



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

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**1. Summary**

The model outputs for the malaria epidemic early prediction system for the western highlands of Kenya indicate **high** risk of malaria outbreak in **Nandi** in the months of June and July 2021.

The weather observations indicate generally a decrease 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 June 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
2021	04	27.8	27.3	0.5	290.6	6	1	31.8
2021	05	27.0	26.4	0.6	234.7	4	1	22.7

The observed climate data for May 2021 indicates a decrease in maximum temperature. However, the maximum temperature anomaly in May 2021 was positive (0.6 above the mean of the

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

month). Rainfall decreased from 290.6mm in April 2021 to 234.7mm in May 2021. The additive model percentage risk in May 2021 was 22.7%.

**Consequently, there is low risk of the Malaria Epidemic outbreak in Kakamega in the month of June and July 2021.** (See Figure 1)

Table 2 below shows the malaria epidemic early prediction system for Kisii for June 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
2021	04	25.8	25.5	15.6	15.8	0.3	-0.2	0.1	0	264.6	2	0
2021	05	24.7	25.1	15.7	15.6	-0.4	0.1	-0.3	0	272.7	2	0

The observed climate data for Kisii for May 2021 indicates a decrease in maximum temperature from 25.8°C in April 2021 to 24.7°C in May 2021. This observation in May 2021 was negative (0.4°C below the mean of the month). Rainfall increased from 264.6mm in April 2021 to 272.7mm in May 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 June and July 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 June 2021.

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

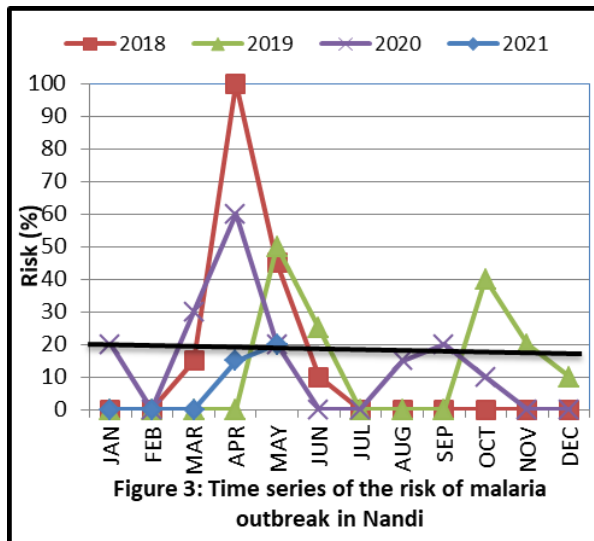
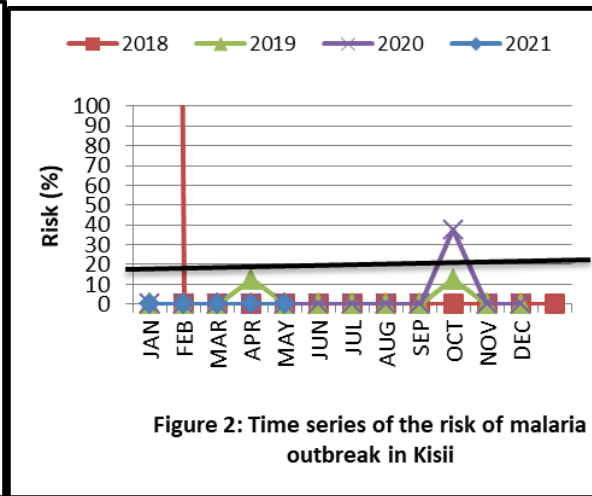
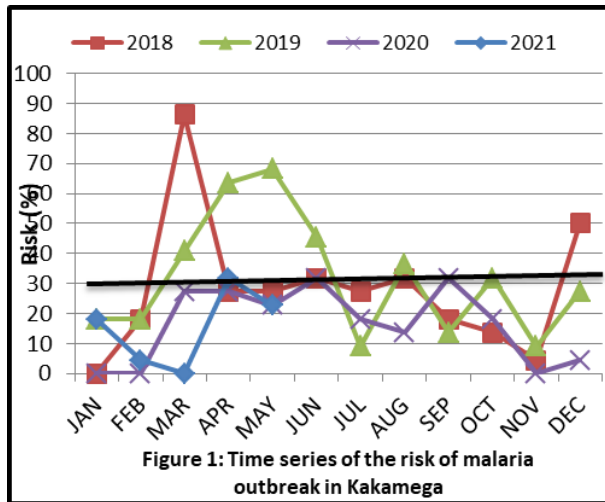
Yr	Mon	Tmax (°C)	Mean Tmax (°C)	Tmax Dev.	Tmin	Mean Tmin	Tmin Dev./anom	Total Temp Dev./Anom.	R/fall (mm)	Temp Dev. Filters	R/fall Filter	Multiplicative Model
2020	12	25.1	23.7	1.4	10.4	10.8	-0.4	1.0	70	1	0	0.0
2021	01	25.0	23.3	1.7	11.0	10.9	0.1	1.8	187.7	2	0	0.0
2021	02	23.3	23.2	0.1	11.5	11.7	-0.2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

2021	04	24.5	22.8	1.7	11.9	11.2	0.7	2.4	301.1	3	3	15.0
2021	05	24.1	22.7	1.4	12.0	10.7	1.3	2.7	222.5	3	1	20.0

The maximum temperature in Nandi decreased from 24.5°C in April 2021 to 24.1°C in May 2021. This observation in May 2021 for Nandi was positive (1.3°C above the mean of the month). Rainfall decreased from 301.1mm in April 2021 to 222.5mm in May 2021. The May 2021 multiplicative model percentage risk for malaria was 20%.

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

Hence, there is high risk of malaria epidemic in Nandi in the month of June and July 2021. (See Figure 3)



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