National Synthesis (Maize, Beans and Wheat)

Overview

- The month of July had good rains in the major crop growing areas in the Western and North Rift regions.
- Crop performance was poor with crop failure experienced in parts of Lower Eastern, Coast, Narok West.
- Early planted crops were affected by water stress resulting in below average yields being realized.
- FAW infestation, drought and MNLD affected crops in Narok West, Bomet and Bungoma. Kilifi and Kisumu also experienced FAW infestation.
- A reduction in total area planted for maize, beans and wheat observed due to late onset of the rains.
- Harvesting of beans is ongoing in Meru, Nandi, West Pokot and Elgeyo Marakwet. Maize harvesting is ongoing in parts of Nyanza, Western and Rift Valley regions.
- Slight reduction in the prices of maize, while a slight increase in beans and wheat prices was observed in selected markets.

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

The expected enhanced rainfall in Western Highlands and parts of the Rift Valley is expected to result in further improvement in crop performance in July. In August, generally sunny and dry weather conditions are expected in most parts of the country, providing conducive environment for harvesting. However, enhanced rainfall is expected in Western highlands and in the Rift Valley regions.
Assessment by Region

The Central Region, received favorable rains and the maize crop condition improved in the medium to high potential areas of the County. In the lower zones, the rains have been poor and the maize crop condition is poor. Fall Army Worm (FAW) infestation in Nyeri has reduced to about 2%. Beans are at the physiological maturity stage but the wet and cold conditions hampering the drying of the pods. Conditions are favorable for wheat production.

Outlook: Production likely to be normal in upper zones if the favorable conditions continue.

In the Coast Region, all crops are under watch due to prevailing dry conditions and early cessation of the rains. In the Tana Delta, the maize crop is stunted due to leaching which was as a result of water logging after the heavy rains received in May. In Tana River and Tana North sub-counties moisture stress affected the crops. A few cases of the Fall Army Worm (FAW) infestation were reported in Kilifi, although the maize crop is recovering due to rains experienced in July. Planting of legumes(cowpeas and green grams) is ongoing.

Outlook: Below normal yields expected in most parts of the region; except in Magarini, Malindi, Kaloleni Sub Counties, parts of Rabai and Kilifi South where good yields are expected due to the rains experienced in July. In Kwale, only 10% of the crop planted will be harvested.

In the Lower Eastern Region, poor crop conditions prevailed with some areas experiencing total crop failure.

Outlook: Production is likely to be below normal due to the moisture stress that was being experienced during the month. Crop failure is likely to be experienced with only 10-20% of yields realized in some parts of Machakos, Makueni and Kitui Counties for maize. Below average yields to total crop failure is likely for pulses.

The Upper Eastern Region, is under watch due to poor rains. In Meru, the majority of the maize crop is in late vegetative phase and was affected by the prevailing dry conditions and late rains. The area planted with maize is 44,485 Ha out of a target of 61,595 Ha. Harvesting of beans is ongoing in Meru, although the crop dried prematurely in 4 sub-counties due to early cessation of the rains. Area planted with beans is 51,910 Ha out of a target of 67,973 Ha. Conditions are under watch for wheat, which in Meru, is in the vegetative stage for small scale farmers but in the large-scale farms in Buuri Sub-county the crop is at maturity stage.

Outlook: Production likely to be below average due to poor rains.

In North Rift, conditions are favorable for maize production. The maize crop is at various stages of growth due to differences in planting dates. The rainfed crop is between the vegetative and maturity stages. The irrigated crop has been harvested. In Samburu the maize has been affected by prevailing dry conditions but the crop is expected to improve. In Laikipia, the area under maize production reduced due to late onset of rainfall. Elgeyo Marakwet, Nandi and Uasin Gishu counties are under watch since the beans crop has been adversely affected by the prevailing wet conditions. In Uasin Gishu, fungal rot affected the beans crop. Further, late onset of the rains resulted in a reduction in the total area planted for beans in the region. Harvesting of beans is ongoing in Nandi, West Pokot and Elgeyo Marakwet. In Samburu, dry conditions have affected beans, maize and wheat. Crop stages vary from vegetative to reproductive phase. Approximately 50% of the maize crop is in vegetative phase. Wheat production has been favorable except in Samburu where the crop is under watch due to prevailing dry conditions. In Baringo and Laikipia, the total planted area under wheat reduced due to late rains. In Elgeyo Marakwet and Uasin Gishu, the area under wheat increased.

Outlook: Production is likely to be below average due to poor rains.

Figure 1: Poor crop conditions in the Coastal region

Figure 2: FAW infestation in Kilifi

Figure 3: Maize recovery after the rains in Trans Nzoia County
Outlook: Normal yields are expected in the region if favorable conditions prevail. Beans yields are expected to drop due to experienced wet conditions which resulted in rotting.

In the South Rift region, conditions are favorable for maize and beans production in Kericho. In Narok West there was up to 80% crop failure due to drought, MLND(Maize Lethal Necrosis Disease) and FAW. In Transmara West the maize crop performed well and over 60% of the planted area has been harvested. In Bomet, crop performance was affected by erratic rains, FAW, MLND and drought. Over 80% of the planted maize has been harvested in Bomet. In Nakuru, while conditions were favorable, beans and maize in Elementaita Ward were affected by frost bite. In Kericho, beans are in the reproductive stage, although there was a reduction in total planted area from a target of 20,600 ha to 15,790 ha. The maize crop in Kericho is at various growth stages although the planted area has reduced from a target of 40,200 ha to 33,120 ha. In the tea zone the crop is between silking and late dough stage.

Outlook: In Narok and Bomet, poor to normal maize yields are expected. In Nakuru, normal yields are expected if current favorable conditions prevail. In Kericho, beans yields are likely to decline due to late onset of the rains, but normal maize yields are expected.

In Lower Nyanza region, in Migori and Siaya, the early planted maize crop is under watch, while in Homabay and Kisumu the crop is in poor condition due to late onset of rains, prevailing dry conditions and high FAW infestation. The crop is mature and harvesting is ongoing. Outlook: Below average yields have been achieved from the planted crop. In Kisumu a 50% decrease in yields has been observed.

In Upper Nyanza region, conditions are favorable for maize production especially in Kisii and Nyamira. Although the season started with erratic rains, the situation later stabilized and supported normal production. The maize crop is mature and approximately 40% of the planted area has been harvested. During the season, 35,000 Ha were established in Kisii out of a target of 36,000 Ha. Outlook: Normal yields are being realized.

In the Western region, conditions are favorable in most parts of the county, except in Bungoma, where the maize is under watch due to late and erratic rains, drought and FAW infestation. In other parts of the region, the crop performance is promising because the rains were adequate despite late onset. Approximately 50% of the planted area has been harvested where the crop is mature. Outlook: Normal yields are being realized.
Assessment by crop

**Maize Conditions**
Maize production in the upper rift region was favorable due to improved rains which prompted a recovery and improvement in crop conditions and resulted in a reduction in FAW. However other parts of the country were under watch due to delayed onset of the rains; dry conditions, erratic and poorly distributed rains. In the Lower Eastern region and Coast, the maize crop was poor with total crop failure experienced in parts of Makueni, Machakos and Kitui. In Bungoma, Bomet, Homa Bay and Narok West, the maize crop was affected by the FAW. The crop is between vegetative and harvesting stages. Harvesting is ongoing in most parts of the country.

**Beans Conditions**
While conditions were favorable for beans production in parts of the North Rift Region, in Lower Eastern and Coast, the crop was poor with crop failure experienced in some areas. In Western, Nandi and Elgeyo Marakwet, harvesting of the crop is on-going. In Central, wet conditions caused rotting of beans.
Green Grams and Cowpeas
Crop conditions are poor in the Coast region due to prevailing dry conditions and early cessation of rainfall. Below normal yields are expected.

Wheat Conditions
Conditions are favorable for wheat in most of the growing areas. In Baringo and Laikipia, the area under wheat reduced drastically due late onset of rainfall. In Elgeyo Marakwet and Uasin Gishu, there was an increase in the area planted with wheat. In Samburu, the crop is under watch due to prevailing dry conditions, but the situation is expected to improve in August.
Vegetation Conditions

The Vegetation map represents a 16-day anomaly image for 2019-July-12 to July-27. 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(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.

HIGHLIGHTS

Improvements noted in the major crop growing areas. Looking at the graph, conditions in July (Red) are now at the normal range which is represented by the long-term mean(purple). Despite the recovery and notable greenness in the vegetation in all the crop growing areas, the late onset and variation in frequency and intensity of rainfall affected the crops and provided conducive environment for pest and diseases.
Climate outlook

**August 2019 forecast**

According to the Kenya Meteorological Department (KMD), in August, generally sunny and dry weather conditions are expected in most parts of the country. The Western highlands and the Rift Valley are likely to experience above normal (enhanced) rainfall. Central regions will experience cool and cloudy conditions. The Coastal strip areas are expected to experience generally dry weather conditions with occasional light morning showers. Counties in the North are expected to remain generally sunny and dry throughout the month. The Northwestern Regions (Turkana, West Pokot, Samburu) will experience occasional afternoon showers and thunderstorms especially along the areas bordering Uganda and South Sudan.

**Seasonal Forecast (KMD) for June July August September (JJAS) 2019 Outlook**

The expected enhanced rainfall in Western Kenya and parts of the Rift Valley is expected to lead to good crop performance and agricultural production. The cloudy and drizzly conditions in central highlands are also favorable for good crop performance. However, the dry conditions are expected to negatively influence production in most parts of the South Eastern lowlands as a result of the poor performance of MAM 2019 seasonal rainfall and the expected generally sunny and dry weather conditions June-July-August 2019.
Market information
The section provides the wholesale monthly average prices of maize, beans and wheat in major markets across the country.

Dry maize was selling at an average price of Ksh. 3700 across the selected markets, green maize at Ksh. 2670, Canadian beans were selling at Ksh. 8700, Rosecoco beans at Ksh. 8800 and the Mwitemania variety was selling at an average price of Ksh. 8029.

Dry Maize prices registered a slight reduction in July at an average price of Ksh. 3000 across the selected markets compared to the Ksh. 3400 in June. The highest prices were observed in Kisumu at Ksh. 4680 and the lowest prices recorded in Eldoret at Ksh. 3200 per 90kg bag.
Green Maize experienced a slight decrease in July prices at an average of Ksh 2670 compared to 2700 in June. The highest prices were observed in Kisumu at Ksh. 3400 and the lowest prices recorded in Nakuru at Ksh. 2000 per 110kg bag.

Canadian Beans variety was selling at an average price of Ksh. 8700 up from Ksh. 8500 in June, with the highest prices observed in Kisumu at Ksh. 9700 and the lowest prices recorded in Nakuru at Ksh. 7400. A notable increase in prices was observed.
**Rosecoco Beans** variety was selling at an average price of Ksh. 8880 up from Ksh. 8200 in June, with the highest prices observed in Kisumu at Ksh. 9700 and the lowest prices recorded in Nairobi at Ksh. 7500. A notable decrease in prices was observed across the selected markets.

**Mwitemania Beans** variety was selling at an average price of Ksh 8000 up from Ksh. 7570 in June, with the highest prices observed in Mombasa at Ksh. 9600 and the lowest prices recorded in Nakuru at Ksh. 5900. A notable increase in prices was observed across the selected markets.
Wheat was selling at an average price of Ksh. 4400 down from Ksh. 4500 in June with the highest prices observed in Malindi at Ksh. 6300 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
The normalized difference vegetation index (NDVI) is a measurement of plant health based on how a plant reflects light (usually sunlight) at specific frequencies.

**Acronyms**

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