

Ten Day Climate Bulletin
n° 11 Year 2008
Dekad of 11 to 20 April, 2008

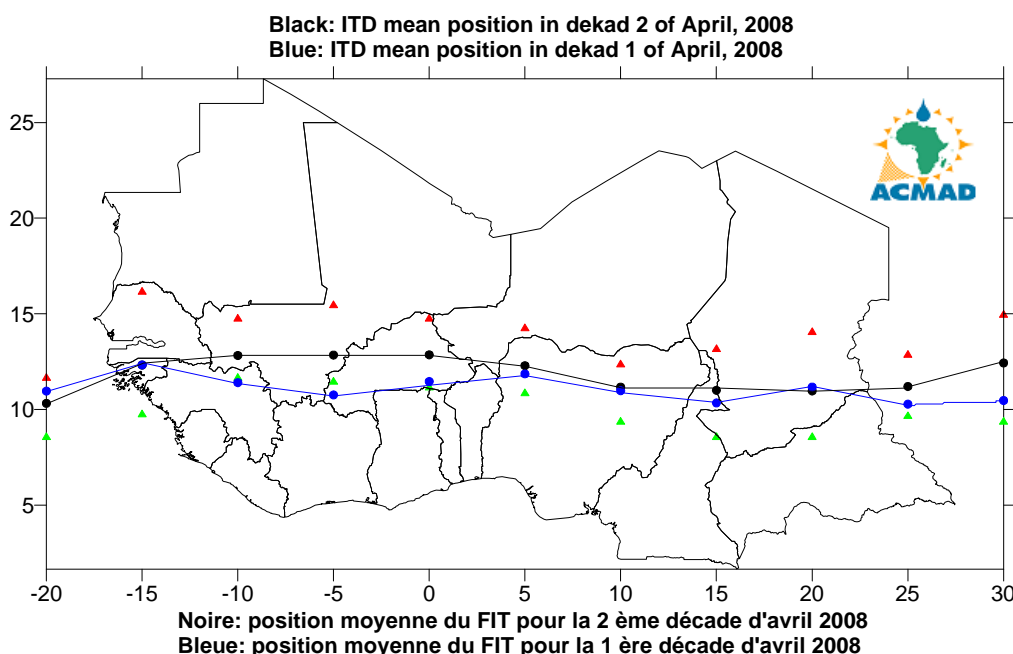
HIGHLIGHT: The north eastern parts of Greater Horn Africa (GHA) countries experienced significant relief from increased rainfall with the highest recorded over northeast Kenya, south Somalia and southern Ethiopia.

1. GENERAL SITUATION :

1.1 SURFACE

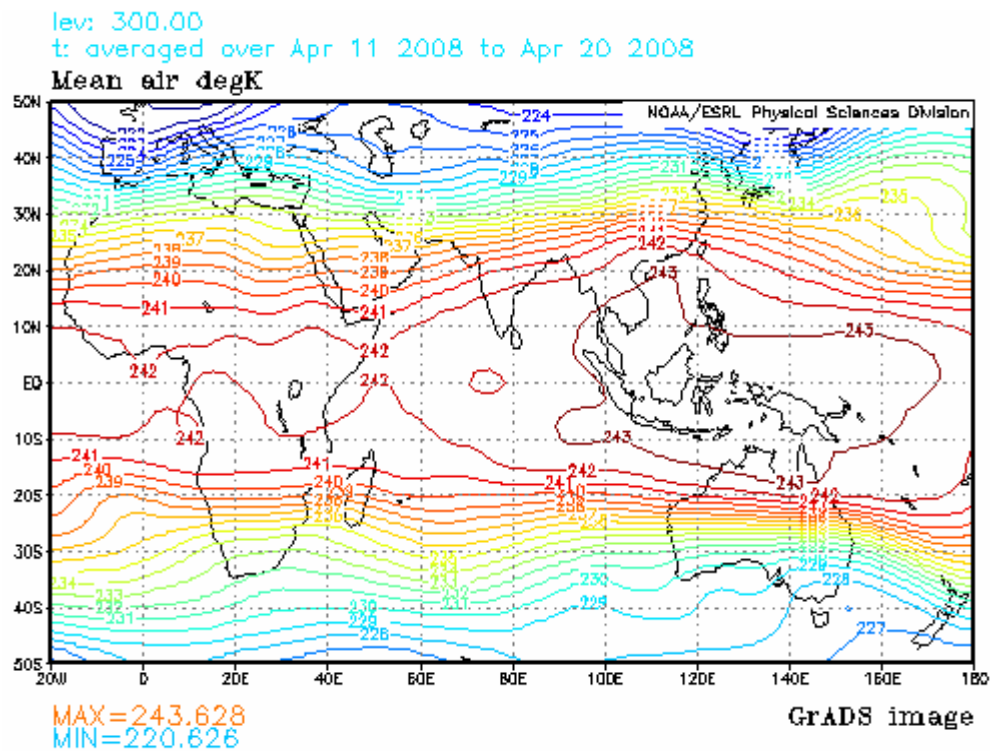
- **Azores high :** The Azores high pressure of 1025hPa was observed at 34°N/25°W with a ridge extended over south Morocco.
- **Saharan low :** The Saharan low of 1005hPa had no variation compared to the past dekad; but shifted towards the west. Its mean position was observed at 14°N/08°W with a trough extended over north Guinea, east Senegal, south Mauritania, central Mali, south Burkina Faso, southwest Niger and north Benin.
- **St. Helena high :** The St. Helena high pressure at 1025hPa weakened by 1hPa compared to the past dekad, but shifted slightly to the northeast. Its mean position was observed at 35°S/03°E with an extended ridge over southwest of South Africa.
- **Mascarene high :** The Mascarene high pressure at 1024hPa had no variation compared to the previous dekad but shifted to the northeast. Its mean position was observed at about 35°S/64°E with an extended ridge over Indian Ocean

Inter-Tropical Discontinuity (ITD) : Between the first and second dekad of April 2008, the ITD shifted towards the north particularly over western part of the Sahel and elsewhere remained quasi-stationary. It's mean position was observed at 10.3°N over longitude 20°W; at 12.3°N over north Guinea Bissau; at 12.8°N over southwest Mali; at 12.9°N over east Burkina Faso; at 12.3°N and 11.2°N over northwest and north Nigeria respectively; at 11.0°N over extreme northeast Cameroon and south Chad; at 11.2°N and 12.4°N over southwest and central Sudan respectively. The triangles in red represent the maximum northward displacement of the ITD while the green triangles represent its minimum displacement.



1.2 TROPOSPHERE

- **Monsoon** : Monsoon influx was weak (1 to 5 m/s) at 925hPa level over south Cameroon and moderate (5.5 to 12.5 m/s) over south Nigeria, north Benin, north Togo, Ghana, Côte d'Ivoire and Sierra Leone.
- **African Easterly Jet at 700hPa** : African Easterly Jet was observed with a mean speed of 18m/s during the second dekad of April, 2008. Compared to the past dekad, it had weakened by 1 m/s. The mean position of the axis at about 06°N over south Liberia up to about 24°W in Atlantic Ocean.
- **Thermal Index (TI)** : In the second dekad of April, 2008, the thermal index (TI) regime at 300hPa, map shown below, had a near threshold value of 242°K over Equatorial Africa about 10°N to 10°S that maintained some conditional instability associated with outbreaks of heavy rainfall particularly over some parts of GHA countries. The high TI regime with threshold value of 243°K maintained high conditional instability accompanied by heavy rainfall with floods over south Asia and north Australia resulting in suppressed rainfall over parts of central Africa and GHA countries.



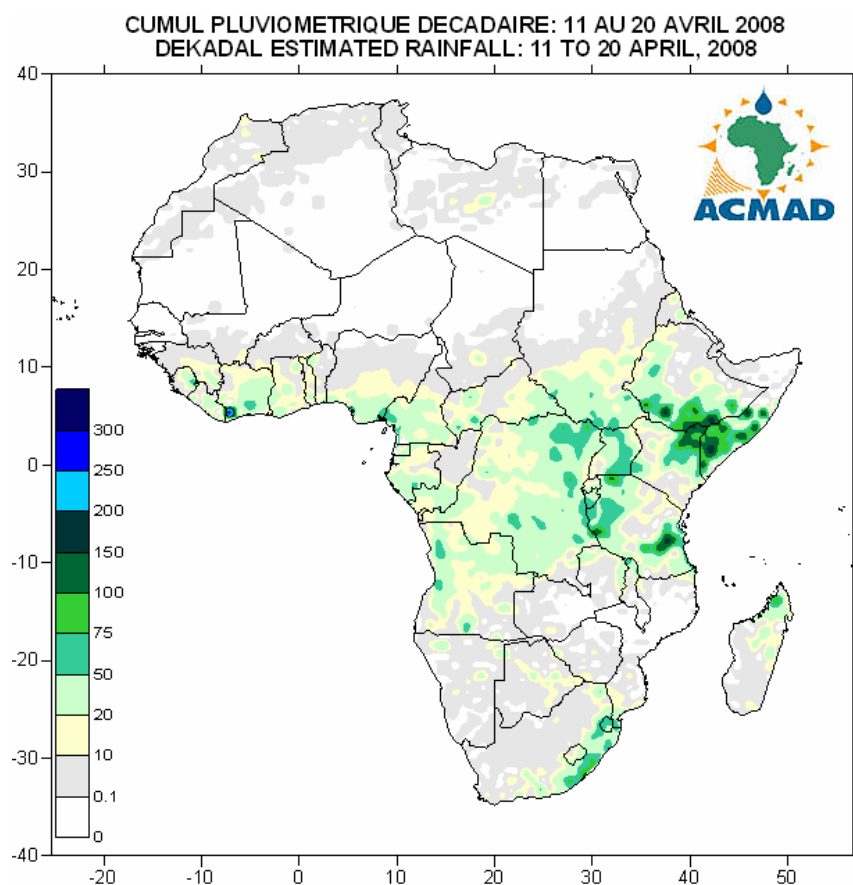
(Data Source: NOAA/NCEP)

2. RAINFALL AND TEMPERATURE SITUATION

2.1 RAINFALL

The rainfall estimate based on Satellite and Rain Gauge on the map below for second dekad of April, 2008 shows marked spatial and intensity rainfall decrease over Gulf of Guinea and central Africa countries with spatial and intensity rainfall increase GHA countries and Southern Africa countries. No significant change in rainfall pattern observed over the Sahel and northern Africa countries. In summary:

- **North Africa countries :** Dominated by decreased rainfall.
- **Gulf of Guinea countries :** The Gulf of Guinea countries had spatial and intensity rainfall decrease except over its western part where rainfall amount above 200mm was recorded over southern Côte d'Ivoire.
- **The Sahel :** No significant change in rainfall pattern over Sahel countries except over the extreme south of Burkina Faso and Chad where rainfall amounts ranging from 10 to 50mm were recorded.
- **Central Africa countries :** The central Africa countries experienced spatial and intensity rainfall decrease recording amounts ranging from 10mm to 75mm.
- **GHA countries :** The countries experienced spatial and intensity rainfall increase recording 10mm to 100mm with heaviest rainfall amounts
- of above 100mm over south Ethiopia, south Somalia, northeast Kenya and eastern Tanzania
- **Southern Africa countries :** Southern Africa countries experienced spatial and intensity rainfall increase recording localized rainfall amounts ranging from 10 to 100mm over southern Africa and northern Madagascar.



(Data Source: NOAA/NCEP)

2.2 OBSERVED DATA

The Table below shows moderate rainfall recorded over Seychelles Island, Manzini in Swaziland, Entebbe in Uganda and Dar-es-Salaam in Tanzania. The lowest temperatures of 6.8°C was recorded at Maseru in Lesotho with the highest temperature of above 42°C recorded at Khartoum, Niamey and Tombouctou in Sudan, Niger and Mali respectively.

N°	STATIONS	Précipitations (mm)	Nombre de jours de pluie	Température maxi moyenne (°C)	Température mini moyenne (°C)
1	Abidjan	0	0	33,0	26,8
2	Abuja	0	0	35,9	25,1
3	Accra	0	0	32,8	-
4	Addis Abéba	36	3	-	11,2
5	Agadez	0	0	39,8	23,5
6	Alger(Dar El-Beida)	0	0	22,2	9,0
7	Antananarivo	28	2	26,1	14,7
8	Antsiranana	4	1	31,3	22,6
9	Bamako-Senou	9	1	39,6	24,9
10	Bangui	0	0	32,7	22,3
11	Bilma	0	0	40,8	-
12	Bobo Dioulasso	0	0	38,6	26,7
13	Brazzaville	8	2	31,3	21,9
14	Casablanca	8	3	20,3	13,3
15	Cotonou	0	0	32,1	27,1
16	Dakar-Yoff	0	0	25,5	20,1
17	Dar-es-Salaam	64	7	29,3	22,8
18	Douala	0	0	32,5	23,9
19	Entebbe	78	6	24,9	17,5
20	Francistown	3	1	28,8	11,4
21	Freetown-Lungi	23	1	-	-
22	Johannesbourg	2	2	22,0	11,8
23	Khartoum	0	0	42,2	28,1
24	Kigoma	43	4	-	19,5
25	Kinshasa	0	0	31,7	21,4
26	Le Caire	0	0	30,7	17,3
27	Le Cap	8	2	19,5	14,5
28	Libreville	3	3	31,0	23,8
29	Lilongwe	0	0	27,3	14,6
30	Lomé	5	1	34,0	26,1
31	Luanda	0	0	29,7	22,9
32	Lusaka	0	0	27,1	13,2
33	Manzini	57	3	-	13,6
34	Maputo	45	2	30,4	19,3
35	Maseru	5	1	20,8	6,8
36	Maun	0	0	31,4	14,8
37	Mbeya	19	4	22,8	12,4
38	Nairobi	6	2	25,0	14,0
39	Nampula	0	0	30,0	19,2
40	N'Djamena	0	0	41,6	25,5
41	Niamey-Aéroport	0	0	42,2	26,1
42	Nouakchott	0	0	35,1	21,1
43	Ouagadougou	0	0	40,6	27,0
44	Plaisance	47	5	28,9	22,2
45	Sal	0	0	25,4	20,5
46	Seretse Khama Aéro	0	0	25,8	-
47	Seychelles	73	5	31,1	25,1
48	Tamanrasset	0	0	32,2	16,1
49	Toalagnaro	0	0	28,8	21,1
50	Tombouctou	0	0	42,7	-
51	Tripoli	0	0	30,9	15,3
52	Tunis	0	0	23,7	13,9
53	Windhoek	3	4	25,5	11,5
54	Zinder	0	0	40,0	25,7

NOTE : 0 means no rain;

- means no temperature data available

Data Source: ACMAD / GTS

3. OUTLOOK FOR DEKAD (01st – 10th May, 2008)

3.1 RAINFALL

The ITD is expected to shift slightly northwards. The temperatures will continue to rise while moisture is expected to penetrate over southern parts of the Sahel countries. The persistence of high TI regime over Equatorial Africa spreading northward will maintain high conditional instability associated with heavy rainfall over parts of central Africa and parts of GHA countries. The southern Africa countries will experience some rainfall decrease. In summary:

- **North Africa countries:** are expected to continue experiencing rainfall decrease recording 10-20mm of rainfall.
- **The Sahel countries:** The Sahel countries will experience rising temperatures with light rainfall 10-20mm.
- **Gulf of Guinea countries:** Guinea, Guinea Bissau, Sierra Leone, Liberia, Ghana, Togo, Benin Nigeria and Cameroon will record some rainfall increase recording 20mm to 100mm with isolated peaks of 150mm.
- **Central Africa countries :** Gabon, Central Africa Republic, north Democratic Republic of Congo, Congo and north Angola will experience rainfall increase recording amounts ranging from 20mm to 150mm with peaks of about 200mm .
- **GHA countries :** The GHA countries are expected to experience slight increase recording rainfall amounts of 20mm to 100mm with some parts recording heavy rainfall peaks between 100mm to 150mm.
- **Southern Africa countries :** The countries will record rainfall decrease with few parts recording 10mm to 20mm.

3.1 TEMPERATURE

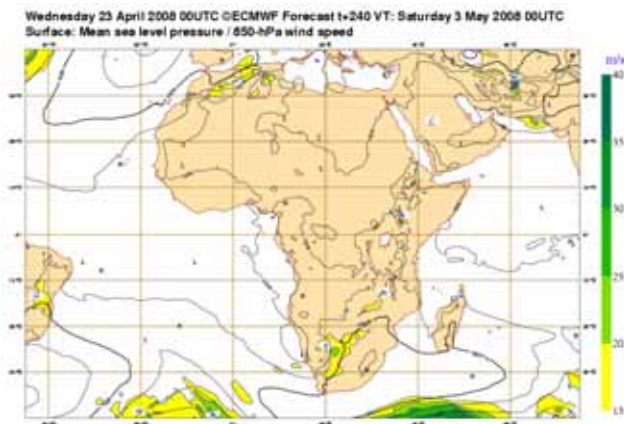
The forecast map below shows that most of countries north of Equator will record the highest temperatures with South Africa recording the lowest temperatures. The highest forecast temperatures on the map below range from 25°C to 30°C in orange and red colours respectively. However, most of the Continent will be expected to record 20°C and above as depicted on the map implying that the Continent's temperatures will be in the range of 20°C to 30°C.

3.2 SOIL MOISTURE

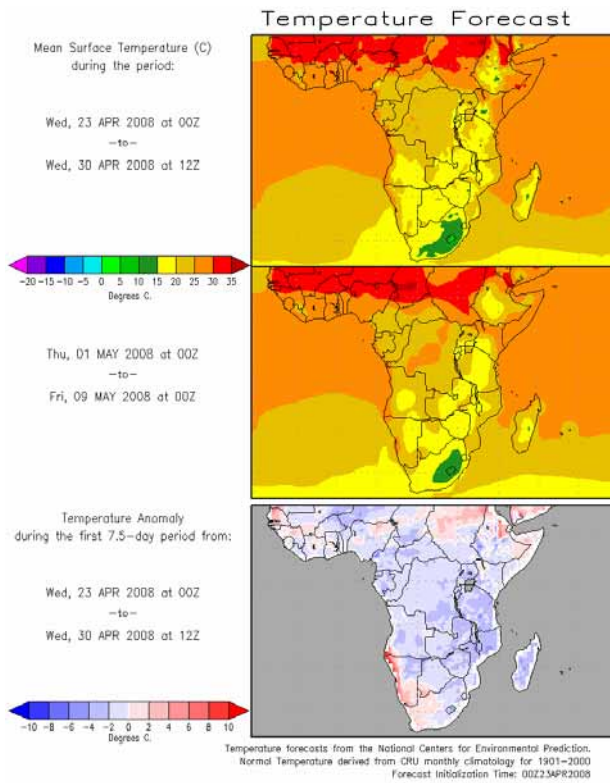
The outlook on soil moisture, map shown below includes the initial soil moisture and the forecast soil moisture change over the next 7 days. The soil moisture change and precipitation relationship is discernable from the maps below. The areas forecast to have highest soil moisture increase are confined within the West Africa countries, central Africa countries, the Central Africa Republic, northern Democratic Republic of Congo, Congo and parts of GHA countries.

3.3 IMPACTS

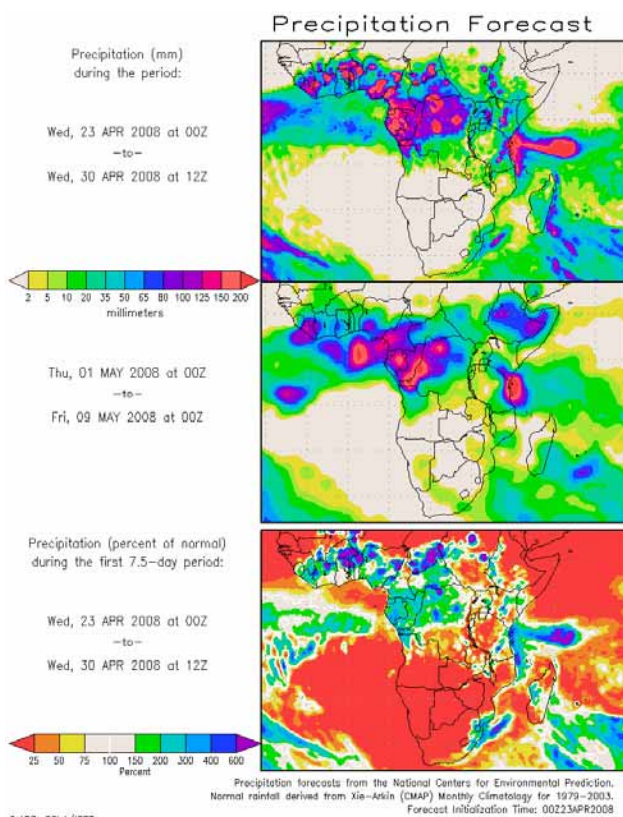
- **Health:** The incidences of malaria and other diseases are higher in areas with high temperatures during periods of heavy rainfall. The temperatures in the range of 20°C to 28°C with high rainfall (high humidity) favour the survival of the vector and development of the parasite in the vector resulting in high incidences of malaria even in low prevalence areas. The parts of Gulf of Guinea countries, central Africa countries and , GHA countries will experience rainfall increase and with the prevailing high temperatures the survival of parasite vector will be high resulting in higher incidences of vector borne diseases such as malaria epidemic. The increasing cases of meningitis in the West Africa countries is now posing a major concern and health authorities are struggling to contain the epidemic. Continued health care should be maintained to protect lives of the vulnerable communities. The dry and dusty winds from Sahara observed in varying magnitudes will not only continue to reduce the visibility, but will be associated with several ailments such as flu, respiratory infections (bronchitis, pneumonia), asthma and meningitis among others.
- **Agriculture and food security:** While we consider the importance of well documented onsets and cessations dates of seasonal rainfall in our countries it is equally important to carry out cost benefit analysis on determination and applications of appropriate planting dates in order to take advantage of soil moisture availability in a shortened crop growing season. The drought-tolerant crops can be grown in zones where the prevailing soil moisture is the climate constraint on yield. The crop varieties that are higher yielding, more drought resistant, earlier maturing, disease and pest tolerant are recommended in these moisture constrained zones for communities' sustained food security and adaptation. However, there is a need to invest in higher yielding crops during a good rainfall season for example forecast provided by regional climate outlook forum (COF) such as the GHACOF and National Meteorological Services (NMSs).



Source : ECMWF

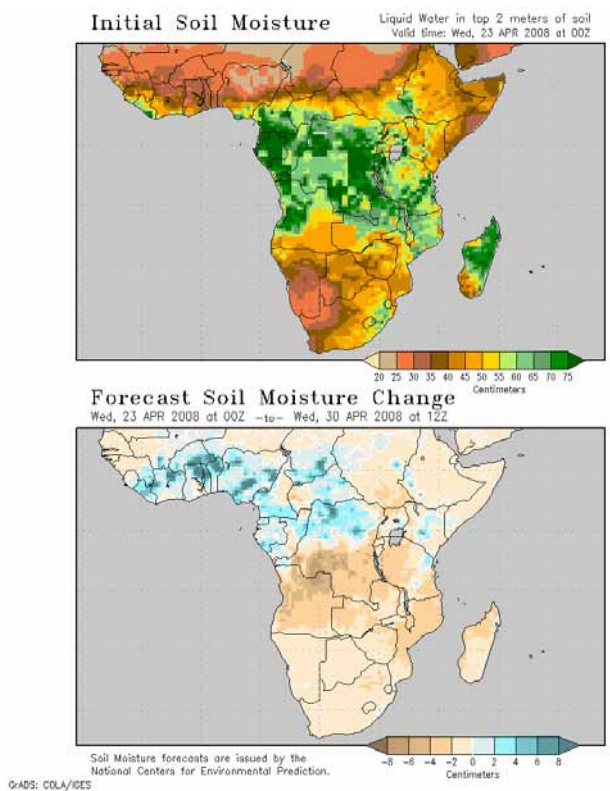


Source : COLA



GRADS: COLA/IGES

Source : COLA



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