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Application for Development

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MENINGITIS VIGILANCE FOR AFRICA

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SUMMARY

- There is persistence of meningitis cases over Burkina Faso, Nigeria, Ghana, Mali, Togo, Central Africa and Benin.
- High vigilance is needed for meningitis cases over southeastern Mali, northern Burkina Faso, Niger, Chad, northern Nigeria, northern Cameroon and western Sudan.
- Moderate vigilance is required over eastern Senegal, central Sudan and northern Guinea
- Low to no vigilance is needed over the remaining parts of the meningitis belt.



FIGURE 1 – African Meningitis Belt.

Table 1: Situation épidémiologique / Epidemiological Situation

Pays	Cas	Décès	Létalité (%)	District en Alerte	District en Epidémie	Complétude (%)
Country	Cases	Deaths	CFR (%)	District in Alert	District in Epidemic	Completeness (%)
Benin ^P	8	2	25.0	0	0	100.0
Burkina Faso ^T	48	3	6.2	0	0	100.0
Burundi ^T	-	-	-	-	-	-
Cameroun ^P	14	0	0.0	1	0	87.9
Centrafrique ^P	4	0	0.0	0	0	45.7
Côte d'Ivoire ^P	3	0	0.0	0	0	100.0
Ethiopia ^T	-	-	-	-	-	-
Ghana ^P	53	1	1.9	5	1	100.0
Guinea ^P	1	0	0.0	0	0	100.0
Guinée Bissau	-	-	-	-	-	-
Gambia ^T	-	-	-	-	-	-
Kenya	-	-	-	-	-	-
Mali ^T	10	0	0.0	0	0	100.0
Mauritania ^P	-	-	-	-	-	-
Niger ^T	-	-	-	-	-	-
Nigeria ^P	31	2	6.5	0	0	100.0
RD Congo ^{P**}	-	-	-	-	-	-
Senegal ^P	-	-	-	-	-	-
South Sudan ^P	-	-	-	-	-	-
Sudan ^T	0	0	0.0	0	0	100.0
Tanzania	-	-	-	-	-	-
Tchad ^T	-	-	-	-	-	-
Togo ^P	11	0	0.0	0	0	93.2
Uganda ^P	-	-	-	-	-	-
Total	183	8	4.4	6	1	40.6

FIGURE 2 – Inventory of meningitis occurrence in Africa during the 4th week of January 2019. Data source : <https://www.who.int/emergencies/diseases/meningitis/meningitis-bulletin-4-2019.pdf?ua=1>

Table 2: SYNTHÈSE DE LA SITUATION ÉPIDÉMIOLOGIQUE/Summary of the Epidemiological situation

Pays	Cas	Décès	Létalité (%)	District en Alerte	District en Epidémie	Semaines notifiées	En districts (%)	En semaines (%)
Country	Cases	Deaths	CFR (%)	District in Alert	District in Epidemic	Reported weeks	In districts (%)	In weeks (%)
Benin ^P	27	7	25.9	0	0	01-04	100.0	100.0
Burkina Faso ^T	195	11	5.6	2	0	01-04	100.0	100.0
Burundi ^T	-	-	-	-	-	-	-	-
Cameroon ^P	78	2	2.6	3	0	01-04	89.5	97.1
Centrafrique ^P	17	0	0.0	0	0	01-04	57.1	91.2
Côte d'Ivoire ^P	23	1	4.3	0	0	01-04	100.0	100.0
Ethiopia ^T	-	-	-	-	-	-	-	-
Ghana ^P	209	6	2.9	6	4	01-04	100.0	100.0
Guinea ^P	12	0	0.0	0	0	01-04	100.0	100.0
Guinée Bissau	-	-	-	-	-	-	-	-
Gambia ^T	1	0	0.0	0	0	01-02	100.0	100.0
Kenya	-	-	-	-	-	-	-	-
Mali ^T	35	0	0.0	0	0	01-04	100.0	99.7
Mauritania ^P	-	-	-	-	-	-	-	-
Niger ^T	31	3	9.7	0	0	01-03	100.0	100.0
Nigeria ^P	125	7	5.6	0	0	01-04	100.0	100.0
RD Congo ^{P**}	-	-	-	-	-	-	-	-
Senegal	-	-	-	-	-	-	-	-
South Sudan ^P	-	-	-	-	-	-	-	-
Sudan ^T	2	0	0.0	0	0	01-04	100.0	100.0
Tanzania	3	3	100	0	0	01-03	100.0	100.0
Tchad ^T	38	2	5.3	1	0	01-03	100.0	100.0
Togo ^P	48	0	0.0	0	0	01-04	93.2	100.0
Uganda ^P	-	-	-	-	-	-	-	-
Total	844	42	5.0	12	4	01-04	50.9	99.7

FIGURE 3 – Inventory of meningitis occurrence in Africa during the first fourth weeks of year 2019. Data source : <https://www.who.int/emergencies/diseases/meningitis/meningitis-bulletin-4-2019.pdf?ua=1>

During the week from 2 to 9 February 2019 (Figure 4), very dry atmospheric conditions (relative humidity below 20 %) were observed over Chad, Niger, Mali, northern Burkina Faso, northern Nigeria, northern Cameroon, and northwestern Sudan. Relative humidity between 20 and 40 % prevailed over parts of Sudan, central and eastern Senegal, northern Guinea, and a small band over the Gulf of Guinea countries. Wet (relative humidity above 40 %) atmospheric conditions were recorded over the coast, Ethiopia, Somalia, Kenya and Somalia.

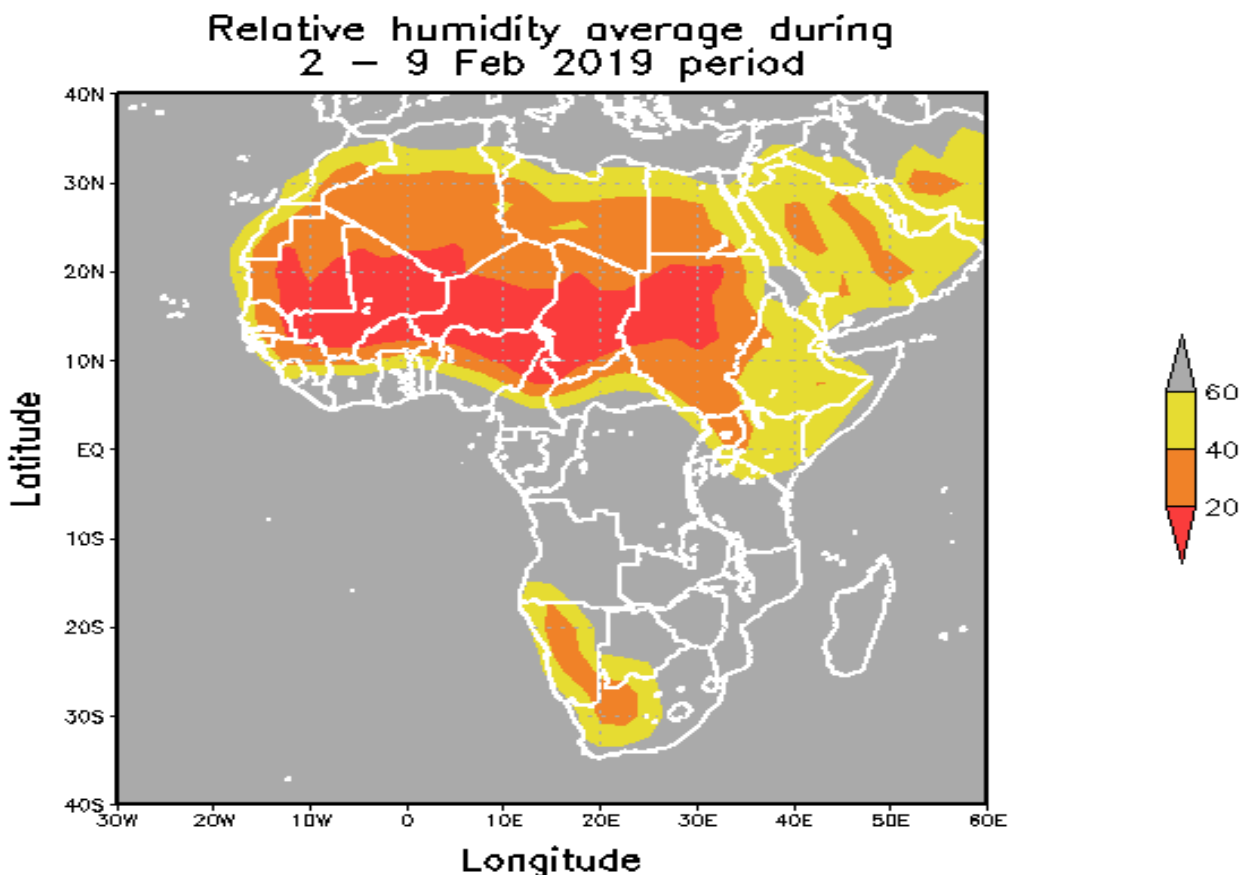


FIGURE 4 – Mean relative humidity (%) for the period from 2 - 9 February 2019.

The surface dust concentration observed on 9th February 2019 at 00 :00 UTC is shown in Figure 5. The figure reveals that low dust concentration ($50 \mu\text{g m}^3$) was observed over the Gulf of Guinea countries, except over the extreme northern parts Benin, Guinea, Nigeria, and northern Cameroun. Moderate dust concentration (between 50 and $150 \mu\text{g m}^3$) were located over Nigeria, southern Mali, southern Senegal, southern Sudan, central Niger, northern Cameroon, Central Africa, and southern Chad. The dust concentration between 150 and $300 \mu\text{g m}^3$ were observed mainly over Sahara desert with higher concentration over southern Mauritania, central Chad, Sudan, central Egypt, Sudan and Cape Verde.

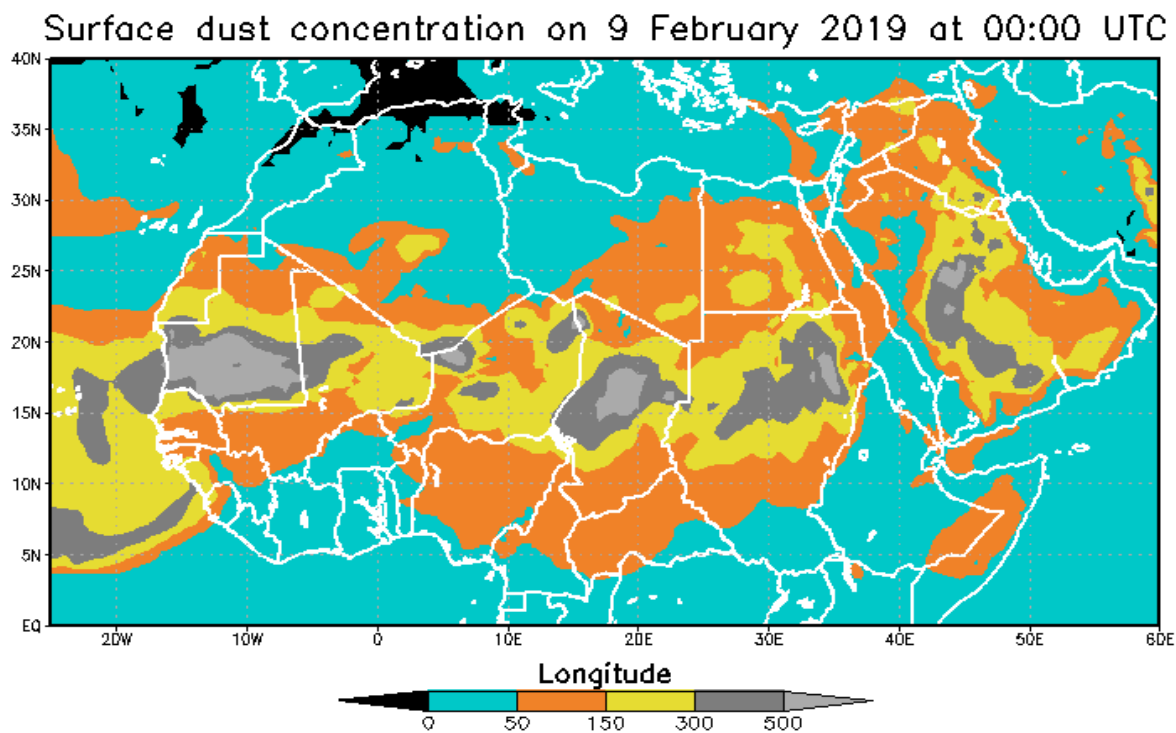


FIGURE 5 – Surface dust Concentration ($\mu\text{g m}^3$) estimated on February 9, 2019 at 00 :00 UTC from ECMWF reanalyses.

Figure 6 indicates that northerly winds were dominant over much of the meningitis belt. The highest values were observed over Senegal, Gambia, Guinea Bissau, northern Guinea, Burkina Faso, Mauritania, Mali, Niger, northern Nigeria, northern Cameroon, Chad, eastern Sudan and western Ethiopia. The ITD continues its migration over the north allowing the moistening of the Gulf of Guinea countries and the warming over its north part.

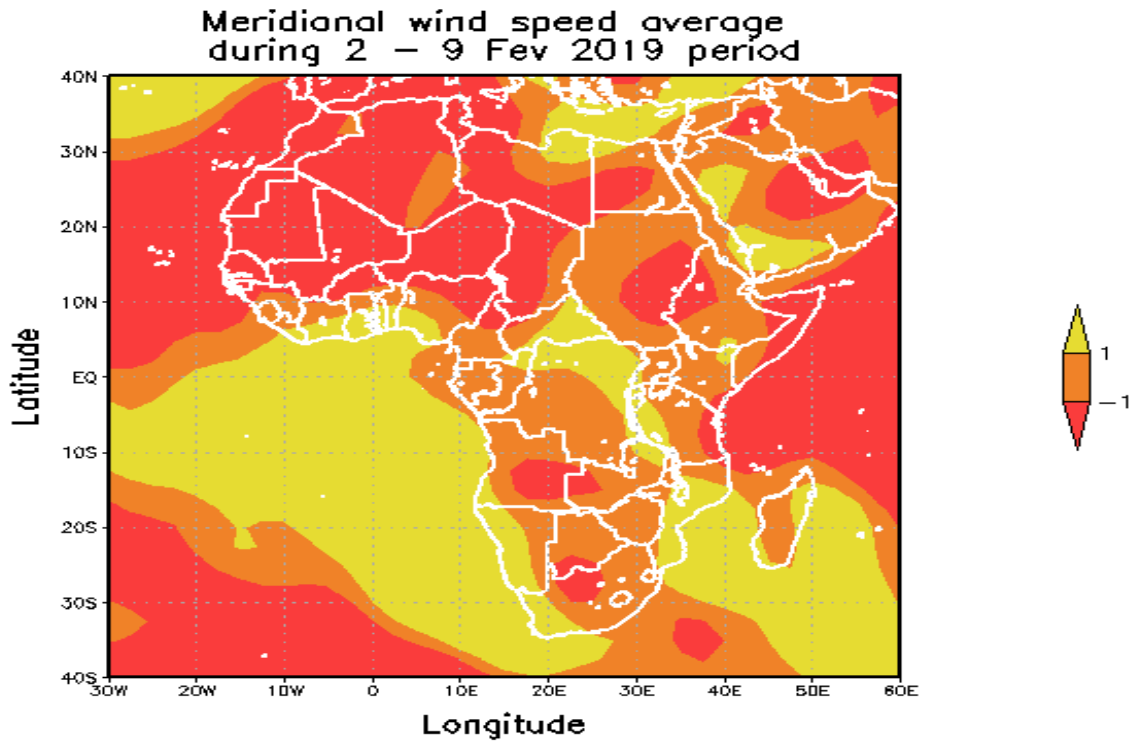
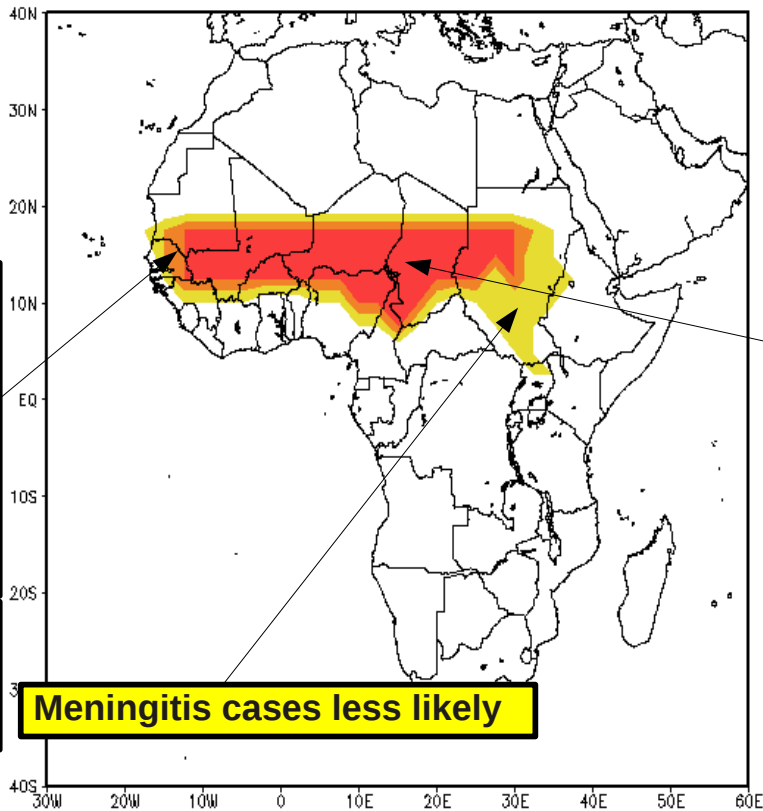


FIGURE 6 – Mean meridional wind speed (m s^{-1}) for the period from 2 to 9 February 2019.

VIGILANCE MAP FOR EMERGENCE OF MENINGITIS IN AFRICA
ISSUED ON FEBRUARY 12, 2019



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

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

Meningitis cases less likely