



MALARIA EPIDEMIC EARLY PREDICTION SYSTEM FOR WESTERN KENYA HIGHLAND FOR JULY 2021

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1. Summary

The model outputs for the malaria epidemic early prediction system for the western highlands of Kenya indicate **low** risk of malaria outbreak in **three areas** in the months of July and August 2021.

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 July 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
2021	06	27.9	25.8	2.1	161.2	1	4	9.1

The observed climate data for June 2021 indicates an increase in maximum temperature. However, the maximum temperature anomaly in June 2021 was positive (2.1 above the mean of the month). Rainfall decreased from 234.7mm in May 2021 to

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

161.2mm in June 2021. The additive model percentage risk in June 2021 was 9.1%.

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

Table 2 below shows the malaria epidemic early prediction system for Kisii for July 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
2021	06	25.2	24.6	14.9	15.0	0.6	-0.1	0.6	0	94	0	0

The observed climate data for Kisii for June 2021 indicates an increase in maximum temperature from 24.7°C in May 2021 to 25.2°C in June 2021. This observation in June 2021 was positive (0.6°C above the mean of the month). Rainfall decreased from 272.7mm in May 2021 to 94mm in June 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 July and August 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 July 2021.

Table 3: NANDI MALARIA EPIDEMIC EARLY PREDICTION SYSTEM

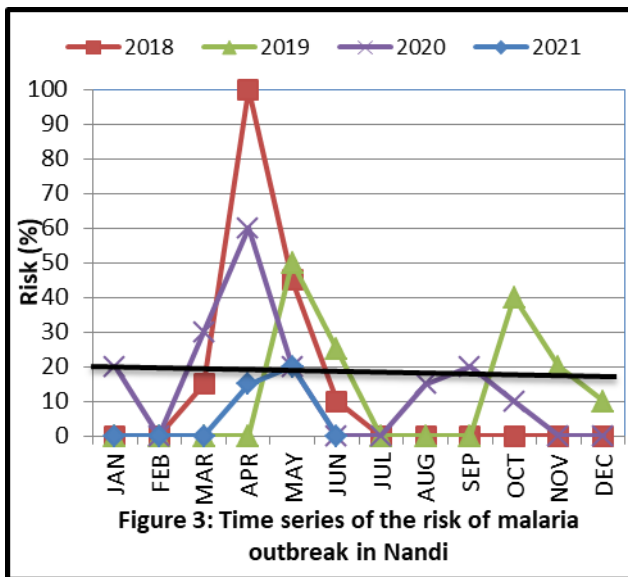
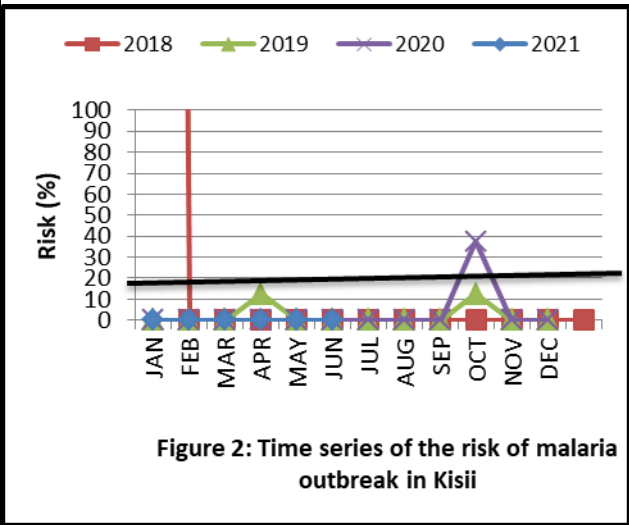
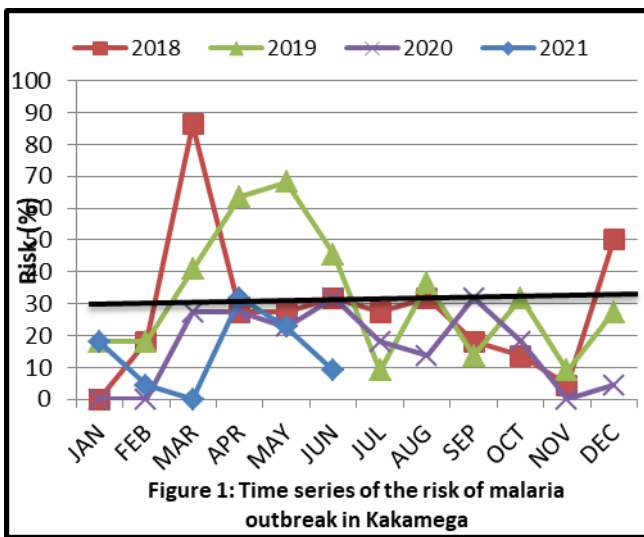
Yr	Mon	Tmax (°C)	Mean Tmax (°C)	Tmax Dev.	Tmin	Mean Tmin	Tmin Dev./anom	Total Temp Dev./Anom.	R/fall (mm)	Temp Dev. Filters	R/fall Filter	Multiplicative Model
2020	12	25.1	23.7	1.4	10.4	10.8	-0.4	1.0	70	1	0	0.0
2021	01	25.0	23.3	1.7	11.0	10.9	0.1	1.8	187.7	2	0	0.0
2021	02	23.3	23.2	0.1	11.5	11.7	-0.2	-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
2021	06	24.1	22.7	1.4	10.9	10.9	0.0	1.4	66.4	2	0	0.0

The maximum temperature in Nandi for May and June 2021 was 24.1°C. This observation in June 2021 for Nandi was equal to the mean of the month. Rainfall decreased from 222.5mm in May 2021 to 66.4mm in June 2021. The June 2021 multiplicative model percentage risk for malaria was Nil.

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

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



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