



**MALARIA EPIDEMIC EARLY PREDICTION SYSTEM FOR WESTERN KENYA HIGHLAND FOR APRIL 2021**

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**1. Summary**

The model outputs for the malaria epidemic early prediction system for the western highlands of Kenya indicate **no risk** of malaria outbreak in **all** areas in the months of April and May 2021.

The weather observations indicate generally an increase in Maximum temperature amounts in all the three areas.

**2. Model Outputs**

**2.1 Malaria epidemic early prediction system for Kakamega**

Table 1 below shows the malaria epidemic early prediction system for Kakamega for April 2021.

**Table 1: MALARIA EPIDEMIC EARLY PREDICTION SYSTEM: KAKAMEGA**

Yr.	Month	Tmax	Mean Tmax	Tmax Deviation /anomaly	R/fall (mm)	R/fall Code	Tmax Deviation /anomaly Code	Additive % Risk
2020	12	29.1	27.5	1.6	108.1	0	4	4.5
2021	01	28.3	28.3	0.0	104.2	0	1	18.2
2021	02	29.0	29.2	-0.2	135.2	0	0	4.5
2021	03	30.0	29.1	0.9	92.7	0	1	0.0

The observed climate data for March 2021 indicates an increase in maximum temperature. However, the maximum temperature anomaly in March 2021 was positive (0.9 above the mean of the month). Rainfall decreased from 135.2mm in February 2021 to 92.7mm in March 2021. The additive model

**Box 1:**  
For Kakamega, the epidemic threshold level is 30%.

percentage risk in March 2021 was Nil.

**Consequently, there is no risk of the Malaria Epidemic outbreak in Kakamega in the month of April and May 2021.** (See Figure 1)

Table 2 below shows the malaria epidemic early prediction system for Kisii for April 2021.

**Table 2: MALARIA EPIDEMIC EARLY PREDICTION SYSTEM: KISII**

Yr	Mon	Tmax (°C)	Mean Tmax (°C)	Tmin (°C)	Mean Tmin (°C)	Tmax Dev./anom	Tmin Dev./anom	Total Temp Dev./Anom	Temp Dev./anom Code	R/fall (mm)	R/fall Code	Model Output
2020	12	26.1	25.4	15.8	15.4	0.7	0.4	1.1	2	178.4	0	0
2021	01	26.0	26.1	15.8	15.7	-0.1	0.1	0.0	0	73.8	0	0
2021	02	26.5	27.0	16.1	16.1	-0.5	0.0	-0.5	0	192.2	0	0
2021	03	27.7	27.0	15.8	15.9	0.7	-0.1	0.6	0	139.3	0	0

The observed climate data for Kisii for March 2021 indicates an increase in maximum temperature from 26.5°C in February 2021 to 27.7°C in March 2021. This observation in March 2021 was positive (0.7°C above the mean of the month). Rainfall decreased from 192.2mm in February 2021 to 139.3mm in March 2021. The Model output risk is Nil.

**Box 2:**

For Kisii, the epidemic threshold level is 20%.

**Hence there is no risk of malaria epidemic in Kisii in the month of April and May 2021.** (See Figure 2).

**2.2 Malaria epidemic early prediction system for Nandi**

Table 3 below shows the malaria epidemic early prediction system for Nandi for April 2021.

**Table 3: NANDI MALARIA EPIDEMIC EARLY PREDICTION SYSTEM**

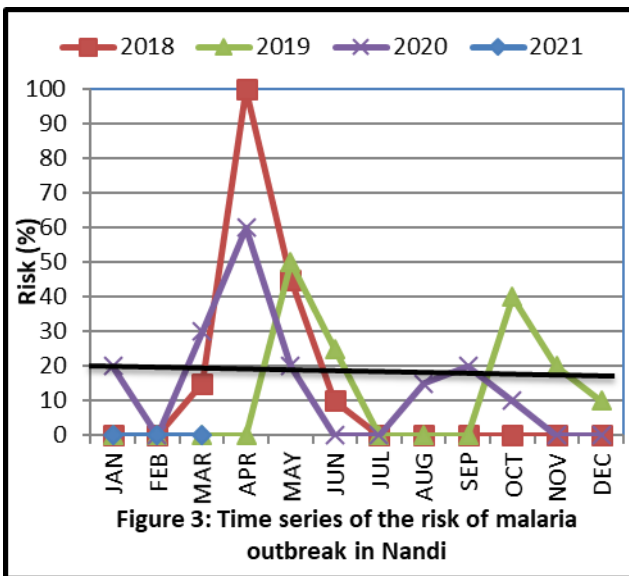
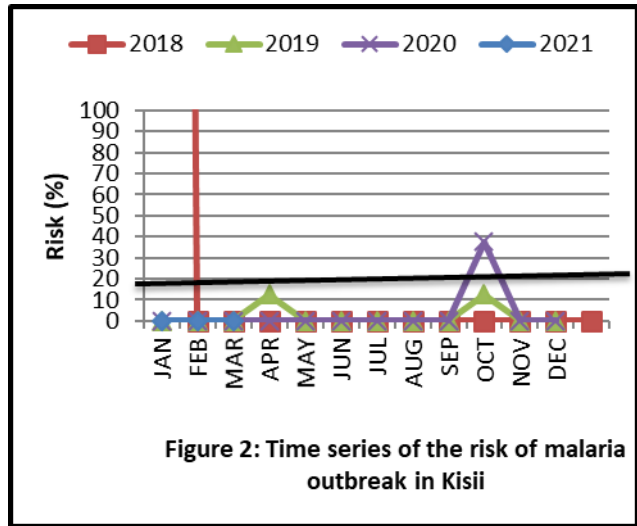
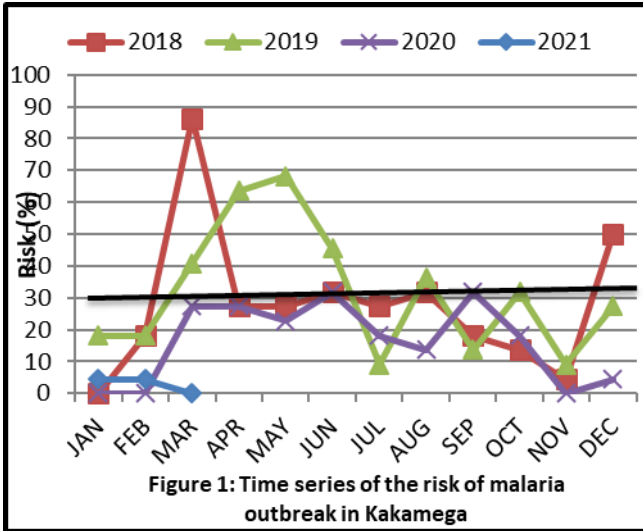
Yr	Mon	Tmax (°C)	Mean Tmax (°C)	Tmax Dev.	Tmin	Mean Tmin	Tmin Dev./anom	Total Temp Dev./Anom.	R/fall (mm)	Temp Dev. Filters	R/fall Filter	Multiplicative Model
2020	12	25.1	23.7	1.4	10.4	10.8	-0.4	1.0	70	1	0	0.0
2021	01	25.0	23.3	1.7	11.0	10.9	0.1	1.8	187.7	2	0	0.0
2021	02	23.3	23.2	0.1	11.5	11.7	-0.2	-0.1	121.7	1	0	0.0
2021	03	26.8	23.0	3.8	11.3	11.5	-0.2	3.6	86.2	4	0	0.0

The maximum temperature in Nandi increased from 23.3°C in February 2021 to 26.8°C in March 2021. This observation in March 2021 for Nandi was negative (0.2°C below the mean of the month).

**Box 3:**  
For Nandi, epidemic threshold level is 20%.

Rainfall decreased from 121.7mm in February 2021 to 86.2mm in March 2021. The March 2021 multiplicative model percentage risk for malaria was Nil.

**Hence, there is no risk of malaria epidemic in Nandi in the month of April and May 2021.** (See Figure 3)



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