Republic of Kenya   **Republic of Kenya**

KENYA METEOROLOGICAL DEPARTMENT   **MINISTRY OF HEALTH**

MALARIA EPIDEMIC EARLY WARNING PREDICTION SYSTEM FOR WESTERN   KENYA HIGHLAND FOR JANUARY 2025

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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 in all the three areas in the months of January 2025 and February 2025

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 January 2025.

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
2024	11	27.9	26.9	1.0	336.3	6	1	68.2
2024	12	29.5	27.5	2.0	112.2	0	4	4.5

The observed climate data for December 2024 indicates an increase in maximum temperature from 27.9°C in November 2024 to 29.5°C in December 2024. This observation in December 2024 was positive (2.0 above the mean of the month). Rainfall decreased from 336.3mm in November 2024 to 112.2mm in December 2024. The additive model percentage risk is **4.5%.**

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

 Consequently, there is no risk of Malaria Epidemic in Kakamega in the month of January 2025 and February 2025 (See Figure 1)

Table 2 below shows the malaria epidemic early prediction system for Kisii for January 2025.

Table 2: MALARIA EPIDEMIC EARLY PREDICTION SYSTEM: KISII

Yr	Mon	Tmax (^{0}C)	Mean Tmax (^{0}C)	Tmin (^{0}C)	Mean Tmin (^{0}C)	Tmax Dev./ anom	Tmin Dev. /anom	Total Temp Dev./ Anom	Temp Dev./ anom Code	R/fall (mm)	R/fall Code	Model Output
2024	11	25.0	25.1	16.1	15.2	-0.1	0.9	0.8	0	210.3	1	18.75
2024	12	27.0	25.7	16.3	15.4	1.6	0.9	2.5	3	143.7	0	0

The observed climate data for Kisii for December 2024 indicates an increase in maximum temperature from 25.0°C in November 2024 to 27.0°C in December 2024. This observation in December 2024 was negative (1.6 above the mean of the month). Rainfall decreased from 210.3mm in November 2024 to 143.7mm in December 2024. The Model output risk is **Nil.**

> **Hence there is no risk of malaria epidemic in Kisii in the month of January, 2025 and February, 2025.** (See Figure 2).

> **Box 2:**
> **For Kisii, the epidemic threshold level is 20%.**

2.2   Malaria epidemic early prediction system for Nandi

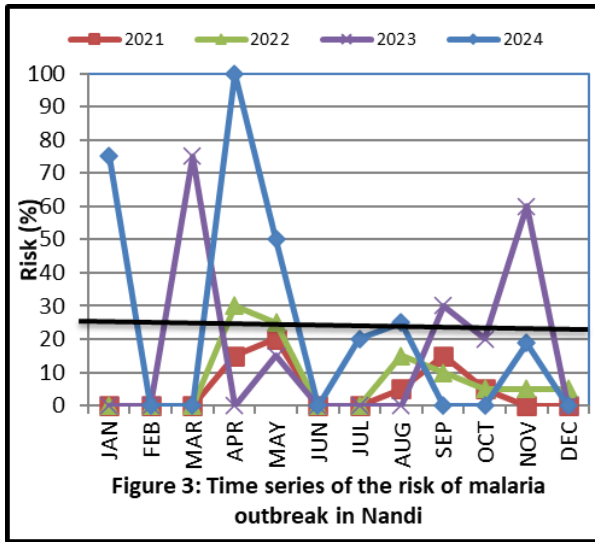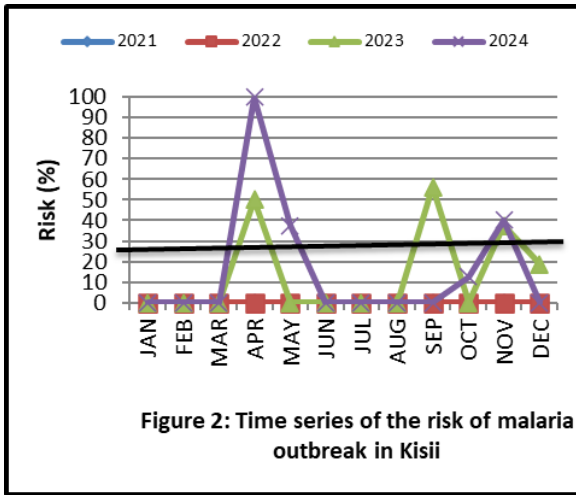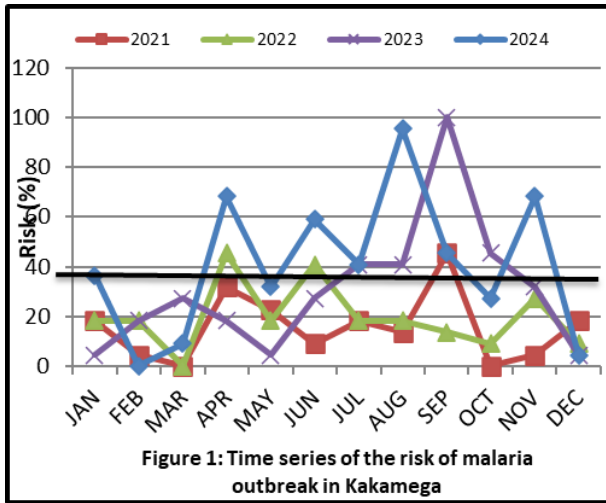Table 3 below shows the malaria epidemic early prediction system for Nandi for January, 2025.

Table 3: NANDI MALARIA EPIDEMIC EARLY PREDICTION SYSTEM

Yr	Mon	Tmax (^{0}C)	Mean Tmax (^{0}C)	Tmax Dev.	Tmin	Mean Tmin	Tmin Dev. /anom	Total Temp Dev. /Anom.	R/fall (mm)	Temp Dev. Filters	R/fall Filters	Multiplicative Model
2024	11	23.7	23.3	0.4	12.3	10.8	1.5	1.8	373.4	2	4	**40.0**
2024	12	23.8	23.7	0.1	11.3	10.8	0.5	0.6	71.6	1	0	**0.0**

The maximum temperature in Nandi indicates a slight increase from 23.7°C in November 2024 to 23.8°C in December 2024. This observation in December 2024 for Nandi was positive (0.1°C above the mean of the month). Rainfall decreased from 373.4mm in November 2024 to 71.6mm in December, 2024. The additive model percentage risk is **Nil.**

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

Hence, there is no of malaria epidemic in Nandi in the month of January, 2025 and February, 2025. (See Figure 3)

Figure 1: Time series of the risk of malaria outbreak in Kakamega

Figure 2: Time series of the risk of malaria outbreak in Kisii

Figure 3: Time series of the risk of malaria outbreak in Nandi

Dr Gikungu
DIRECTOR, KENYA METEOROLOGICAL DEPARTMENT