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PRESS RELEASE

THE OUTLOOK FOR THE 2017 "LONG RAINS" (MARCH-APRIL-MAY) 2017 SEASON; REVIEW OF WEATHER DURING THE OCTOBER-DECEMBER 2016 "SHORT RAINS" SEASON AND JANUARY 2017

1. HIGHLIGHTS

1.1 Outlook for March-April-May 2017

Depressed rainfall is expected over most parts of the country, especially the Eastern sector, during March-May 2017 "Long-Rains" Season. However, rainfall over some few parts of Western Kenya is likely to be near-normal.

Most of the eastern sector of the country is likely to remain generally dry during the month of March. While the seasonal rainfall is expected to pick up in April and May in this sector, the two months are expected to receive depressed rainfall.

The seasonal rainfall onset is expected during the second to third week of March over most parts of western Kenya. The better part of the eastern sector, especially Northeastern Kenya is likely to experience the onset during the first to second week of April.

1.2 Review of the rainfall conditions in October-November-December 2016 & January 2017

Highly depressed rainfall was recorded over most parts of the country during October-November-December 2016 "Short-Rains" season. The depressed rainfall led to severe impacts associated with a severe drought in various parts of the country. Nakuru, Jomo Kenyatta International Airport (JKIA), Moyale and Laikipia Airbase were the only meteorological stations in the entire country that experienced near-normal rainfall (between 75 and 125 percent of their seasonal Long-Term Means (LTMs)).

January 2017 period was generally sunny and dry over most parts of the country. However, several parts of Western, Central Rift Valley and Central Highlands including Nairobi recorded substantial amounts of rainfall within a short spell towards the end of the month.

2. FORECAST FOR MARCH-APRIL-MAY (MAM) 2017 "LONG-RAINS" SEASON

March to May constitutes a major rainfall season in most parts of Kenya as well as much of equatorial Eastern Africa. ***Figure 2*** depicts the mean (average) March-April-May seasonal rainfall. The figure shows that the highest rainfall amounts of over 300mm are recorded over Western parts and Central highlands as well as the Coastal strip and parts of northern Kenya (Marsabit, Moyale).

This forecast for March-April-May (MAM) 2017 "Long-Rains" is based on the prevailing and the expected evolution of Sea Surface Temperature Anomalies (SSTAs) over the Pacific, Indian and Atlantic Oceans as well as other Synoptic, Mesoscale and local factors that affect the climate of Kenya. These factors were assessed using various tools including ocean-atmosphere models, statistical models, satellite derived information and expert interpretation. The Indian Ocean Dipole (IOD), that is currently neutral, was also considered. This configuration in the Indian Ocean is still not favorable for good seasonal rainfall in the country especially over the eastern sector.

The predicted Onsets, Cessation and distribution of rainfall were derived from statistical analysis of past years, which exhibited similar characteristics to the current year.

The forecast indicates that much of the country and especially most of the eastern sector is likely to experience generally depressed rainfall. However, several parts of Western Kenya are likely to experience near-normal rainfall (i.e. average rainfall). The specific outlook for March to May 2017 "Long-Rains" Season (depicted in **Figure 3)** is as follows:

i. ***Western Counties*** **(**Busia, Vihiga, Kakamega, Bungoma and Mt. Elgon.); ***Nyanza Counties*** ***(***Kisumu, Siaya, Migori, Kisii, Nyamira, Homa Bay, etc**);** **and** ***Some counties in central and Northern Rift Valley*** (Trans Nzoia, Uasin Gishu, Kericho, Baringo, Bomet, Nandi, Elgeyo Marakwet, Turkana, West Pokot, etc) are likely to receive near-normal (average) rainfall.

ii. ***Counties in the central and Southern Rift Valley*** (Samburu, Laikipia, Nakuru, Narok, Kajiado, etc); ***Central Counties*** **(**Nyandarua, Nyeri, Kiambu, Murang'a, Kirinyaga, etc.**);** ***Counties in Eastern Region*** (Embu, Tharaka, Meru etc.); ***Nairobi County*** **(**Westlands, Embakasi, Kasarani, Dagoretti, etc); ***Northeastern Region*** (Mandera, Garissa, Wajir, etc) and ***Counties in Coastal Region*** (Mombasa, Kwale, Kilifi, Lamu, Tana River, Taita/Taveta); are likely to receive near normal rainfall with a tendency to below normal (i.e. generally depressed rainfall).

3. EXPECTED SEASONAL RAINFALL DISTRIBUTION

The distribution of March to May 2017 seasonal rainfall, both in time and space, is expected to be generally poor over most parts of the country. This will be more so over the eastern sector and in particular the Arid and Semi-Arid Lands (ASALs).

- Highly depressed rainfall is expected over most parts of the country during the month of March 2017. Indeed, sunny and dry weather conditions will be dominant over Northeastern and the Coastal regions during the month. A pick up in rainfall is, however, likely to occur over western Kenya during the month.
- In April, near-normal rainfall is expected over the western region. The rest of the country, especially the Northwestern, Northeastern and Southeastern

counties are expected to receive depressed rainfall that will be poorly distributed in time and space.

- Most parts of the country including the Coastal Strip are likely to experience depressed rainfall in May.

4. EXPECTED ONSET AND CESSATION DATES

	Region	Onset Dates	Cessation Dates
1	Counties in the Lake Basin and in Highlands West of the Rift Valley	2nd to 3rd week of March 2017	Rainfall will continue into June 2017
2	Southern parts of the Rift Valley (Narok, Kajiado etc); Central highlands including Nairobi area	3rd to 4th week of March 2017	3rd to 4th week of May 2017.
3	Central Rift Valley (Nakuru etc)	3rd to 4th week of March 2017	Rainfall will continue into June 2017
4	South eastern Counties	3rd to 4th week of March 2017	2nd to 3rd week of May 2017.
5	Southern Coastal Strip	4th week of March to 1st week of April 2017	Continues into June 2017
6	Northern Coastal Strip	1st to 2nd week of April 2017	Continues into June 2017
7	North-western Counties	2nd to 3rd week of March 2017	2nd to 3rd week of May 2017
8	Northern and North-eastern Counties (Wajir, Garissa, Mandera, Marsabit)	1st to 2nd week April 2017. Generally dry during the month of March	2nd to 3rd week May 2017.

5. POTENTIAL IMPACTS

5.1 Agriculture, Food Security and Livestock Sectors

In the agricultural counties of Western Kenya and Nyanza where near normal rainfall performance is expected, and also the central Rift Valley and central Highlands where near normal to below-normal rainfall is expected, the farming communities should take advantage of the expected rains and maximize crop yield through appropriate land-use management. Farmers are advised to liaise with the State Department of Agriculture for advice on the appropriate seeds to be used. The expected poor temporal distribution of the seasonal rainfall is, however, likely to negatively impact most agricultural areas.

In other agricultural counties like the Southeastern Kenya where the rainfall is expected to be highly depressed, farmers are also advised to liaise with the State Department of Agriculture to get advice on appropriate crops that are drought resistant in order to make the best use of the anticipated poorly distributed and depressed rainfall by planting.

Food security is expected to deteriorate over most parts of the country and more so the northern areas of Kenya.

The poor rainfall performance expected over the Arid and Semi-arid Lands (ASALs) will continue to impact negatively on the livestock sector.

5.2 Disaster Management Sector

In the Arid and Semi-Arid Lands (ASALs), problems related to water scarcity and lack of pastures for livestock is expected to continue due to the expected highly depressed rainfall during MAM 2017. Human-wildlife and inter-community conflicts over the limited resources are likely to be on the increase in these areas. The laid down contingency plans and strategies should therefore be sustained and enhanced to avert such incidences.

Lightning strikes may still occur in western Kenya especially within Kisii and Kakamega counties. Isolated cases of flooding in places like Budalang'i and Kano areas as well as landslides/mudslides in susceptible areas of Western, central and Rift Valley are also likely to occur. The National Disaster Operations Centre is, therefore, advised to be on standby in order to ensure mitigation of any negative impacts that may arise.

5.3 Energy Sector

The Turkwel and Sondu Miriu catchment areas are expected to experience near-normal rainfall during the coming season (March-May). It is, therefore, expected that the level of water in the hydroelectric power generation dams will gradually improve. A slight improvement in the water levels is also expected in the Seven Forks hydroelectric power generation dams due to the forecasted average to below-average rainfall in the Tana River catchment areas.

5.4 Transport and Public Safety

Flash floods may still occur in Western Kenya and some parts of Central Rift Valley and Central Highlands despite the expected average to below-average rainfall in some of these areas. This may lead to transport problems, especially in areas where the roads become impassable when it rains. Slippery roads and poor visibility during rainstorms may also pose dangers to motorists and pedestrians, especially along the Kikuyu-Kinungi stretch. All should, therefore, take utmost care during the rainy period to minimize accidents that would result from such weather conditions.

5.5 Water Resources Management Sector

Water resources for drinking, sanitation and industrial use are expected to deteriorate over most parts of the country due to the expected depressed rainfall. This will be more so in Northeastern, Northwestern and Southeastern Kenya. The currently available water should therefore be well managed to cater for the animal and human population needs. Rain water harvesting should also be encouraged to boost water availability in homes.

5.6 Health Sector

Diseases like cholera may emerge in areas expected to receive depressed rainfall. The current problem of malnutrition may be on increase in the same areas. Health authorities should, therefore, equip hospitals with necessary drugs to be able to deal with such situations as they arise.

Conditions that favor Malaria outbreak in the highlands of western Kenya may occur during the season. Health authorities will work with the Department to assess the risks on a monthly basis.

5.7 Environment

In areas expected to have good rainfall performance, the Ministry of Environment and Natural Resources should encourage residents to put in place soil conservation measures to minimize environmental degradation caused by soil erosion. People should also be encouraged to plant more indigenous trees in order to increase forest cover.

6. WEATHER REVIEW

6.1 OCTOBER-NOVEMBER-DECEMBER (OND) 2016 "SHORT RAINS" SEASON

Rainfall Performance Classification

Rainfall as % of LTM / Range	Description
< 75%	Below Normal (Depressed) rainfall
75% and 125%	Near normal rainfall
> 125%	Above Normal (Enhanced) rainfall

The October-December 2016 "Short-Rains" seasonal rainfall analysis indicates that the performance was below normal over most parts of the country. This was more so in Northeastern, Northwestern, the Coastal strip, western areas and several parts of Central and Southeastern Kenya where a number of meteorological stations recorded less than 50% of their seasonal LTMs. Nakuru, JKIA, Moyale and Laikipia Airbase were the only meteorological stations that recorded rainfall above 75 percent of their respective LTMs. The stations recorded 86, 83, 77 and 76 percent of their seasonal LTMs respectively. The lowest seasonal percentages of just 2, 6 and 21 percent were recorded at Lodwar, Lamu and Mombasa stations respectively.

Figure 1a shows the October-November-December 2016 rainfall amounts recorded during the season (blue bars) compared with the LTMs (red bars). ***Figure 1b*** depicts the spatial distribution of the seasonal rainfall performance as a percentage of the LTMs.

The seasonal rainfall onset was significantly delayed over the better part of the country while the distribution, both in time and space, was also generally poor throughout the country.

The poor rainfall performance in the country was mainly driven by the prevailing cool Sea Surface Temperatures (SSTs) in the western Equatorial Indian Ocean adjacent to the East African Coast, coupled with warm SSTs in the eastern Equatorial Indian Ocean adjacent to Australia. This constituted a negative Indian Ocean Dipole (IOD) that is not favourable for significant rainfall in Kenya. La Nina conditions in the Eastern Equatorial Pacific Ocean were also present from July 2016 and this similarly contributed to the poor performance of the 2016 October-December "Short-Rains".

6.2 OBSERVED CONDITIONS DURING JANUARY

Sunny, dry and hot weather conditions prevailed over most parts of the country in January 2017. However, some areas in the Lake Victoria Basin, highlands west

of the Rift Valley, Central Rift Valley and central highlands including Nairobi received significant amounts of rainfall over a short spell towards the end of the month. Some of the notable heavy (> 20mm in 24hrs) to very heavy (> 50mm in 24 hrs) rainfall events were at Lunza rainfall station in Butere Sub County of Kakamega County with 96.5mm; Koromangucha in Kuria West Sub County in Migori County with 85.5mm; and Nyarombo in Suna West Sub County in Migori County of 40.0mm all on 29th January 2017 while Moi Airbase Station, recorded 38.6mm of rainfall on 31st January and Eldoret Airport recorded 37.7mm on 29th January. Several other stations recorded rainfall greater than 20mm/24hrs during the same period.

By the end of the month, Eldoret Airport station recorded the highest monthly rainfall total of 69.1mm as compared to its January LTM rainfall of 72.0mm. Eldoret Kapsoya, Kericho, Nyeri, Moi Airbase, Kisumu, Kakamega and Kisii recorded 44.3mm, 42.9mm, 39mm, 38.6mm, 37.6mm, 37.2mm and 35.5mm respectively. The rest of the stations recorded less than 30mm.

During the month the rain bearing Inter-Tropical Convergence Zone (ITCZ) was mainly situated in Tanzania leaving most parts of Kenya under sunny and dry weather conditions.

7. EXPERIENCED IMPACTS

The depressed rainfall during the OND 2016 season resulted into various negative impacts. Most parts of the country are already under severe drought that has necessitated the distribution relief food to avert loss of human lives. Other impacts include:

- Crop failure over most agricultural areas of the country such as the central highlands and southeastern Kenya.
- Lack of forage and pasture for the pastoralists in the pastoral areas of Northwestern and Northeastern Kenya. As a result, some animals have died due to lack of water and limited pasture.
- Significant reduction in water levels in the Seven-Folks and Turkwel hydroelectric power generation dams.
- Reduced food security in various parts of the country.
- A reduction in water resources for domestic use, drinking and sanitation in most parts of the country. Most counties in Northwestern and Northeastern Kenya have been relying on water that is trucked from boreholes and other available sources.
- Drying up of some rivers and streams even in the high rainfall areas

NB: This outlook should be used with 24 hour, 5-day, 7-day and monthly forecasts and regular updates issued by this Department.

Mr. Peter G. Ambenje
Ag. DIRECTOR OF METEOROLOGICAL SERVICES & PERMANENT REPRESENTATIVE OF KENYA WITH WMO

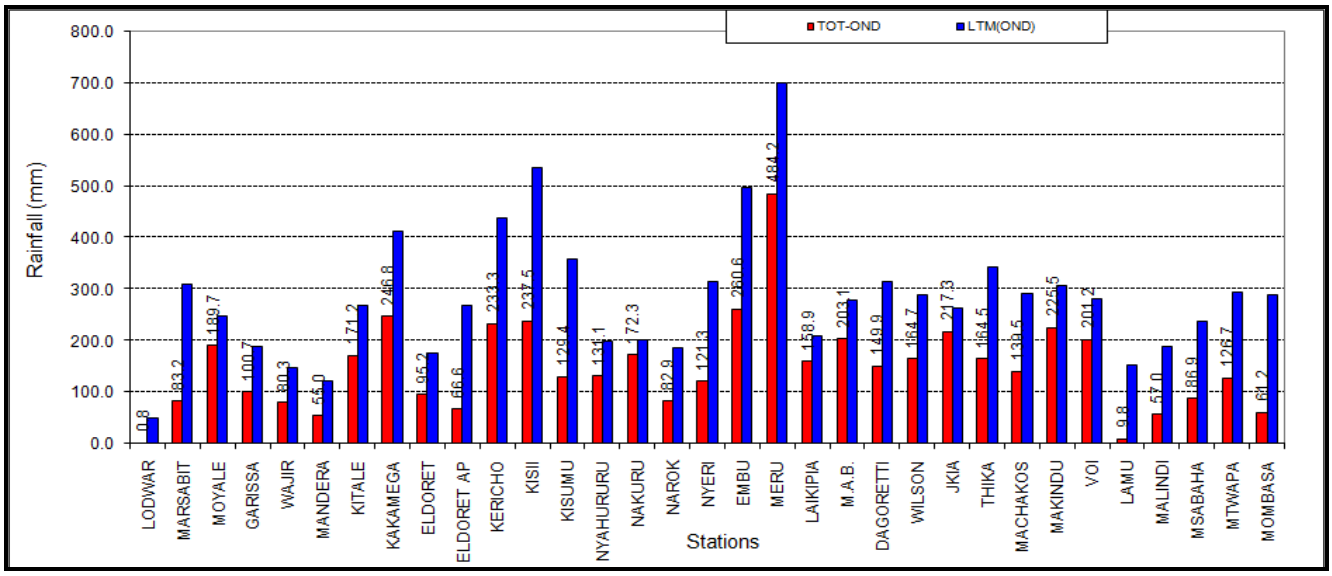

FIGURE 1A: OCTOBER - DECEMBER 2016 RAINFALL PERFORMANCE

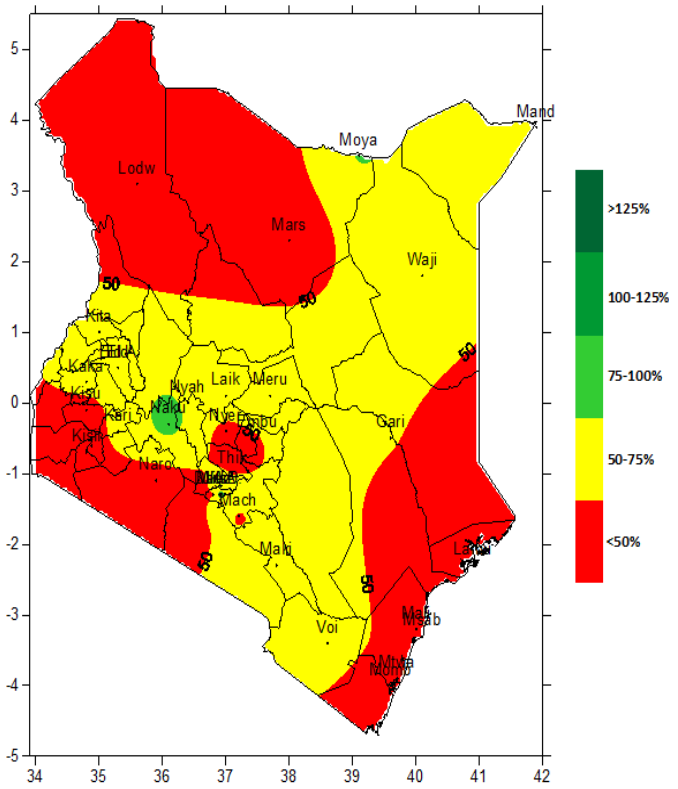

FIGURE 1B: OND 2016 RAINFALL PERFORMANCE IN % IN KENYA

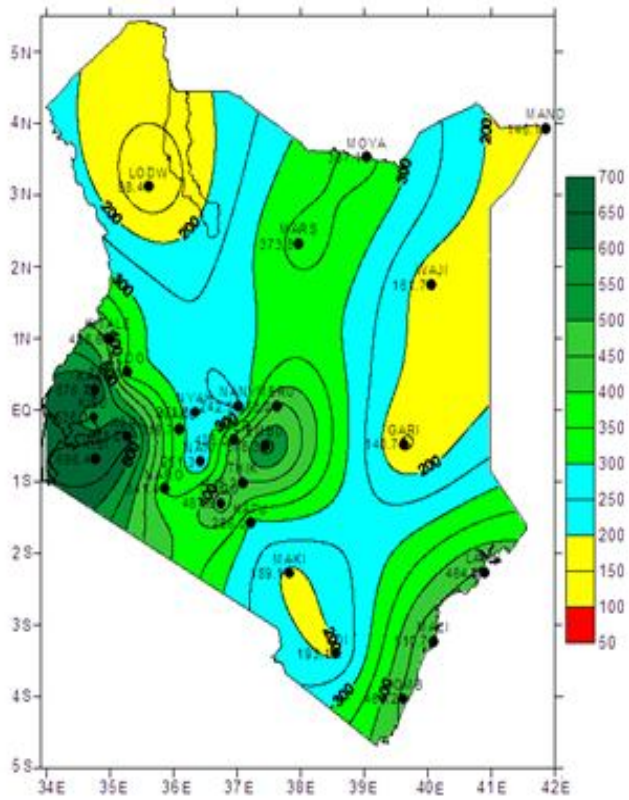

FIG. 2: MEAN MARCH-MAY SEASONAL RAINFALL

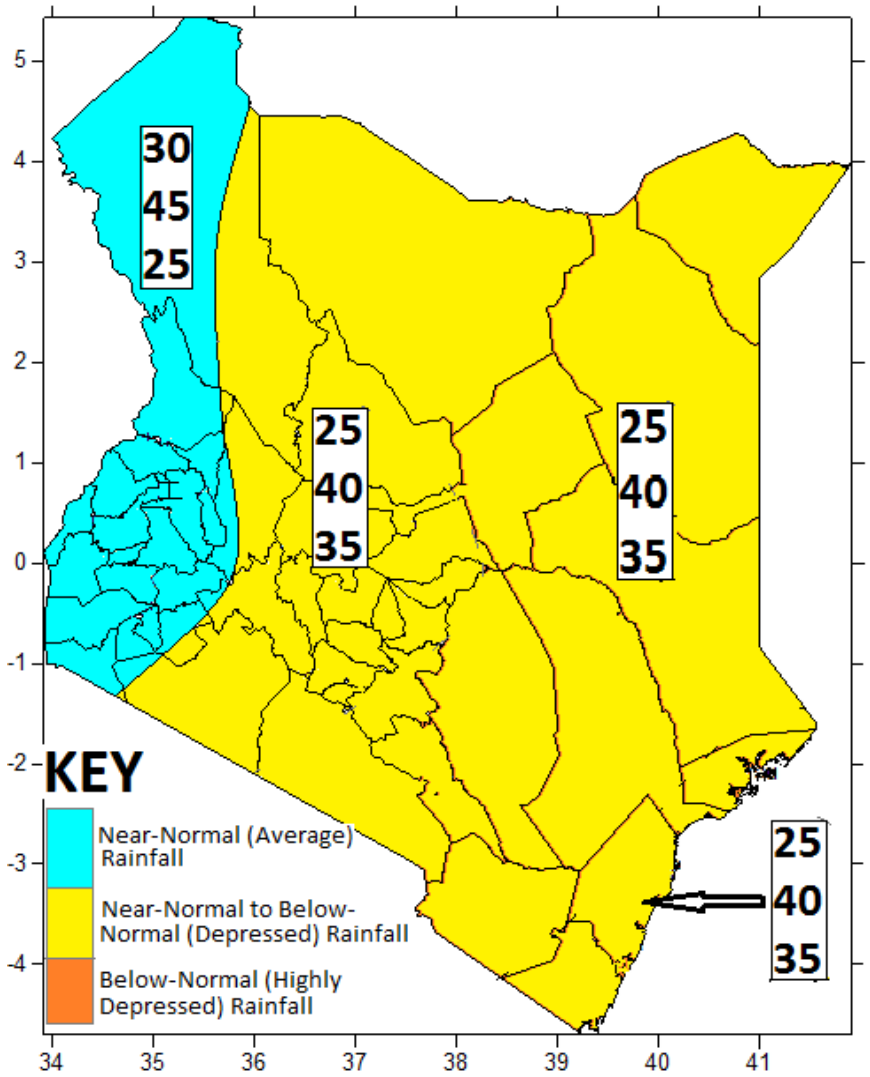

FIGURE 3: MARCH-APRIL-MAY 2017 RAINFALL OUTLOOK