Republic of Kenya

KENYA METEOROLOGICAL DEPARTMENT

Republic of Kenya

MINISTRY OF HEALTH

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

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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 in all the three areas in the months of June, 2025 and July, 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 June, 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
2025	1	29.9	28.3	1.6	85.3	0	4	18.2
2025	2	32.7	29.2	3.5	3.9	0	16	18.2
2025	3	30.7	29.1	1.6	190.1	2	4	81.8
2025	4	28.7	27.3	1.4	251.1	5	4	40.9
2025	5	27.8	20.4	1.4	502.1	6	4	45.5

The observed climate data for May, 2025 indicates a decrease in maximum temperature from 28.7°C in April, 2025 to 27.8°C in May, 2025. This observation in May, 2025 *was positive (1.4 above the mean of the month).* Rainfall increased from 251.1mm in April, 2025 to 502.1mm in May, 2025. The additive model percentage risk is **45.5%.**

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

Consequently, there is high risk of Malaria Epidemic in Kakamega in the month of May, 2025 and June, 2025 (See Figure 1)

Figure 1:

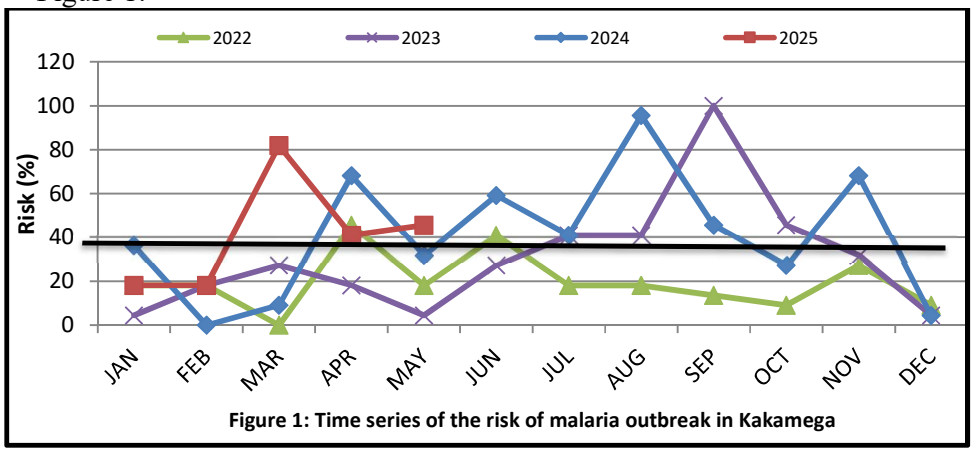

Figure 1: Time series of the risk of malaria outbreak in Kakamega

2.2 Malaria epidemic early prediction system for Kisii

Table 2 below shows the malaria epidemic early prediction system for Kisii for June, 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
2025	1	29.9	26.1	16.9	15.7	3.8	1.2	5.0	5	206.4	1	0
2025	2	29.2	27.0	11.3	16.1	2.2	-4.8	-2.6	0	47.6	0	0
2025	3	27.3	27.0	16.7	15.9	0.3	0.8	1.1	2	168.7	0	0
2025	4	25.5	25.5	16.3	15.8	0.0	0.5	0.5	0	287.1	2	0
2025	5	25.5	25.1	16.2	15.6	0.4	0.6	1.0	2	366.7	4	50

The observed climate data for Kisii for May, 2025 indicates no change in maximum temperature from 25.5°C in May, 2025. This observation in May, 2025 was *positive (0.4 above the mean of the month).* Rainfall increased from 287.1mm in April, 2025 to 366.7mm in May, 2025.

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

The model output risk is **50%. Therefore, there is high risk of malaria epidemic in Kisii in the month of June, 2025 and July, 2025.** (See Figure 2).

Figure 2:

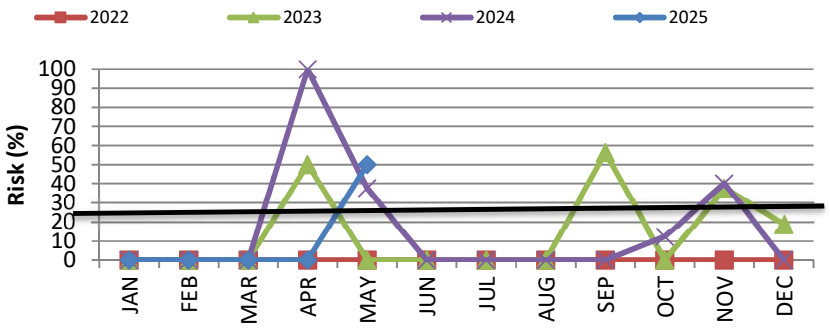

Figure 2: Time series of the risk of malaria outbreak in Kisii

2.3 Malaria epidemic early prediction system for Nandi

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

Table 3: NANDI MALARIA EPIDEMIC EARLY PREDICTION SYSTEM

Yr	M0n	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
2025	1	25.1	23.3	1.8	11.8	10.9	0.9	2.7	101	3	0	**0**
2025	2	27.6	23.2	4.4	16.8	11.7	5.1	9.5	32.7	5	0	**0**
2025	3	25.9	23.0	2.9	12.7	11.5	1.2	4.1	189.5	1	0	**0.0**
2025	4	24.8	22.8	2.0	12.4	11.2	1.2	3.2	267.6	4	2	**50.0**
2025	5	23.4	22.7	0.7	12.3	10.7	1.6	2.3	283.7	3	2	**50.0**

The maximum temperature in Nandi indicates a decrease from 24.8°C in April, 2025 to 23.4°C in May, 2025. This observation in May, 2025 for Nandi was *positive (0.7°C above the mean of the month).* Rainfall increased from 267.6mm in April, 2025 to 283.7mm in May, 2025.

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

The additive model percentage risk is **50.0%.**

Hence, there is high risk for malaria outbreak for the month of June, 2025 and July, 2025. (See Figure 3)

Figure 3:

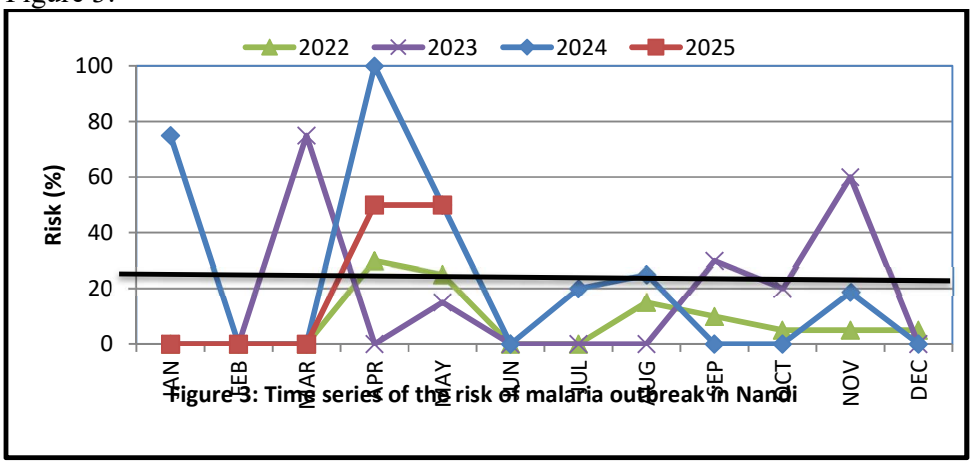

Figure 3: Time series of the risk of malaria outbreak in Nandi

3. Disclaimer

The information presented in this bulletin is based on predictive models and observed climate data, which are subject to change. While every effort has been made to ensure the accuracy and reliability of the data, the following points should be noted.

Public Health Advisory: This bulletin is intended for informational purposes only. It should not be used as the sole basis for public health decisions. Local health authorities should be consulted for actionable guidance and preventive measures against malaria.

Continuous Monitoring: Malaria transmission dynamics are influenced by numerous factors, including temperature, rainfall, and human behaviour. Continuous monitoring and updates to the predictive models are essential for accurate assessments.

Updates: This bulletin reflects data and predictions as of May 2025. Future updates will be issued as new data becomes available.

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