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**Ministry of Water and Energy**  
**EMI**  
**Bio Meteorology and Insurance Index Desk**



**Climate Information**  
**For**  
**The Health Sector**

December Monthly Assessment and January 1-10  
Forecast

**December\_2023**

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## Foreword

This "Climate Information for the Health Sector" Bulletin has been designed to convey essential information regarding the monitoring of human comfort conditions based on the analysis of temperature and humidity data and also for the monitoring of Malaria outbreak areas based on the analysis of temperature and precipitation data. Since the monitoring of temperature and rainfall over a given area can be used to assess the likelihood of an outbreak of Malaria with a lag of two months, this information can be an important early warning tool if used judiciously.

The major objective of this bulletin is in line with the Ethiopia Meteorological Institute's strategy of diversifying climate application products to the basic developmental sectors (such as the Health, water, agricultural sector, etc...). This bulletin can be a very important source of information to Health professionals engaged in the monitoring of Public Health, to Tourism Agents and institutions who advise tourists regarding the comfort conditions of the places to be visited by the tourists, and to the researcher who is interested in the field of Bio-Climatology.

We have the opinion that careful and continuous use of this bulletin can benefit the improvement of early warning and preparedness in the health sector.

Meanwhile, your comments and constructive suggestions are highly appreciated to make the objective of this bulletin a success,

This same bulletin can be accessed online at: [http://www.ethiomet.gov.et/bulletins/health\\_bulletins](http://www.ethiomet.gov.et/bulletins/health_bulletins)

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# Part One

## 1. Weather Assessment of December

### 1.1 RTH Conditions for Malaria Transmission during December 2023

According to the collected and analyzed climate data for December 2023, during December 2023, there were **no favorable** weather conditions for the breeding and development of malaria over the country as illustrated in Figure 1.

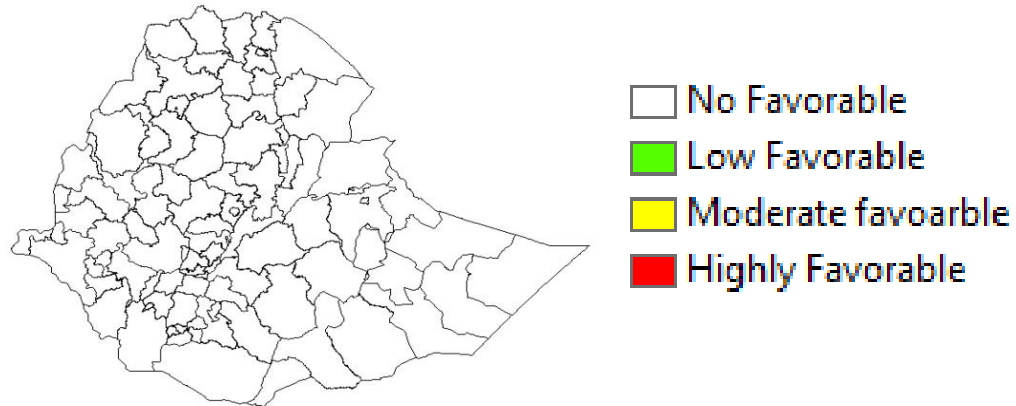


Fig 1:- Suitable weather conditions for malaria incidence during December 2023.

### 1.2 THI Conditions during December 2023

#### 1.2.1 THI for Human

As a result of the Temperature-Humidity Index (THI) analysis, during December 2023 heat stress was observed over a few places in the lowland parts of Gambela and Afar regions which contributed only 3% of the recorded stations; whereas the rest of most parts of the country (84% of the recorded stations) experienced comfortable and moderately comfortable weather conditions. Expansion of cold-stress (13% of the recorded stations) weather conditions was observed in the highlands of northern, southern, and central parts of Ethiopia.

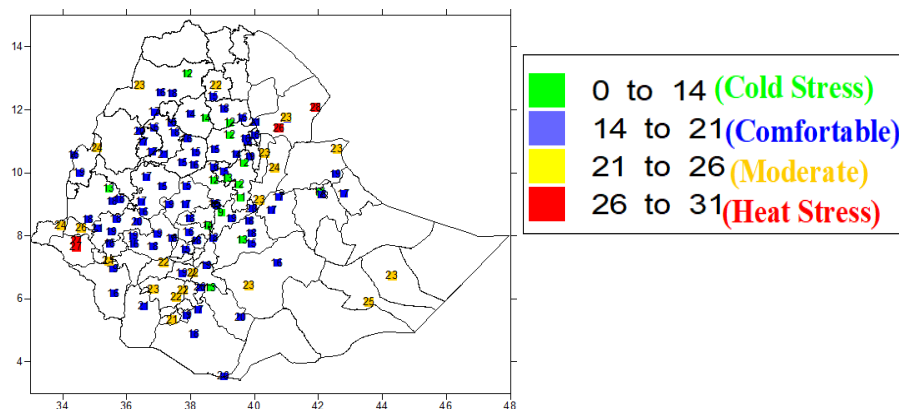


Fig 2:- Comfort index for humans during December 2023.

### 1.2.2 THI for Cattle

According to the collected meteorological data of December 2023, mild heat stress for Cattle was observed over eastern Afar, south and south-eastern Somali, Gambela, Border of West Amhara, Benishangul Gumuz and South Ethiopia regions. Whereas the rest parts of the country were dominated by threshold to Not-stress conditions.

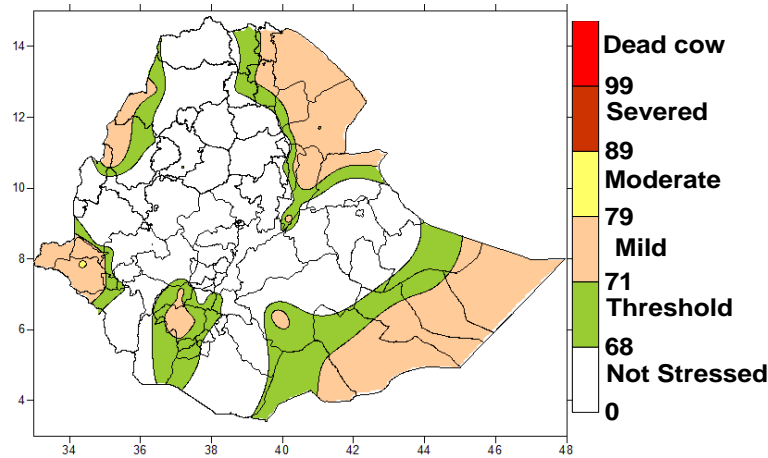


Fig 3:- Comfort index for Cattle during December 2023.

## Part Two

### 2 Expected Weather Impacts on health for first (1-10) dekade of January 2024

#### 2.1 Expected Mosquito Breeding Suitable Areas

During the first ten days of January 2024, favorable climate conditions for mosquito breeding and development will occur over the South and Southwestern parts of Ethiopia. Specifically, areas such as Western, Oromia, Southern Ethiopia, and Sidama regions will be the more suitable areas for malaria transmission.

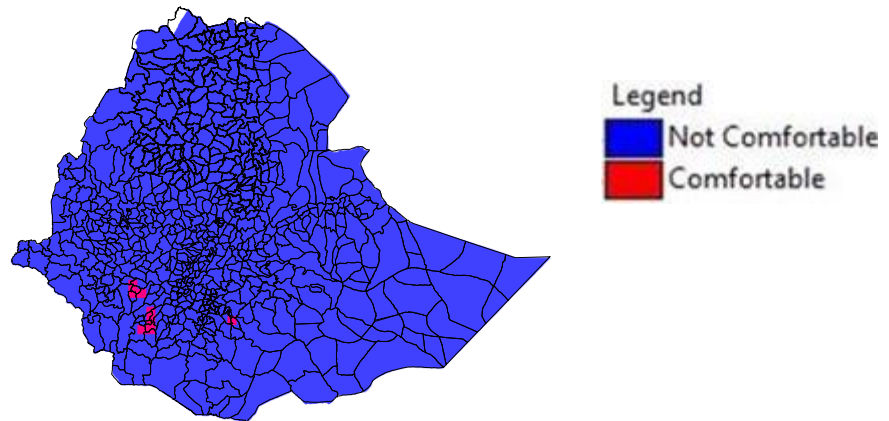


Fig 4: Suitable weather conditions for malaria incidence for January 1<sup>st</sup> dekade 2024

## 2.2 Temperature Humidity Index (THI)

### 2.2.1 THI for Cattle

During the first ten days of January 2024, the low-lying border areas of the country will experience mild to moderate heat stress, while the central and highland regions will have favorable weather conditions for both dairy and non-dairy cattle, as shown in Figure 5.

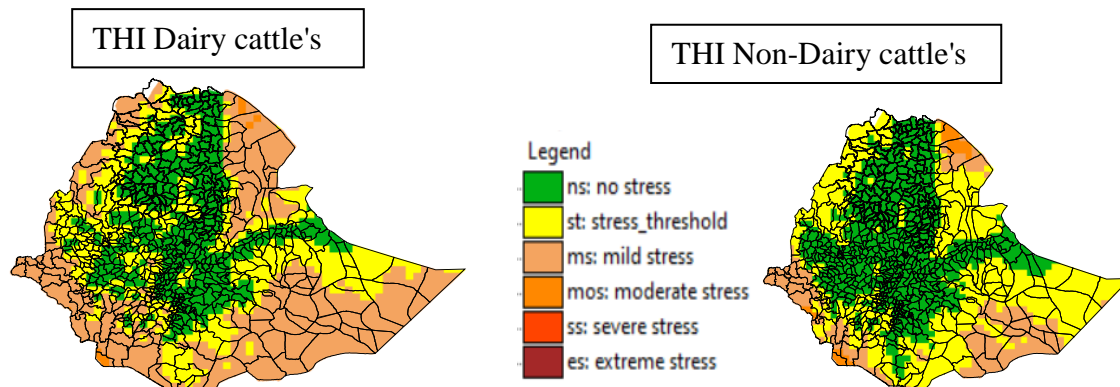


Fig 5: Comfort index for Cattle during 1<sup>st</sup> Dekad of January 2024

### 2.2.2 THI for Human

During the first ten days of January 2024, the southern Somali regions, Eastern Gambela, Northern Afar, and lowlands of South Ethiopia regions will experience hot and humid weather conditions with a 50% chance of discomfort. The remaining parts of the country will have comfortable weather conditions. The highlands of the Northern, Central, and Southern parts of the country will experience cold and dry weather conditions compared to the last dekad.

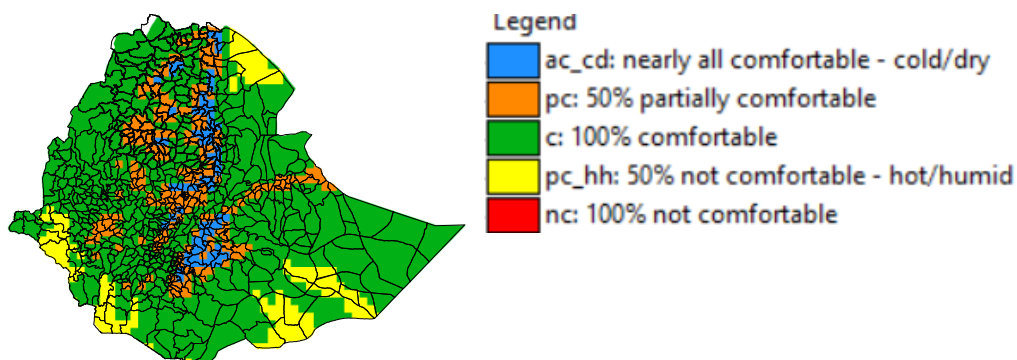


Fig 6: Comfort index for humans during 1<sup>st</sup> Dekad of January 2024

### **3. Conclusion**

Based on the climate health analysis for this month, it has been observed that, there were No favorable weather conditions to the breeding and development of vector-borne diseases, especially malaria. Additionally, over the next 10 days, the south and Southwestern parts of the country will continue to experience suitable conditions for the development and survival rate of mosquitoes.

In terms of weather comfort, most parts of the country have experienced pleasant conditions for both humans and livestock. However, certain regions like Afar, and Gambela, might be affected by heat stress. Looking ahead to the next 10 days of January first dekad, the low-lying border areas of the country will experience moderately heat stress, which will affect both humans and cattle.

### **4. Recommendations**

Use and implement the following recommendations in places that are favorable for the development of malaria and other vector-borne related diseases;

- Attention to any incidence, especially for malaria disease in such favorable areas
- Controlling measures and activity are advised
- Reducing the environmentally aggravating condition
- Awareness creation campaign to the community and sharing of the climate-health update
- As per the threshold of malaria, the impact will start after the end of this month, and be ready to respond before it leads to significant impacts
- Avoid any exposure of the community to mosquitoes by ensuring a clean environment and using mosquito nets.