

WEEKLY MENINGITIS VIGILANCE FOR AFRICA

Bulletin No. 002

Issued on January 14, 2020

Valid until January 21, 2020

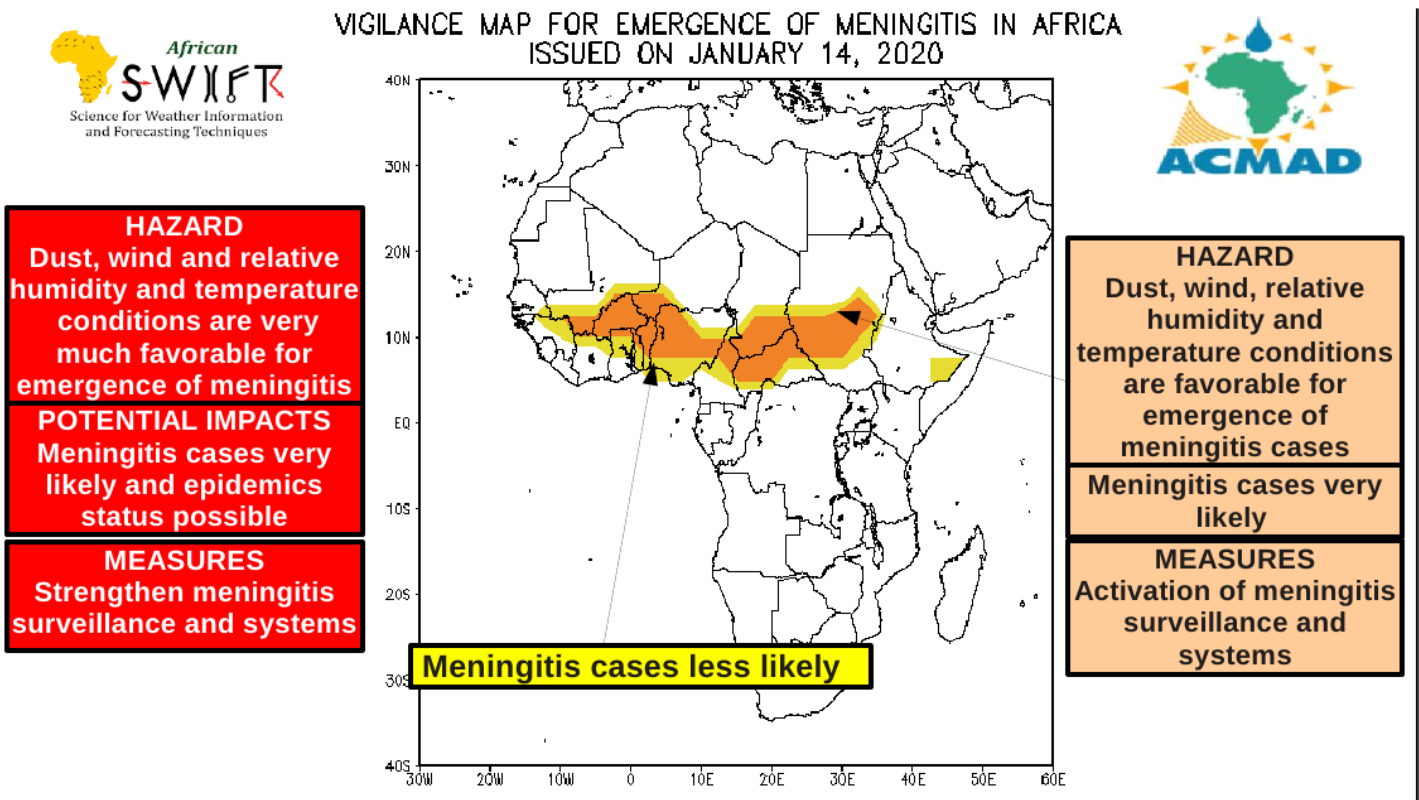
Produced by Dr Cheikh DIONE (cheikh.dione@acmad.org)



This bulletin was supported by UK Research and Innovation as part of the Global Challenges Research Fund, grant number NE/P021077/1.

1 Vigilance

- Meningitis cases are very likely over southern Mali, Burkina Faso, northern Ghana, Togo and Benin, western Niger, central Nigeria, southern Chad, Central African Republic, and southern Sudan.
- Low to no vigilance is needed over the remaining parts of the meningitis belt.



2 Atmospheric conditions

2.1 Relative humidity

Figure 1 shows the mean relative humidity at 1000 hPa estimated from NCEP reanalysis during 4 -11 January 2020 period. Very dry atmospheric conditions (relative humidity below 20 %) prevailed over southern Mauritania, central Sudan. Atmospheric conditions becoming dry (relative humidity between 20 and 40 %) was observed over eastern Senegal, Mali, much parts of Mauritania, Niger, Burkina Faso, Nigeria, Benin, Togo, Southern Algeria, northern Ivory Coast, Guinea, Cameroon, and Ghana, CAR, Chad, much part of Sudan, northern South Sudan, and southern Algeria. Wet atmospheric conditions (relative humidity above 60 %) prevailed over southern Ivory Coast, Liberia, Sierra Leona, southwestern Ghana, part of Somalia, south equatorial countries, part of South Africa, Madagascar, Mozambique, Botswana, northern Morocco, Algeria, Tunisia, Libya, and Egypt.

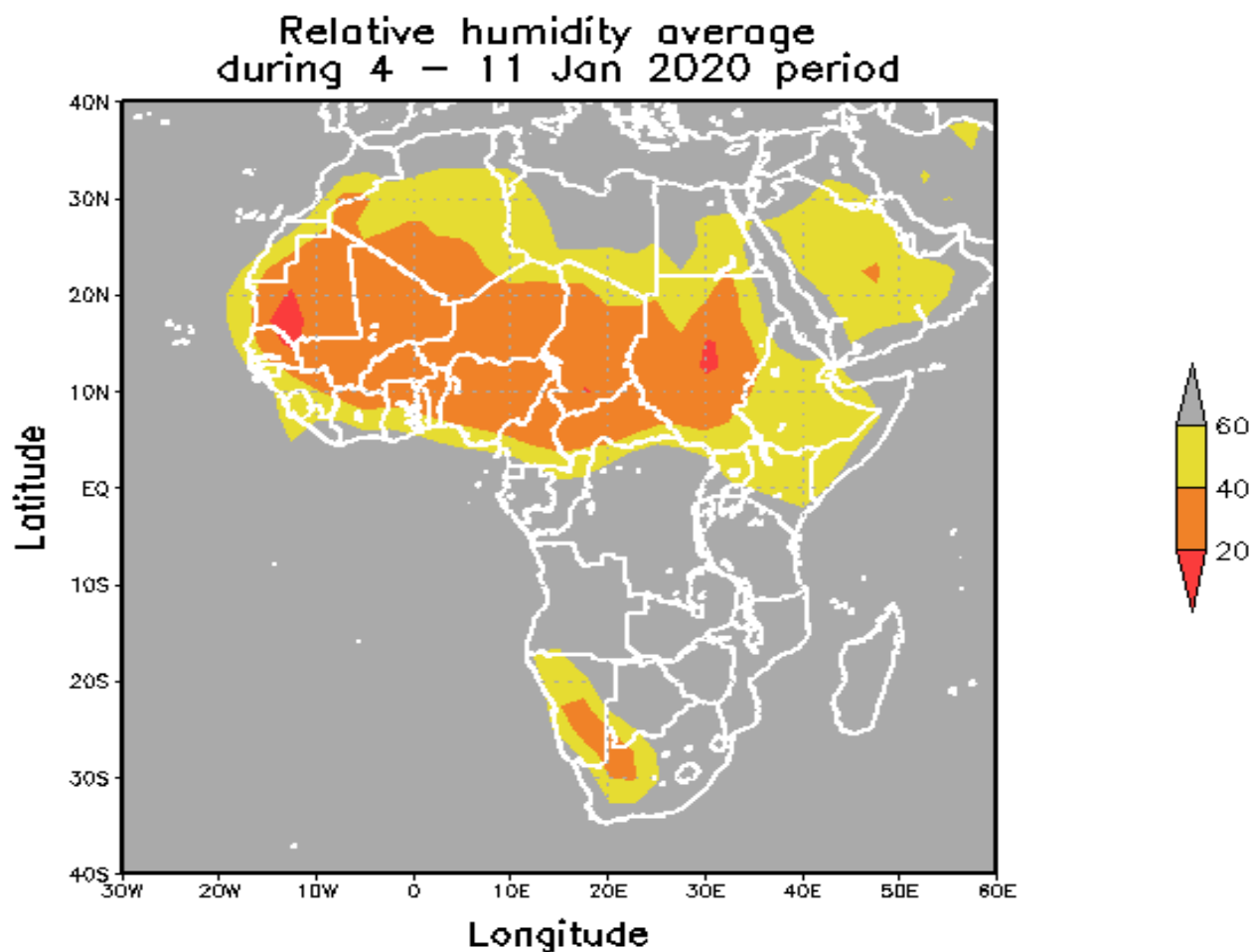


FIGURE 1 – Mean relative humidity (%) for the period 4 -11 January 2020 estimated from NCEP reanalysis at 1000 hPa.

2.2 Surface dust concentration

Figure 2 shows the mean surface dust concentrations prospected using ECMWF forecast during the period from 4 -11 January 2020. Highest values of surface dust concentrations observed over the meningitis belt prevailed over the central and eastern Sahel with spatial heterogeneity during this period. Very dusty atmospheric conditions prevailed over eastern Senegal, western Mauritania due to the high northwesterly wind from Azores High pressure. The cold temperatures observed over the highest dusty atmospheric conditions (see Figure 3 do not favor high meningitis occurrence over those areas. High values of dust concentrations were also prospected central Algeria, and part of Nigeria. Moderate or low surface dust concentrations remained over the rest of the remaining part of the meningitis belt.

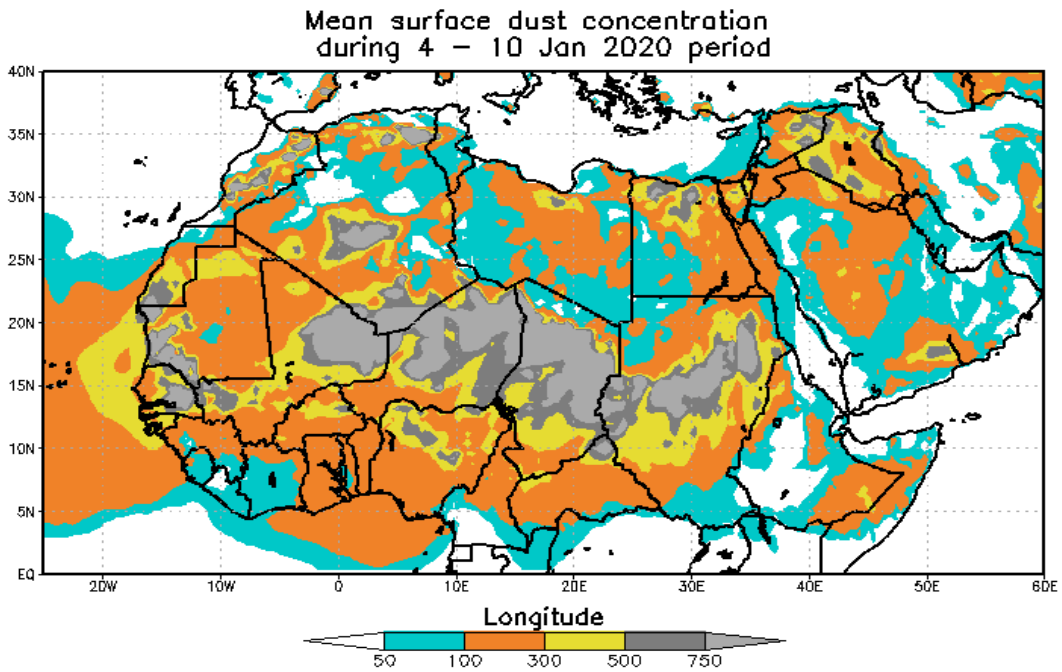


FIGURE 2 – Mean surface dust concentration ($\mu\text{g m}^3$) forecasted during the week from 4 -11 January 2020 from ECMWF.

2.3 Temperature

Figure 3 shows the mean temperature at 1000 hPa during the period from 4 -11 January 2020. It reveals relatively cold temperature over the Sahara and northern Sahel with temperature lower than 25 °C. The coldest temperatures over Africa during this period were observed northern Africa. The warmest temperatures more than 30 C prevailed over central part of East Africa and Southern Africa. Moderate temperatures were observed over Golf of Guinea countries and central Africa.

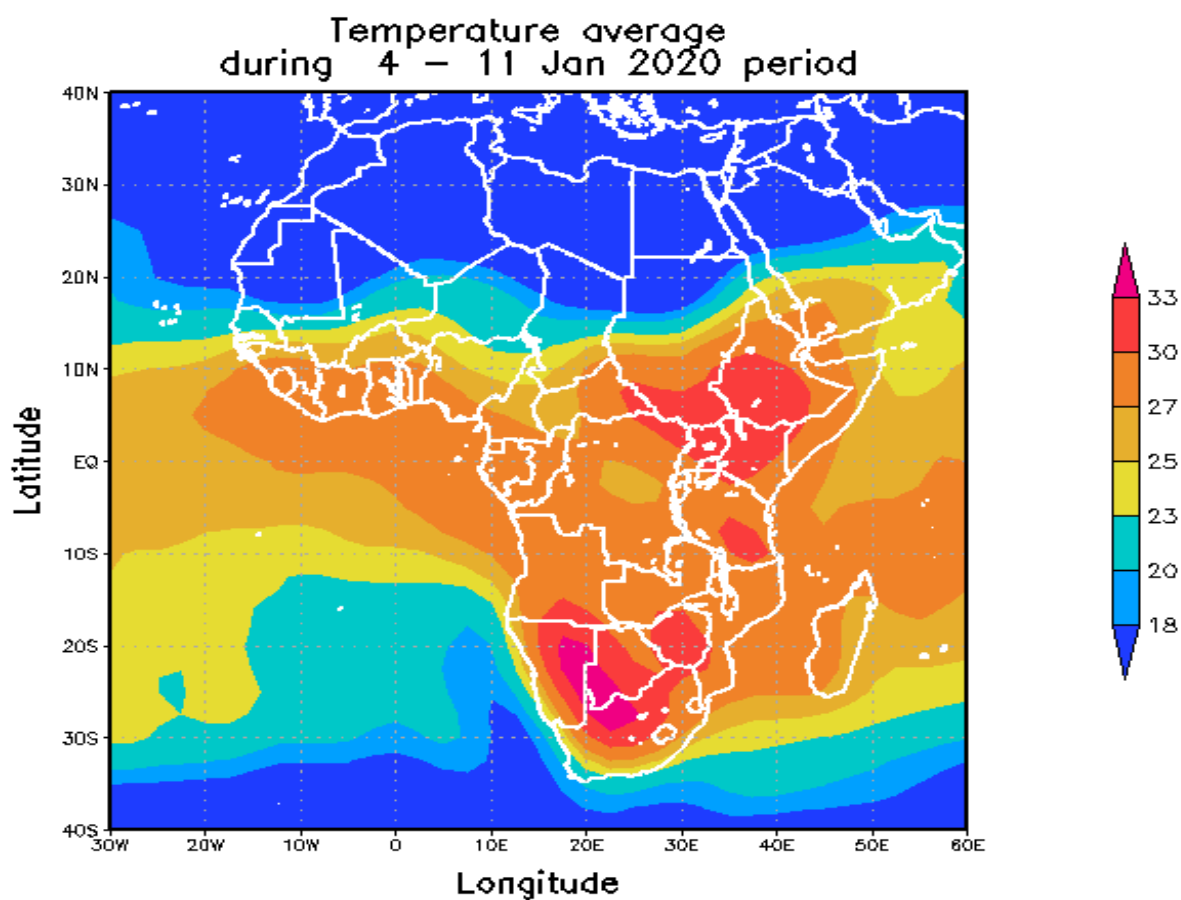


FIGURE 3 – Mean temperature (C) for the period from 4 -11 January 2020 estimated from NCEP reanalysis at 1000 hPa.

2.4 Meridional wind speed

Figure 4 shows the mean meridional wind speed at 1000 hPa during the period from 4 -11 January 2020. It indicates that the ITD position was located on average over northern Liberia, central Ivory Coast, southern Ghana, Togo and Benin, large of Nigerian coasts and central Cameroon and northern Congo. Southerly wind named monsoon flow prevailed over this area. Southerly wind prevailed of central and Eastern Africa where precipitations are observed this period. Harmattan wind was observed over Mauritania, Senegal, Mali, Burkina Faso, Guinea, Bissau Guinea, Sierra Leona, Niger, Chad, Nigeria, northern Benin, Togo central and northern Cameroon, Sudan, South Sudan, northern Ivory Coast, and Ghana.

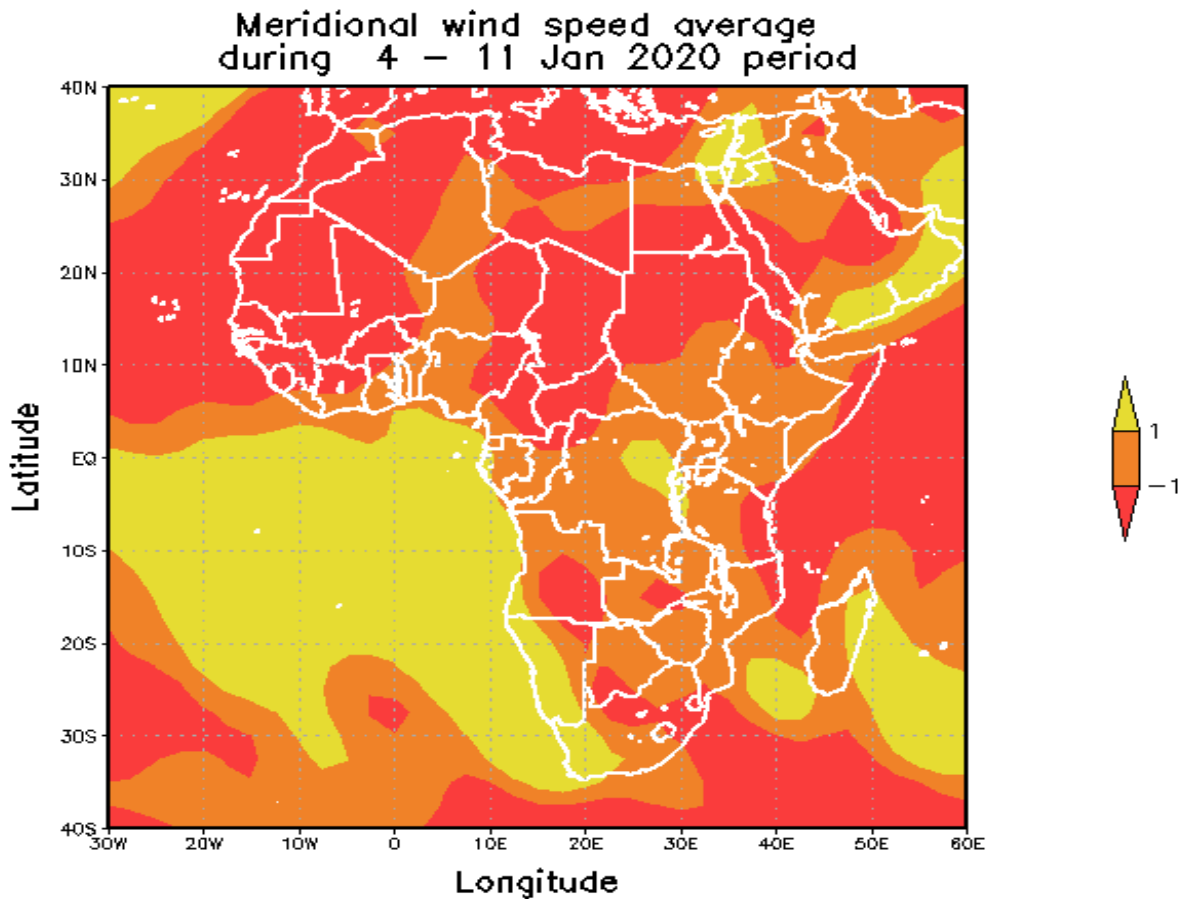


FIGURE 4 – Mean meridional wind speed (m s^{-1}) for the period from 4 -11 January 2020 estimated from NCEP reanalysis at 1000 hPa.