

MENINGITIS VIGILANCE FOR AFRICA

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SUMMARY

- Moderate vigilance is required for meningitis cases over southern Mauritania, northern Senegal, central and southern Mali, central Niger, central Chad, and northern Sudan.
- Low to no vigilance is needed over the remaining parts of the meningitis belt.



FIGURE 1 – African Meningitis Belt.

Figure 2 shows the mean relative humidity estimated from NCEP reanalysis during 18 – 25 May 2019 period. Very dry atmospheric conditions (relative humidity below 20 %) was observed over eastern Mauritania, northern Mali, southern Algeria, central and northern Niger, central and northern Chad, and northern Sudan. The Atlantic inflow associated with northwesterly wind moistened atmospheric conditions over Mauritania and Senegal (relative humidity between 20 and 40 %). The northward migration of the ITD favored moistening conditions over central Mali, northern Burkina Faso, southern Niger, central Chad, and central Sudan and South Sudan. Wet (relative humidity above 40 %) atmospheric conditions prevailed over the Gulf of Guinea countries, Tanzania, Burundi, Somalia, Kenya, Ethiopia, Uganda and Rwanda. Convective activities were observed over southeastern Senegal, southern Mali, Burkina Faso, and countries of the Gulf of Guinea.

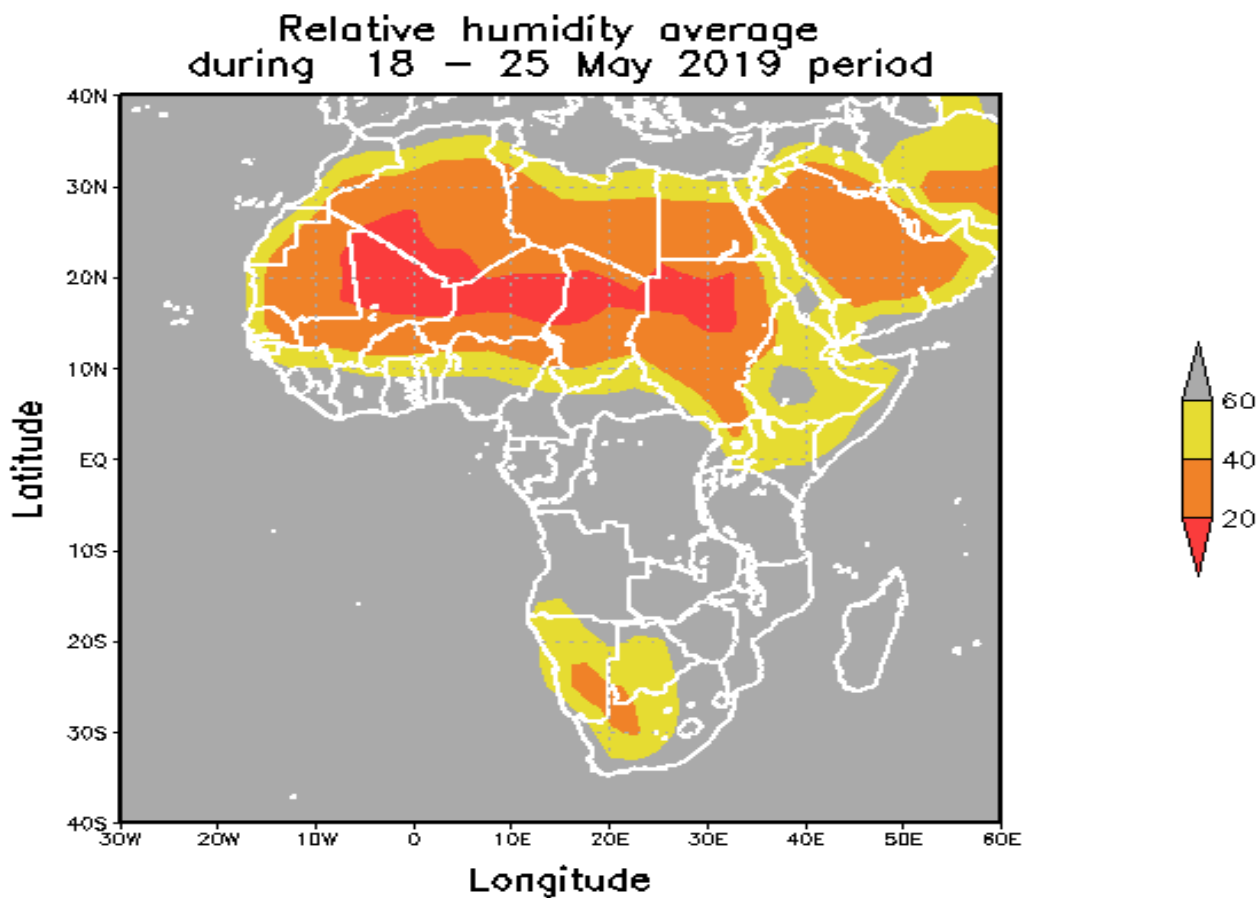


FIGURE 2 – Mean relative humidity (%) for the period 18 – 25 May 2019 estimated from NCEP reanalysis at 1000 hPa.

Figure 3 presents an example of surface dust concentrations estimated on 25th May 2019 at 00 :00 UTC. Highest values of surface dust concentrations observed over the meningitis belt prevailed over the Sahel during this night. Dusty atmospheric conditions prevailed over northern Senegal, western Mauritania and Morocco due to the intensification of the northwesterly wind. High values of dust concentrations were also observed over parts of Algeria, Libya, and Egypt. Moderate or low surface dust concentrations remained over the remaining part of the meningitis.

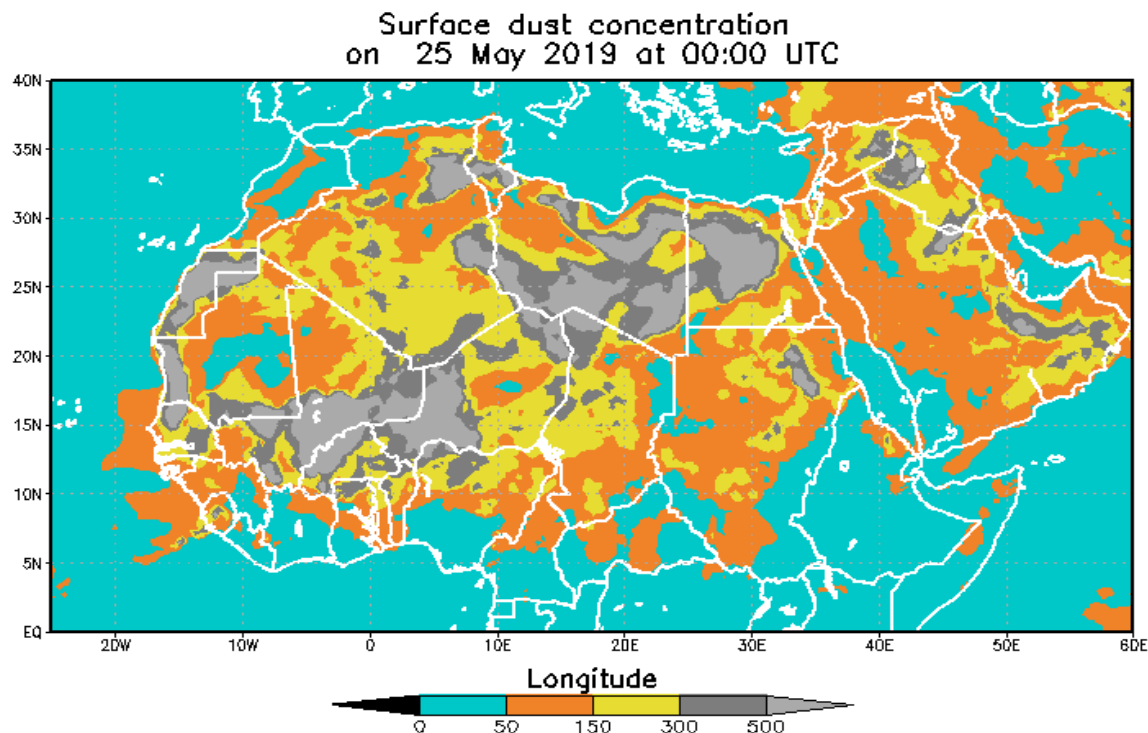


FIGURE 3 – Surface dust concentration ($\mu\text{g m}^3$) estimated on May 18, 2019 at 00 :00 UTC from Goddard Earth Observing Model (GEOS) data.

Figure 4 presents the mean meridional wind speed during the week from 18 – 25 May 2019. It shows that the ITD position was located on average over central Senegal, southern Mauritania, central Mali, northern Niger, northern Chad, and northern Sudan. Harmattan flow favoring the increase of meningitis cases prevailed over northern Mali, northern Niger, northern Chad, and northern Sudan.

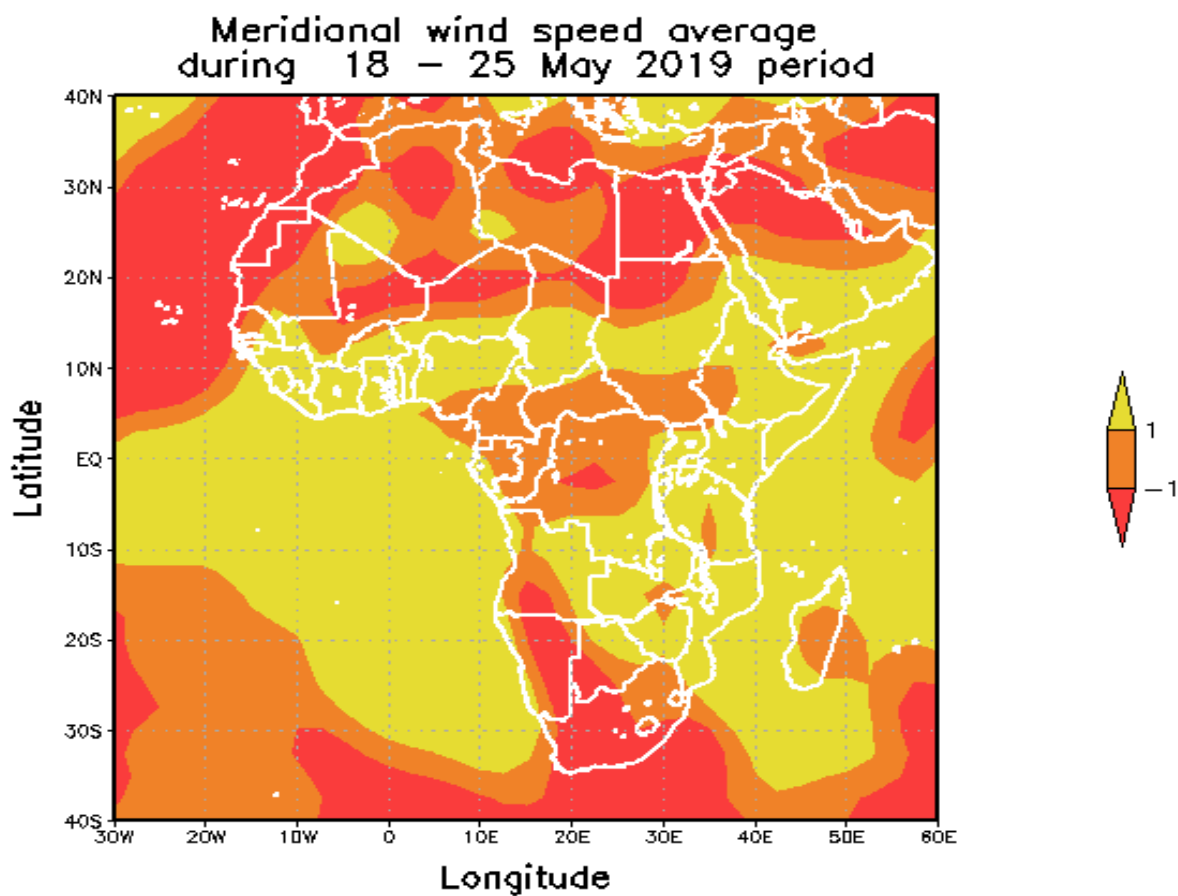


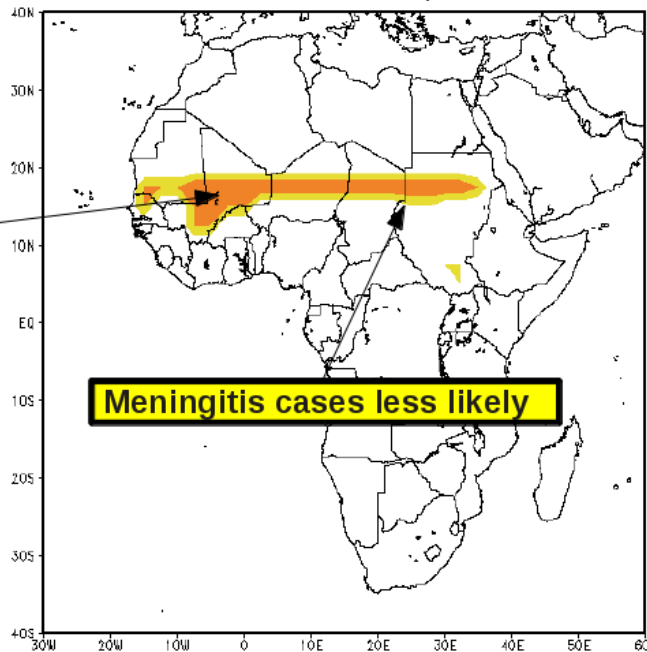
FIGURE 4 – Mean meridional wind speed (m s^{-1}) for the period 18 – 25 May 2019 estimated from NCEP reanalysis at 1000 hPa.



VIGILANCE MAP FOR EMERGENCE OF MENINGITIS IN AFRICA
ISSUED ON MAY 28, 2019



HAZARD Dust, wind and relative humidity conditions are favorable for emergence of meningitis cases
POTENTIAL IMPACTS Meningitis cases very likely
MEASURES Activation of meningitis surveillance and systems



HAZARD Dust, wind and relative humidity conditions are very much favorable for emergence of meningitis cases
POTENTIAL IMPACTS Meningitis cases very likely and epidemics status possible
MEASURES Strengthen meningitis surveillance and systems