans variety was selling at an average price of Ksh. 7140 up from Ksh. 6528 in March with the highest prices observed in Kisumu at Ksh. 8595 and the lowest prices recorded in Nairobi at Ksh. 6199. A notable increase in prices was observed.

Rosecoco Beans variety was selling at an average price of Ksh. 7622 up from Ksh. 6780 in March, with the highest prices observed in Eldoret at Ksh. 9720 and the lowest prices recorded in Mombasa at Ksh. 5739. A notable increase in prices was observed across the selected markets.
Mwitemania Beans variety was selling at an average price of Ksh. 6690 up from Ksh. 6165 in March, with the highest prices observed in Eldoret at Ksh. 8910 and the lowest prices recorded in Nakuru at Ksh. 4925 A notable increase in prices was observed across the selected markets.

Wheat was selling at an average price of Ksh. 3980 down from Ksh. 4200 in March with the highest prices observed in Malindi at Ksh. 5000 and the lowest prices recorded in Eldoret at Ksh. 3000. Prices remained stable across the selected markets.
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 Events**: 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 Rains Cessation**: Rains end earlier than expected in the season
- **Pests**: Destructive insects, birds or animals.
- **Diseases**: 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.)
- **Conflict**: Armed conflict or civil unrest that is preventing the planting or harvesting of the fields by the farmers.
- **Wildlife Damage**: Crop destruction by wildlife
Partnerships

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.

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