REPUBLIC OF KENYA

MINISTRY OF ENVIRONMENT AND MINERAL RESOURCES

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PRESS RELEASE

REVIEW OF WEATHER DURING THE OCTOBER-DECEMBER 2009 "SHORT RAINS" SEASON, JANUARY-FEBRUARY 2010 AND THE OUTLOOK FOR THE MARCH-APRIL-MAY 2010 "LONG-RAINS" SEASON

1. HIGHLIGHTS

- *Near-normal rainfall is expected over most parts of the country during March-May 2010 "Long-Rains" Season.*
- *However, rainfall over the western and central districts is likely to be slightly enhanced while a few areas in the eastern sector are likely to experience slightly depressed rainfall.*
- *The highest rainfall amounts over most parts of the country are likely to be recorded during the peak month of April.*
- *Weak **El- Niño** conditions (warm sea surface temperatures (SSTs)) continue to be evident over the eastern and central equatorial Pacific Ocean. Warm SSTs were also observed over western Equatorial Indian Ocean in January and February 2010.*
- *Formation of Tropical Cyclones over the western Indian Ocean during the March to May period may interfere with the forecasted rainfall conditions over various parts of the country.*

2. WEATHER REVIEW

2.1 OCTOBER-NOVEMBER-DECEMBER (OND) 2009 "SHORT RAINS" SEASON

The October-December 2009 "Short-Rains" Season coincided with a weak El-Niño (abnormally warm sea surface temperatures) conditions that prevailed over the equatorial eastern Pacific Ocean. As a consequence, most parts of the country experienced fairly enhanced rainfall amounts but the distribution both in space and time was generally poor over some parts of the country. Statistically, rainfall amounts above 125% of the Long-Term Mean (LTM) are considered to be within enhanced (above normal) rainfall category while those between 75% and 125% of the LTM are considered to be within the near-normal rainfall category. Amounts below 75% of the LTM are within below normal rainfall category.

During the October – December 2009 Season, locations that experienced highly enhanced rainfall included Lamu, Malindi, Msabaha and Mtwapa along the Coastal strip; Lodwar, Kitale and Eldoret in the Northern parts of Rift Valley Province (North Rift); Mandera and Wajir in Northeastern Province; Nakuru in central Rift Valley and Nyahururu in Central Province. All theses stations recorded above 150 percent of their LTMs rainfall. Other stations that recorded above normal rainfall (above 125%) include Kericho, Garissa and Nyeri. Machakos and Makindu in Southeastern Kenya were the only stations in the country that recorded below normal (less than 75%) rainfall. The stations recorded 72% and 71% of their LTMs respectively.

In general, by the end of December 2009, twenty-four (24) out of the thirty-three (33) stations used for monitoring daily rainfall had exceeded their respective LTMs for the OND "Short-Rains" Season, and only two (2) stations that recorded less than 75%. The overall rainfall performance for OND 2009 "Short Rains" Season is depicted in **Figure 1**.

2.2 OBSERVED CONDITIONS DURING JANUARY-FEBRUARY 2010

Most parts of Western highlands, Central Rift Valley, Central highlands including Nairobi and a few areas in the Southeastern lowlands continued to record substantial amounts of rainfall in January and February 2010. However, the Northeastern and Northwestern Kenya as well as the entire Coastal strip remained generally dry throughout the period. During the same period, the central districts experienced occasional cloudy conditions that were similar to those normally experienced during the June-July period.

In January, the rainfall was mainly concentrated in the first ten days. As at 31st January, Narok station in the central Rift Valley had recorded the highest monthly rainfall total of 142.6mm as compared to its January long-term mean (LTM) rainfall of 86.3mm. Thika, Meru, and Moi Airbase stations recorded 138.3, 115.0 and 105.8mm as compared to their LTMs of 37.8, 59.5 and 42.7mm, respectively**.**

In February, the rainfall occurred during the first and the third week. As at 23rd February, Nyahururu station had recorded the highest monthly rainfall total of 132.1mm as compared to its February long-term mean (LTM) rainfall of 31.8mm. Kakamega and Kericho stations recorded 130.3 and 119.0mm as compared to their LTMs of 109.4 and 98.6mm, respectively**.**

3 FORECAST FOR MARCH-APRIL-MAY 2010 "LONG-RAINS" SEASON

March to May constitutes an important rainfall season over Kenya and much of East Africa in general. ***Figure 2*** depicts the mean (normal) March-April-May seasonal rainfall. The figure shows that, on average during this season, most areas in Western, Nyanza, Central and Nairobi Provinces receive normal (average) rainfall ranging from 400 to 680mm; south Rift receives average rainfall ranging from 250mm to 350mm while on average the Central Rift receives rainfall in the range of 180mm to 250mm; North Rift receives rainfall in the range 90mm to 220mm; Northeastern Province receives mean rainfall in the range 140 to 250mm; Eastern Province normally receives rainfall ranging from 190mm to 390mm while the Coastal Strip receives mean rainfall in the range 300mm to 520mm.

This forecast for March to May 2010 is based on the prevailing and expected 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 continuing weak El- Niño conditions over eastern and central equatorial Pacific Ocean and the warm Sea Surface Temperatures (SSTs) in the western Equatorial Indian Ocean were also taken into consideration.

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 March to May "Long Rains" Season of 2003 was used as the analogue for the forthcoming season.

The forecast indicates that most parts of Kenya are likely to experience near normal rainfall with a slight tendency towards above normal (i.e. enhanced rainfall). However, the Coastal areas and a few areas in Northeastern and Southeastern Kenya are likely to experience near normal rainfall with a slight tendency towards below normal (i.e. slightly depressed rainfall).

The specific outlook for March to May 2010 "Long-Rains" Season is depicted in **Figure 3** and indicates that:

i. ***Western Province*** **(**Busia, Butere, Mumias, Vihiga, Kakamega, Bungoma, etc.); ***Nyanza Province (K***isumu,Siaya, Migori, Kisii, Kuria, Nyamira, Borabu, Gucha,etc**);** ***Rift Valley Province*** (Turkana, Pokot, Trans Nzoia, Uasin Gishu, Kericho, Nandi, Nakuru, Narok, Kajiado, etc); ***Central Province*** **(**Nyandarua, Nyeri, Thika, Kiambu, Murang'a, Kirinyaga, Mwea, Maragua, etc.**);** ***Nairobi Province*** **(**Westlands, Embakasi, Kasarani, Dagoretti, etc); **Eastern Province (**Embu, Meru, Mwingi, Machakos, Makueni, Makindu, Marsabit, North Horr, Moyale etc); **Northeastern Province** (Mandera, Garissa, Ijara, Wajir, Elwalk) will receive near normal rainfall with a slight tendency towards above normal (i.e. slightly enhanced rainfall).

ii. *The entire* ***Coast Province*** (Malindi, Lamu, Kilifi, Voi, Mombasa, Tana River, Kwale, Msambweni, Kinango, Lungalunga etc); will receive near normal rainfall with a tendency towards below normal (i.e. slightly depressed rainfall).

4. Expected Distribution

The March to May 2010 "Long-Rains" are likely to exhibit poor distribution both in space and time in some parts of the country, especially the Arid and Semi-Arid Lands (ASAL).

- In northwestern Kenya, the rainfall performance is likely to be slightly enhanced throughout the three-month period.
- In the western highlands, Lake Basin, central Rift and central highlands including the Nairobi area, the performance is expected to be near-normal in March and slightly enhanced in April and May.
- The northeastern districts are likely to experience slightly enhanced rainfall in April but near-normal performance in March and May.
- The southeastern districts are expected to receive enhanced rainfall in April but near normal in March and May. However, the southern most areas of this region are likely to experience depressed rainfall both in April and May.
- The performance along the Coastal Strip is expected to be near normal in May but generally depressed in March and April.

5. Expected Onset and Cessation dates

	Region	Onset Dates	Cessation Dates
1	Districts in the Lake Basin and in Highlands West of the Rift Valley	The rains will be enhanced from 1st-2nd week of March 2010	Continues into June
2	Southern parts of the Rift Valley	The rains will be enhanced from 1st-2nd week of March 2010	2nd-3rd week of May 2010
3	Central Rift Valley	3rd-4th week of March 2010	Continues into June
4	Central highlands including Nairobi area	3rd-4th week of March 2010	2nd-3rd week of May 2010
5	South eastern Districts	3rd-4th week of March 2010	1st-2nd week of May 2010
6	Coastal Districts	4th week of March -1st week of April 2010	Continues into June 2010
7	North-eastern and North-western districts	4th week March -1st week April 2010	1st – 2nd week May 2010

The expected Onset and Cessation dates are also shown in **Figures 4a and 4b,** respectively.

6. Potential Impacts

Planning and preparedness for potential impacts must be undertaken in consultation with the sectors concerned.

6.1 Agriculture and Food Security Sector

In the agricultural areas of Western, Nyanza, Rift Valley, Eastern and Central Provinces where rainfall is expected to be near-normal with a tendency towards above-normal, the farming communities should take advantage and maximize crop yield through appropriate land-use management. It is advisable that farmers work closely with the Ministry of Agriculture on ways of taking advantage of the expected good rainfall.

In areas like the Coast Province where the rainfall is expected to be near-normal with a tendency towards below-normal, farmers are advised to liaise with the Ministry of Agriculture to get requisite advise for the best use of rains by planting appropriate crops.

6.2 Disaster Management Sector

Landslides/mudslides are likely to be experienced in areas expecting slightly enhanced rainfall over Western, Central and parts of Rift Valley Provinces. Lightning strikes may also be prevalent in western Kenya especially Gusii districts and districts in Kakamega. Budalang'i and Kano areas are also likely to experience some degree of flash flooding.

The National Disaster Operations Centre is, therefore, advised to take the necessary measures that would ensure mitigation of any negative impacts resulting from the forecast conditions.

6.3 Energy Sector

The Turkwel, Sondu Miriu and Tana River catchment areas are expected to experience near-normal rainfall with a slight tendency to above-normal during the coming season (March-May). It is, therefore, expected that the level of water in the hydroelectric power generation dams will improve significantly during the season.

6.4 Transport and Public Safety

Flash floods may still be experienced in some parts of Central, Western and Eastern Provinces from rainstorms. This may lead to transport problems, especially during rush hours and more so in areas where the roads become impassable when it rains. Slippery roads may also pose dangers to motorists and pedestrians. All should, therefore, take utmost care during the rainy period.

Light aircrafts are advised to take utmost care in the western routes and avoid flying through deep cumulus clouds, especially in the afternoon hours. Such clouds are associated with severe turbulence (updrafts and downdrafts and cross winds occasioned by strong convections) and lightning.

6.5 Water Resources Management Sector

Water resources for drinking, sanitation and industrial use are expected to be adequate in municipalities in most parts of the country. However, the available water should be well managed in case of any rainfall deficits. This should be more so in the marginal areas in order to cater for the animal and human population needs.

6.6 Local Authorities

Municipalities especially those located in regions expected to experience near-normal to above normal rainfall are advised to open up drainage systems early enough so as to avoid

water accumulation due to surface runoff and lead to flash flooding. The Municipalities are also encouraged to develop capacities that cater for an ever-increasing population.

6.7 Health Sector

Water borne diseases associated with poor sanitation as well as flooding may emerge in areas expected to receive enhanced rainfall. Health authorities are, therefore, expected to be on the look out and equip hospitals with necessary drugs to be able to deal with such situations as they arise. There is also need to be on the lookout for Highland Malaria in regions that are expected to receive enhanced rainfall.

6.8 Industry

In areas expecting slightly enhanced rainfall, some sections of the road network may be muddy and slippery. Vehicles may stall in the muddy sections. This scenario is likely to result in late delivery or non-delivery of raw materials and industrial products to the industries and distribution outlets to commodity markets respectively.

6.9 Environment

In areas expected to receive enhanced rainfall, the Ministry of Environment and Mineral Resources should encourage residents in these areas to put in place soil conservation measures to minimize environmental degradation. People should also be encouraged to plant more indigenous trees in order to increase forest cover.

NB: This outlook should be used with 24 hour forecasts and regular updates issued by this Department.

DR. JOSEPH R. MUKABANA, MBS
DIRECTOR OF METEOROLOGICAL SERVICES AND PERMANENT REPRESENTATIVE OF KENYA WITH WMO

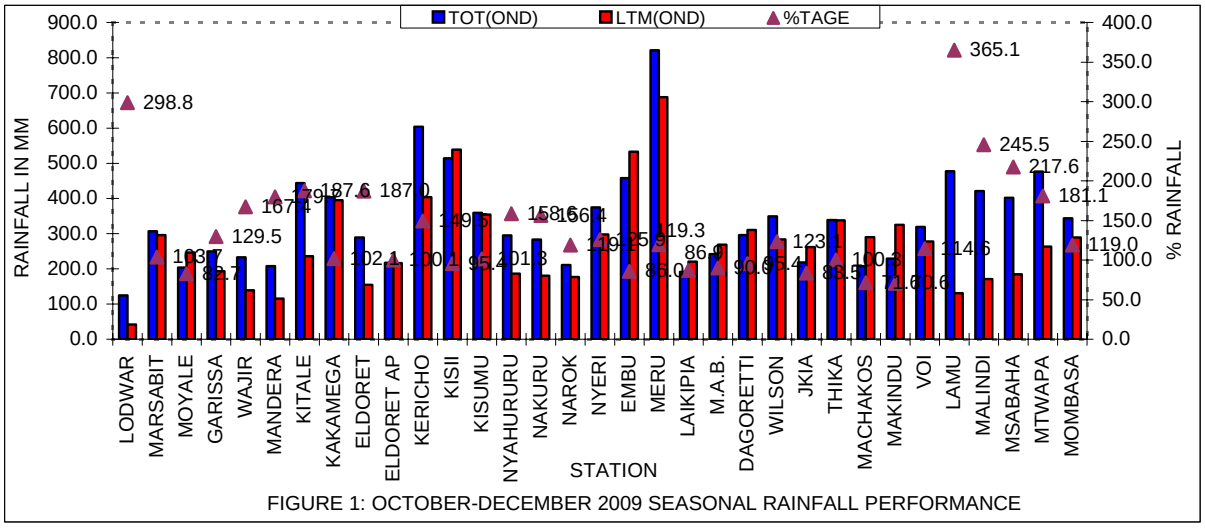

FIGURE 1: OCTOBER-DECEMBER 2009 SEASONAL RAINFALL PERFORMANCE

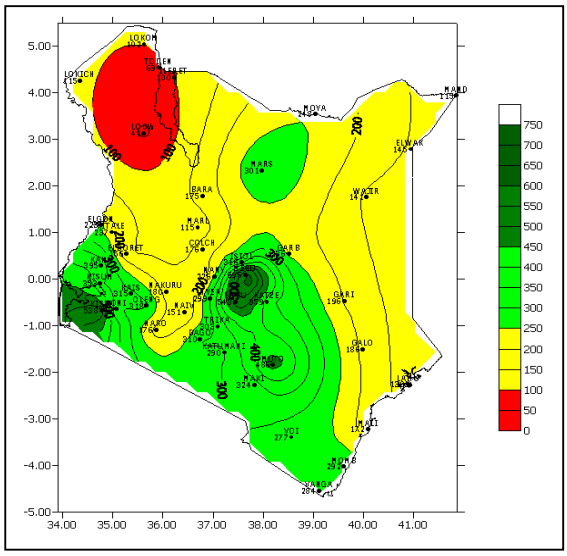

FIG. 2: MEAN MARCH-MAY SEASONAL RAINFALL

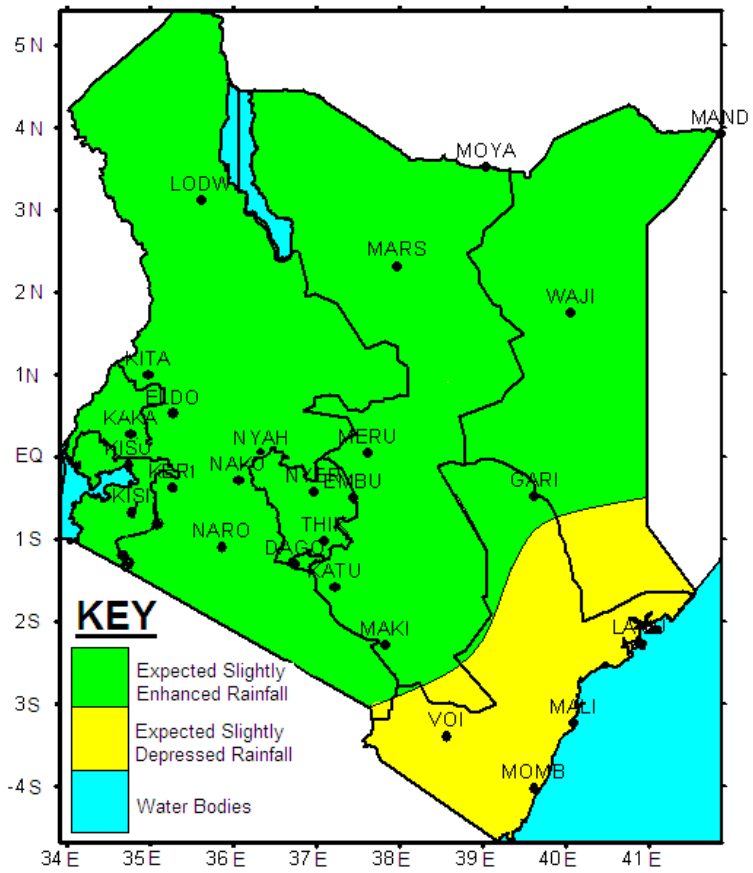

FIG. 3: MARCH-MAY 2010 RAINFALL FORECAST

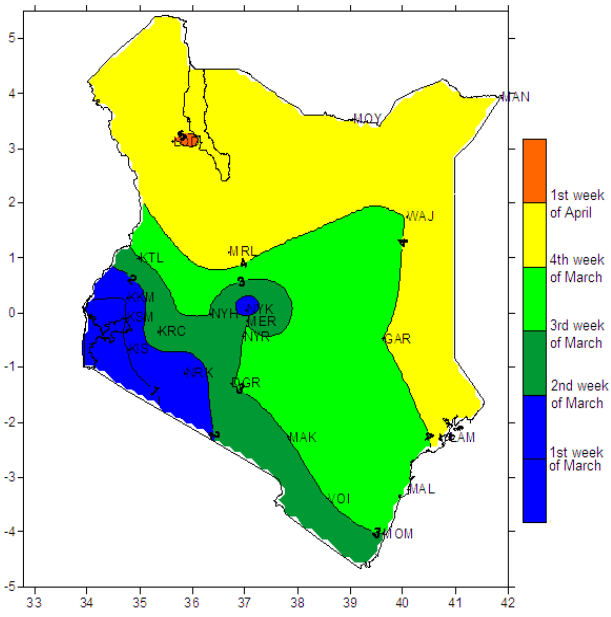

Figure 4a: MAM 2010 expected onset dates

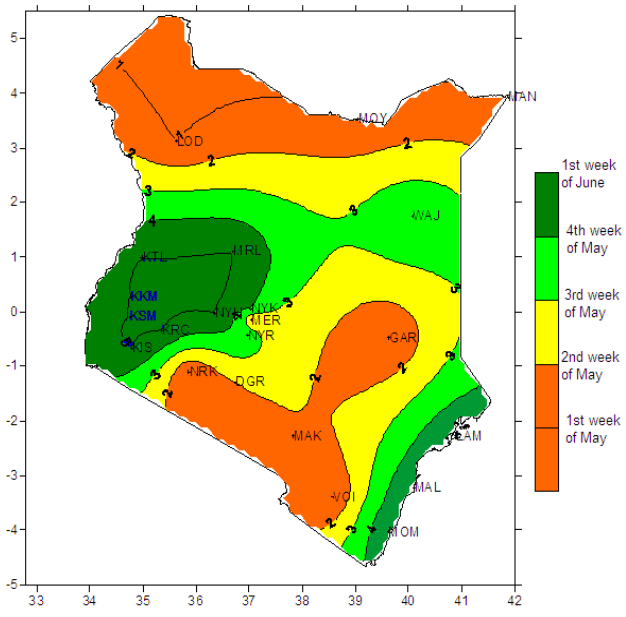

Figure 4b: MAM 2010 expected cessation dates