# REPUBLIC OF KENYA

**MINISTRY OF ENVIRONMENT AND MINERAL RESOURCES**

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## REVIEW OF "SHORT RAINS" (OCTOBER – DECEMBER) 2009 AND THE OUTLOOK FOR JANUARY 2010

### REVIEW OF "SHORT RAINS" (OCTOBER – DECEMBER) 2009

In October 2009, the rainfall Onset was timely over most parts of the country. Indeed, some areas experienced an early rainfall Onset that was characterized by storms accompanied by heavy rainfall. Such areas include the Coastal and Northeastern districts where heavy and continuous rainfall was recorded as early as the first to second week of the month. Most places in these regions recorded more than 200 percent of their Long-Term Means (LTMs) rainfall. Lamu Meteorological Station along the Coastal strip recorded more than 900 percent of its LTM. Meru, Embu and Nyeri Meteorological Stations in the central highlands also recorded significant amounts of rainfall that well exceeded their LTMs.

The western parts of the country experienced low rainfall amounts that was generally depressed and characterized by poor spatial and temporal distribution. The most depressed rainfall of below 50 percent was recorded at Kisumu and Kisii in the Lake Victoria Basin.

Several rainfall storms were recorded in Northeastern, Central highlands and the Coastal strip during the month. Mtwapa Meteorological Station recorded the highest daily rainfall amounting to 127.8mm recorded on 27th October. On 10th October, Meru Meteorological Station recorded 100.1mm while on 28th October, Lamu and Malindi Meteorological Stations recorded 99.2 and 96.8 mm respectively. Other rainfall storms recorded during the month include 90.6mm at Malindi Meteorological Station on 14th October, 81.3mm at Embu Meteorological Station on 15th October and 81.2mm at Mombasa Meteorological Station on 26th October. In Northeastern Kenya, Mandera Meteorological Station recorded the heaviest storm amounting to 58.7mm (on 13th October) while Garissa Meteorological Station recorded 54.0mm on 15th October.

The highest rainfall total of 457.2mm (218% of the LTM) was recorded at Meru Meteorological Station while Lamu, Malindi, Msabaha, Mtwapa, Mombasa, Embu, Nyeri, Marsabit and Mandera Meteorological Stations recorded 420.47 (931%), 390.5 (586%), 334.3 (403%), 306.9 (308%), 302.6 (280%), 239.0 (129%), 205.2 (201%), 190.6 (192%) and 171.3 mm (319%) respectively. The rest of the stations recorded less than 150mm.

The rainfall amounts recorded during the month at Lamu, Malindi, Msabaha, Mandera, Mtwapa, Wajir and Mombasa Meteorological Stations were well above the OND seasonal LTMs. The stations recorded 322, 228, 181, 148, 117, 110 and 105 percent of their seasonal

LTMs respectively.

The wet conditions experienced in October 2009 over various parts of the country persisted to the first few days at the beginning of November 2009. The rainfall performance in November 2009 was poor and erratic over most parts of the country. An unprecedented dry spell of about 15 days set in and engulfed most parts of the country from 6th up to 21th November 2009. This was attributed to a weakening of the Southern Hemisphere high-pressure systems and persistent cyclones and depressions (low pressure cells) over the Southwest Indian Ocean. This resulted in a shift of the rainfall generating frontal system, the Inter-Tropical Convergence Zone (ITCZ), south of the country.

A slight pick up in rainfall was observed over the western parts of the country, central highlands, Nairobi area and the southeastern lowlands from 16th to 19th November 2009 and then 28th to end of the month.

The month of December 2009 was mainly dry up to the 23rd when most parts of the country started experiencing heavy rainfall. A slight weakening of pressures in the northern hemisphere coupled with a filling up of the cyclones and Depressions in the Southwest Indian Ocean resulted in a northwards shift of the ITCZ. The heavy rains were accompanied by stormy winds in Nairobi Area that resulted in loss of life and damage to property. Incidences of flooding were also reported from other parts of the country including parts of the Rift Valley and Nyanza Provinces. The heavy rainfall received towards the end of December compensated for the drier earlier part of the month and much of the country ended up receiving enhanced rainfall for the month. The coastal stations were, however, generally dry throughout the month.

By the end of December 2009, twenty (24) out of the thirty three (33) stations used for monitoring daily rainfall had exceeded their respective LTMs for the October to December "Short Rains" season, and only one (1) station had recorded less than 75% of its LTM for the "Short Rains" season. The overall rainfall performance for October-November-December (OND) or the "Short Rains" season of 2009 is depicted in Figure 1.

## FORECAST FOR JANUARY 2010

This forecast is based on the expected evolution of global Sea Surface Temperatures (SSTs) patterns and average performance of rainfall during previous years when the December-January SSTs behaved in a similar manner to the current trend. The current weak to moderate El Niño conditions in the Pacific Ocean have also been considered. The outlook for January 2010 indicates that some areas within the Lake Basin, Central Rift Valley, Western highlands and central highlands, will experience moderately heavy rainfall. Elsewhere in the country, generally sunny and dry conditions are expected to prevail.

The specific outlooks for individual areas are as follows:

**The Lake Basin (Kisii, Kisumu, Busia), parts of Highlands west of the Rift Valley (Kericho, Kakamega, Eldoret, Kitale) and Central Rift Valley (Narok), the Central Highlands including Nairobi (Nyeri, Embu, Meru, Nyahururu, Murang'a, Dagoretti, Wilson, JKIA)** are expected to experience moderately heavy rainfall during the first half of the month.

**The North-western (Lodwar, Lokichoggio, Lokitaung), North-eastern Kenya (Moyale, Marsabit, Wajir, Mandera, Garissa), South-eastern (Makindu, Voi, Machakos) and the Coastal Strip (Mombasa, Malindi, Lamu, Tana River)** are expected to be mainly sunny and dry throughout the month. Light to moderate rainfall may occasionally occur over few places.

**This forecast should be used in conjunction with regular updates issued by this Department.**

Dr. Joseph R. Mukabana, MBS.
**DIRECTOR OF METEOROLOGICAL SERVICES AND PERMANENT REPRESENTATIVE OF KENYA WITH THE WORLD METEOROLOGICAL ORGANIZATION**

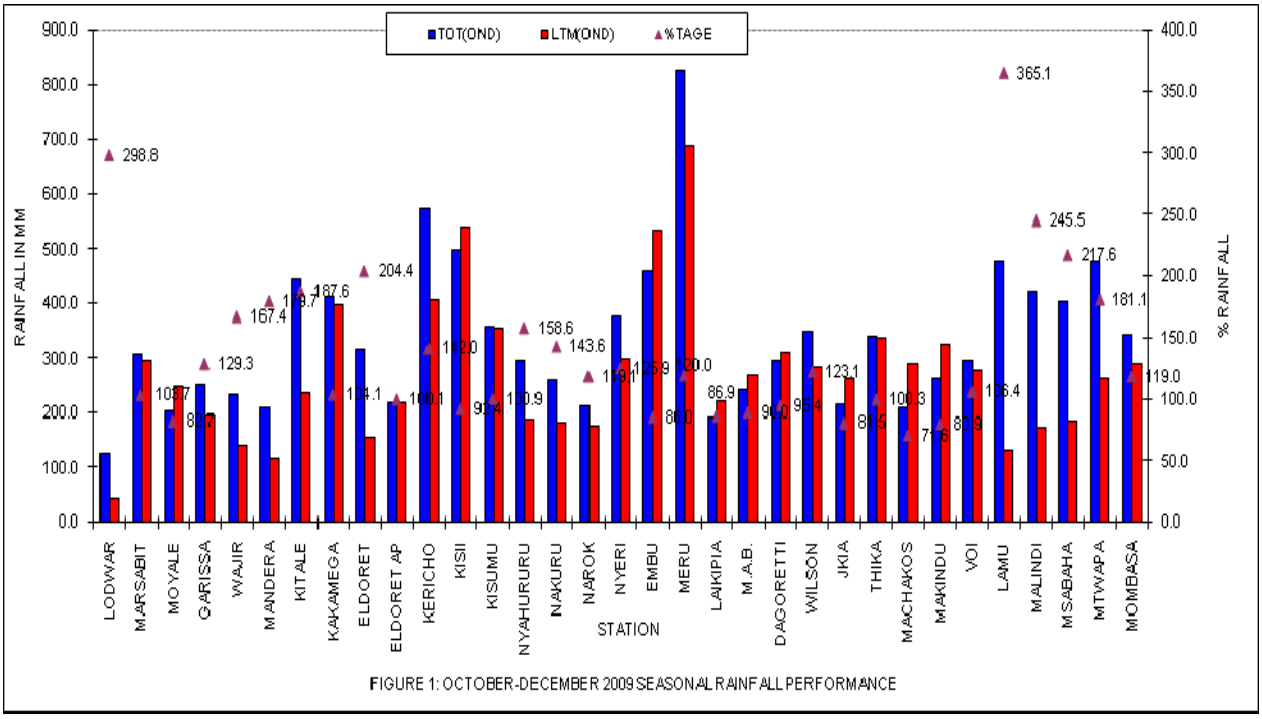

FIGURE 1: OCTOBER-DECEMBER 2009 SEASONAL RAINFALL PERFORMANCE

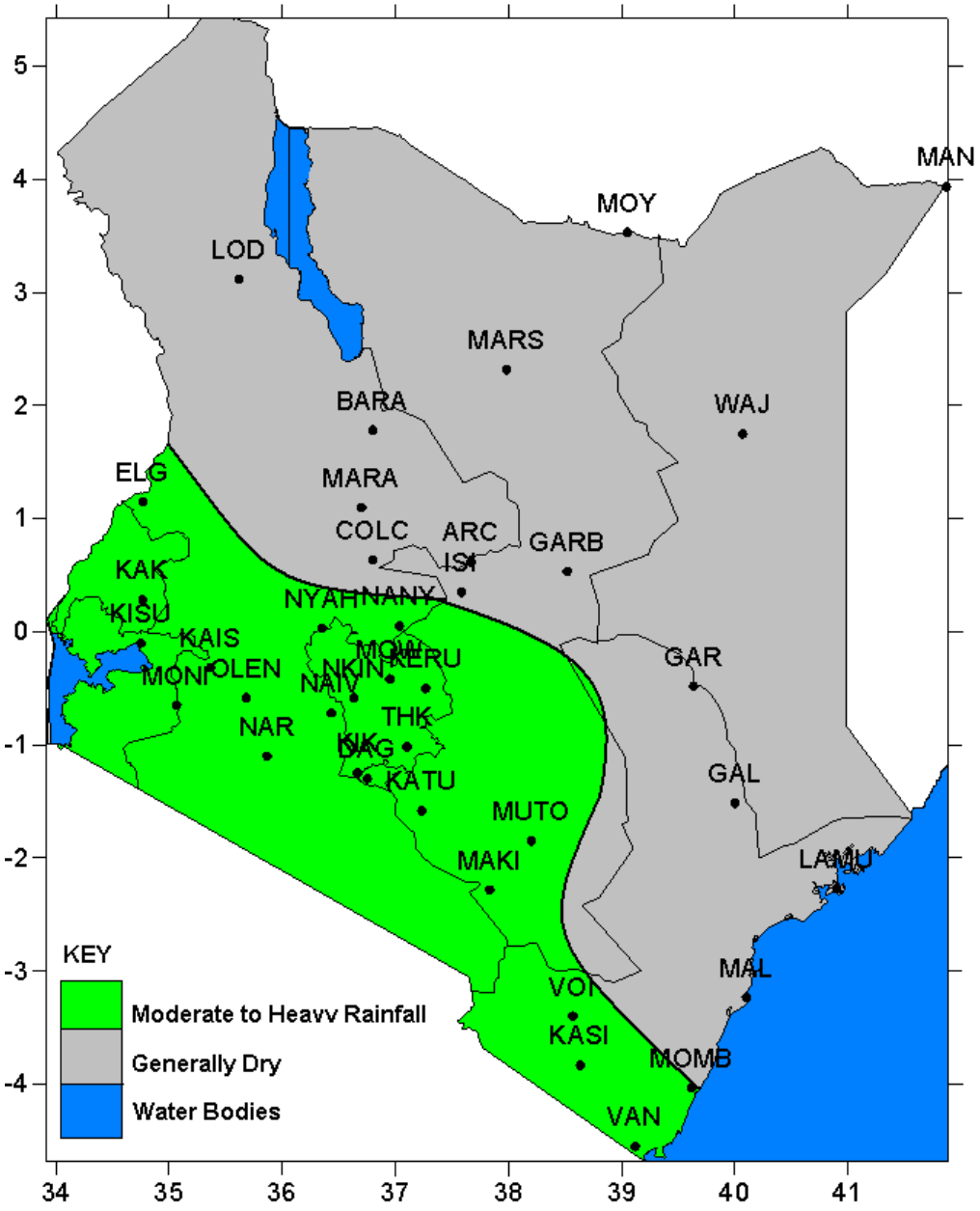


***Figure 2: Expected Rainfall Performance in January 2010***