Kenya Meteorological Department

County Director of Meteorological Services – Makueni County

Mob: 0795929926; kmdmakuenicounty@gmail.com; jngayai@yahoo.com

---

MAKUENI COUNTY OCTOBER – NOVEMBER – DECEMBER (OND – 2023) SEASONAL FORECAST.

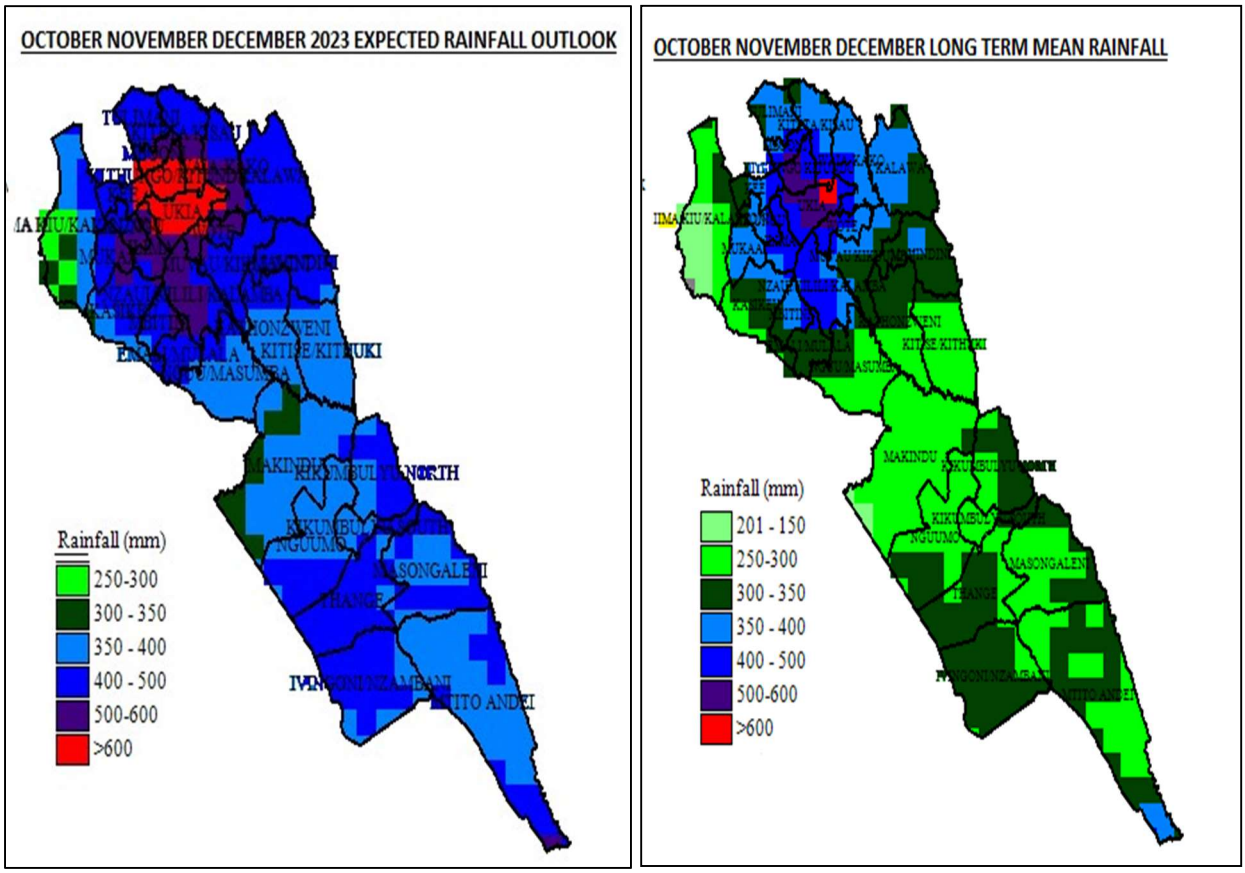
1. Highlights

The OND 2023 rainy season is expected to be above normal with an early onset (early October), late cessation (going into January 2024) and good distribution both in time and space.

The reasons for above normal rainfall and early onset are:
(a) higher than normal sea surface temperatures in the Equatorial Central Pacific Ocean (El-Nino conditions) and;
(b) higher than normal sea surface temperatures (SSTs) in the Western Indian Ocean adjacent to East Africa (Positive Indian Ocean Dipole (IOD)).

The distribution of rainfall in OND 2023 season is expected to be similar to that of 2006 and 1997. Annex 1 shows the bar charts (by Climatic zones) of weekly totals of rainfall for the two analogue years.

2. Spatial Map of Probable total Seasonal Rainfall.



3. OND 2023 Seasonal Forecasts by Ward/AEZ.

SNO	Sub county	Ward/ climatic zone	Seasonal Amount in mm		Probable onset dates	Probable Cessation dates
			Normal (Long term mean 1991-2020)	Forecast for OND 2023		
1	**Makueni**	Kitise / Kithuki	250-300	350-400	Between 15th - 28th October,2023	Between 1st –14th January, 2024
2		Kathonzweni	250-300	350-400		
3		Mavindini	300-350	400-500		
4		Nzaui / Kalamba	300-350	500-600		
5		Muvau / Kikumini	340-390	400-500		
6		Wote	400-450	500-600		
7		Mbitini	300-400	400-500		
8	**Kibwezi East**	Masongaleni	300-350	350-400		
9		Nzambani / Vingoni	300-350	400-500		

SNO	Sub county	Ward/ climatic zone	Seasonal Amount in mm		Probable onset dates	Probable Cessation dates
			Normal (Long term mean 1991-2020)	Forecast for OND 2023		
10		MtitoAndei	300-350	350-400		
11		Thange	300-350	400-500		
12	Kibwezi West	Makindu	250-300	350-400		
13		Mulala / Emali	300-350	400-500		
14		Nguu / Masimba	300-350	400-500		
15		Nguumo	300-350	400-500		
16		Kikumbulyu North	300-350	400-500		
17		Kikumbulyu South	300-350	400-500		
18	Kilome	Kasikeu	300-350	400-500		
19		Kiima/Kiu	350-400	350-400		
20		Mukaa	350-400	400-500		
21	Mbooni	Tulimani	350-400	500-600		
22		Mbooni	400-500	500-600		
23		Kako/Waia	350-400	500-600		
24		Kalawa	350-400	400-500		
25		Kisau/Kiteta	350-400	500-600		
26		Kithungo/Kitundu	400-500	>600		
27	Kaiti	Kilungu	500 – 600	>600	Between 15th - 28th October,2023	Between 1st –14th January, 2024
28		Ukia	500 - 600	>600		
29		Ilima	500 - 600	>600		
30		Kee	400 - 500	500 - 600		

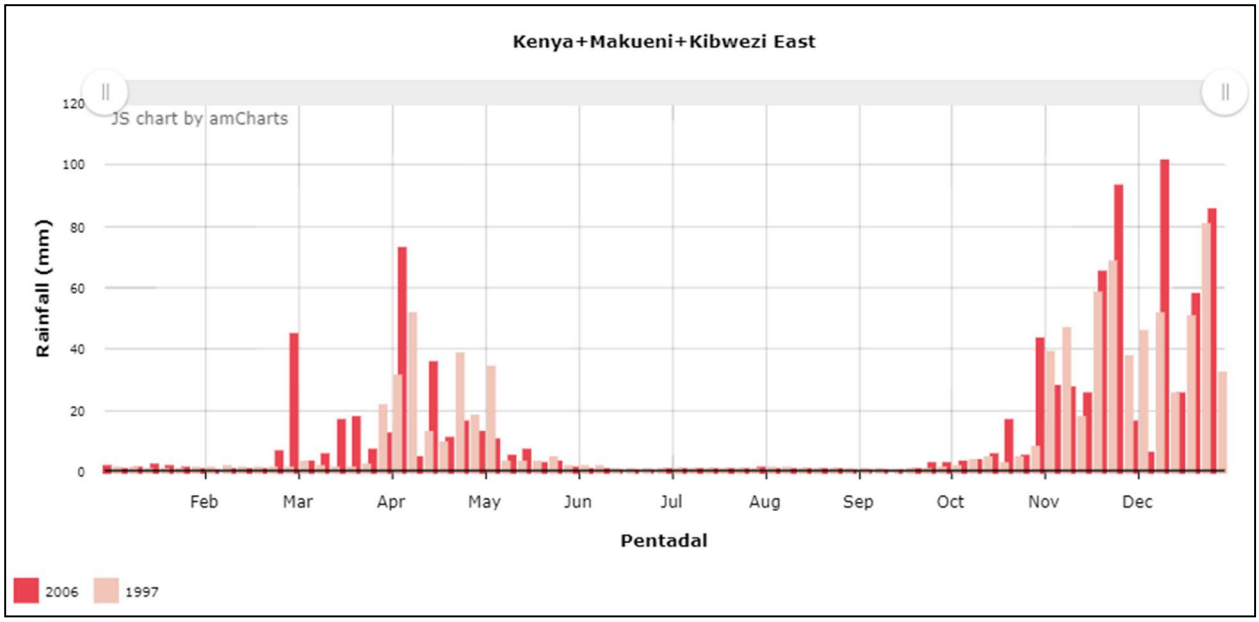
4. Recommendations.

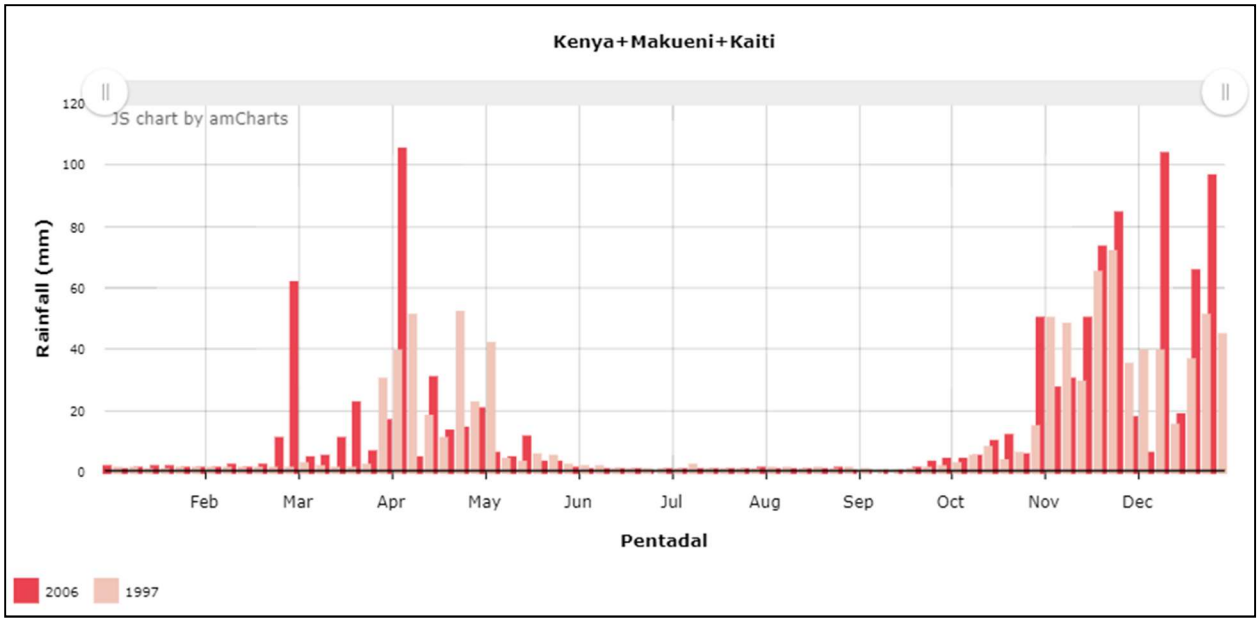
i) Choosing the right crops to plant:
- To minimize risks, choose the crops whose seasonal Crop Water requirement is within the lower limit value of the predicted range

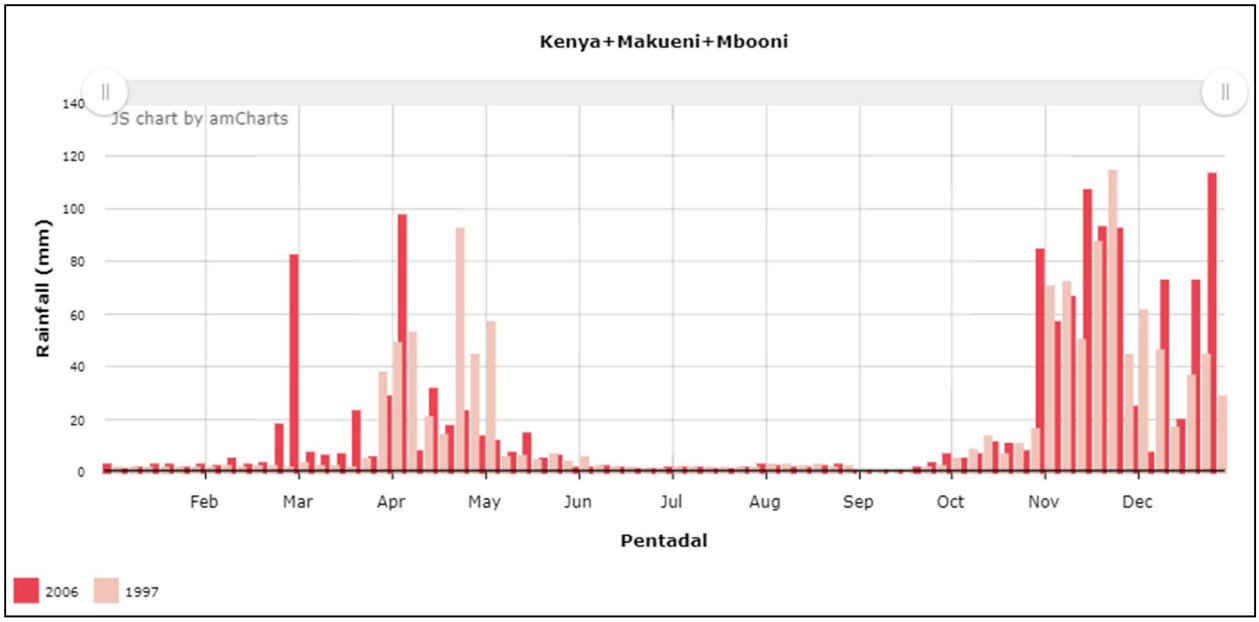
ii) Onset dates
- The onset dates predicted in this seasonal forecast should be used in conjunction with weekly weather updates which are more accurate.

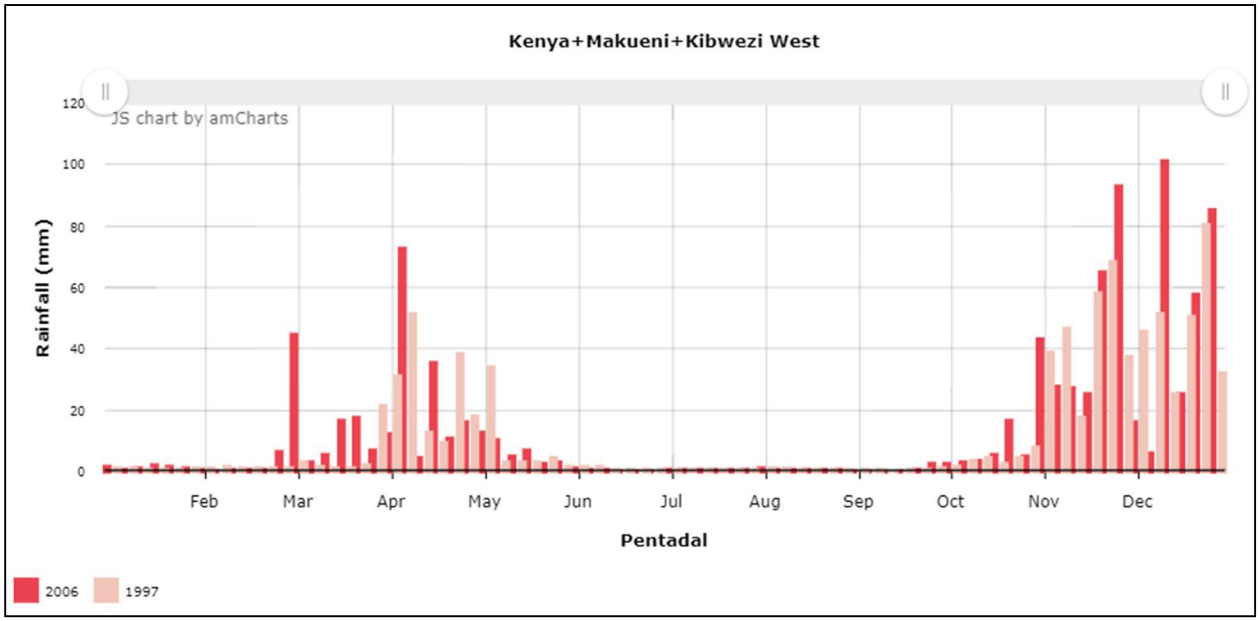
5. Annex 1: Distribution of OND rainfall in 1997 and 2006 (Analogue Years).

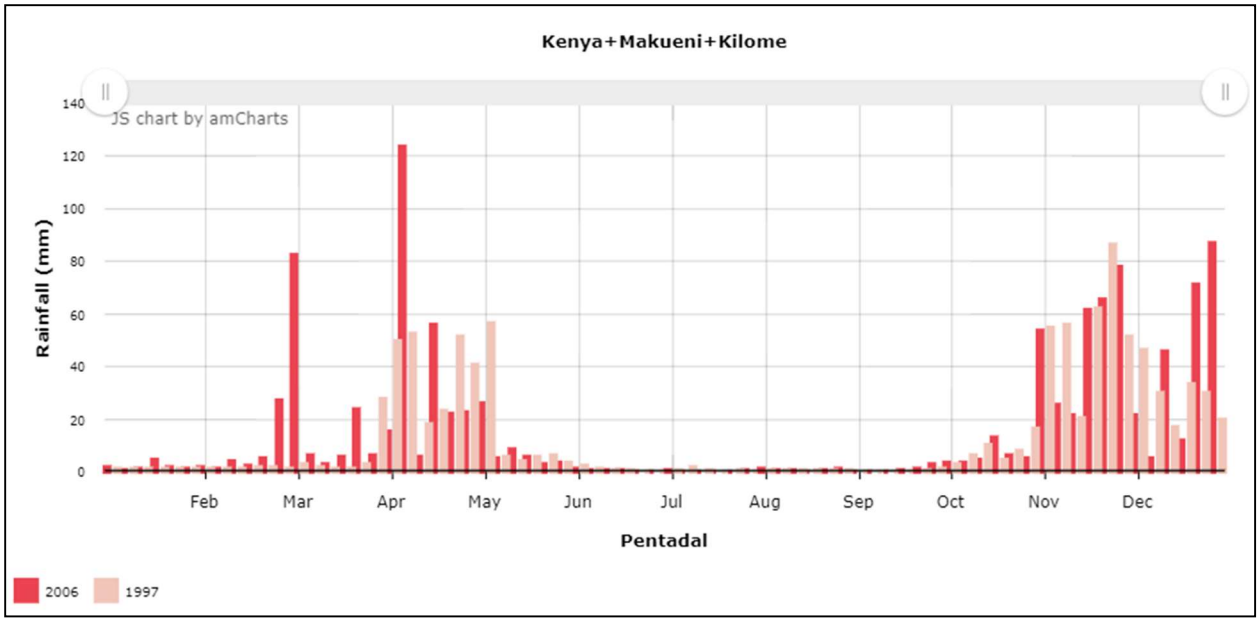
RAINFALL DISTRIBUTION PER SUB COUNTY FOR THE ANALOGUE YEARS.

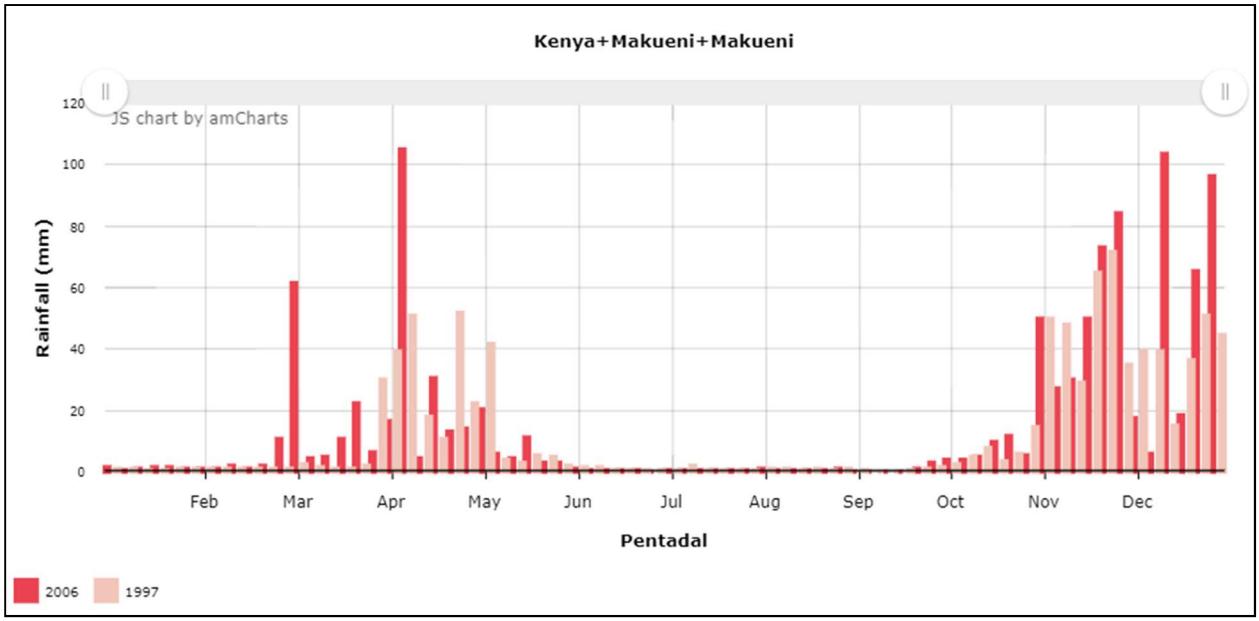

Kenya+Makueni+Kibwezi East
JS chart by amCharts
Rainfall (mm)
120
100
80
60
40
20
0
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Pentadal
2006
1997


Kenya+Makueni+Kaiti
JS chart by amCharts
Rainfall (mm)
120
100
80
60
40
20
0
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Pentadal
2006
1997

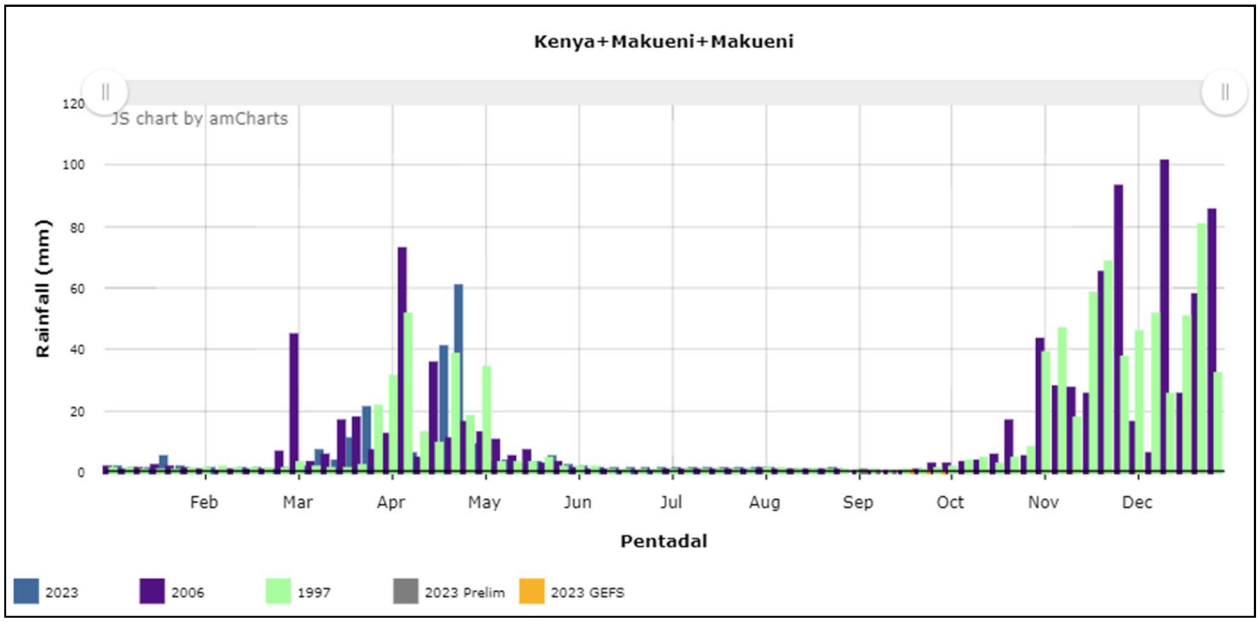

Kenya+Makueni+Mbooni
JS chart by amCharts
Rainfall (mm)
0
20
40
60
80
100
120
140
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Pentadal
2006
1997


Kenya+Makueni+Kibwezi West
JS chart by amCharts
Rainfall (mm)
0
20
40
60
80
100
120
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Pentadal
2006
1997

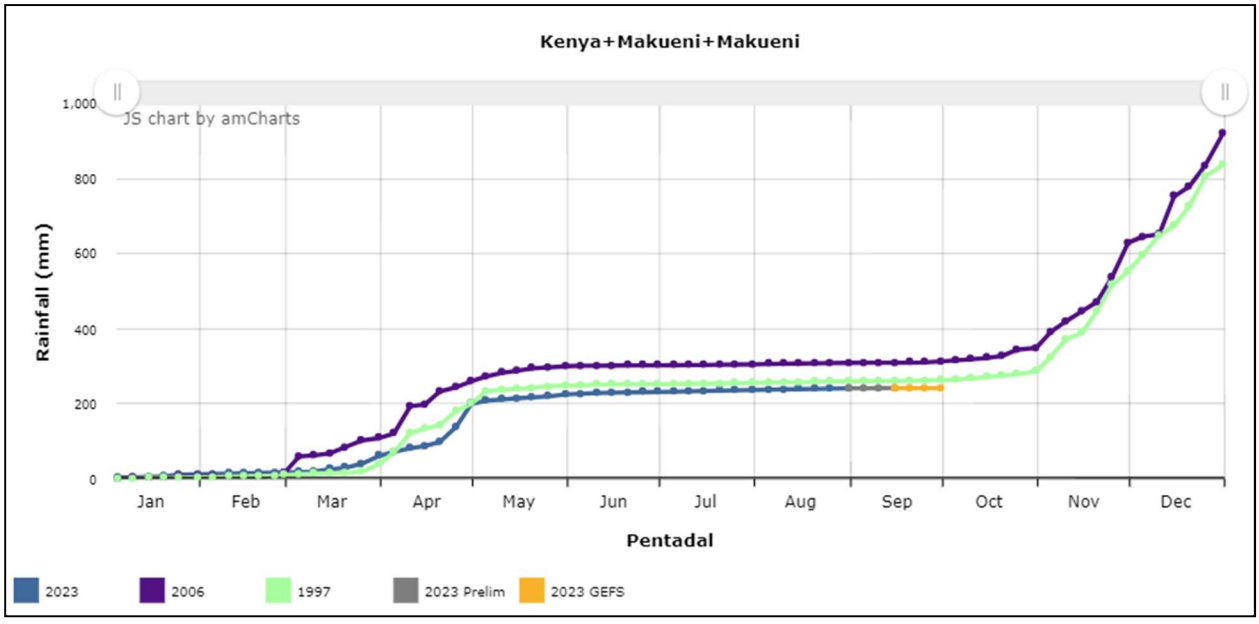

Kenya+Makueni+Kilome
JS chart by amCharts
Rainfall (mm)
140
120
100
80
60
40
20
0
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Pentadal
2006
1997


Kenya+Makueni+Makueni
JS chart by amCharts
Rainfall (mm)
120
100
80
60
40
20
0
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Pentadal
2006
1997

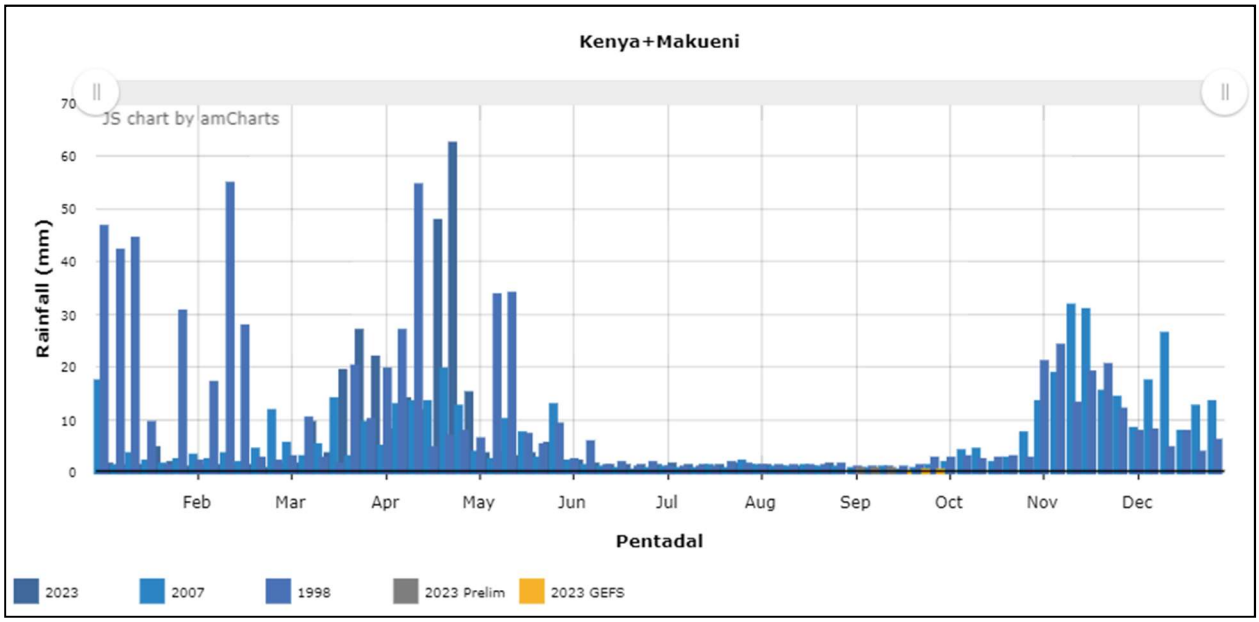
GRAPHICAL PRESENTATION FOR ANALOGUE YEARS (1997 & 2006) FOR MAKUENI COUNTY



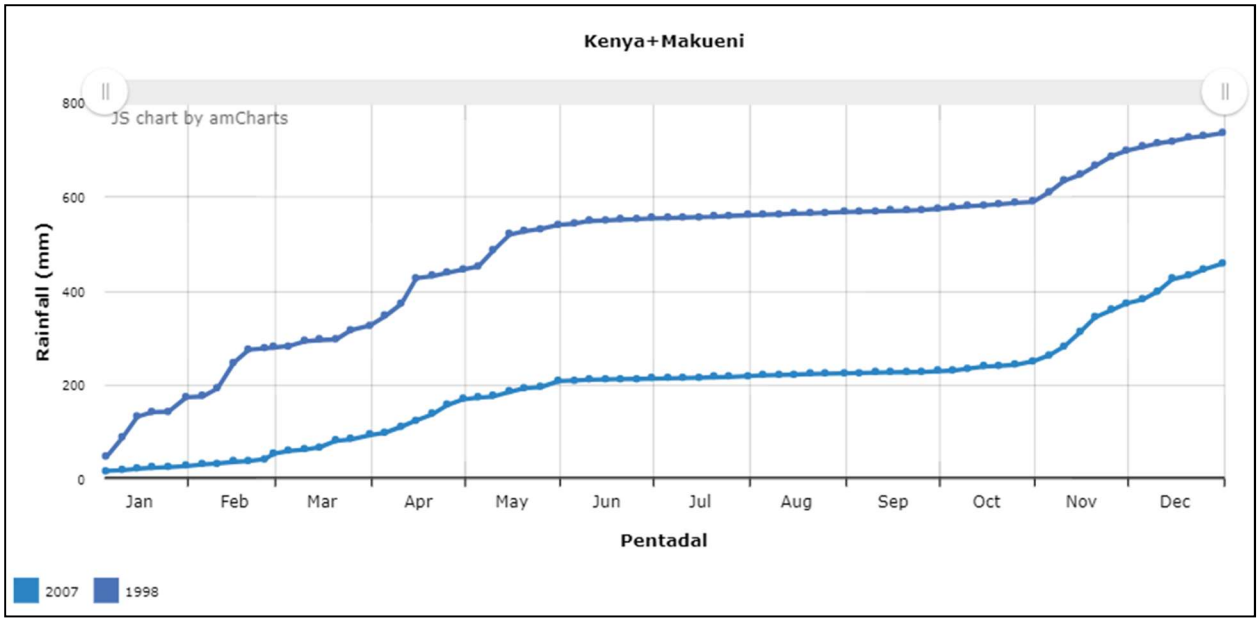
CUMULATIVE CURVES FOR MAKUENI COUNTY FOR ANALOGUE YEARS (1997 & 2006) VS 2023.



POST ANALOGUE YEARS SCENARIOS.



CUMULATIVE CURVES FOR POST ANALOGUE YEARS.



Analysis:

For the post analogue 1997 year, the rains did not cease but continued up to the end of “MAM” 1998 Long rains season.

MAKUENI WARD MAP.