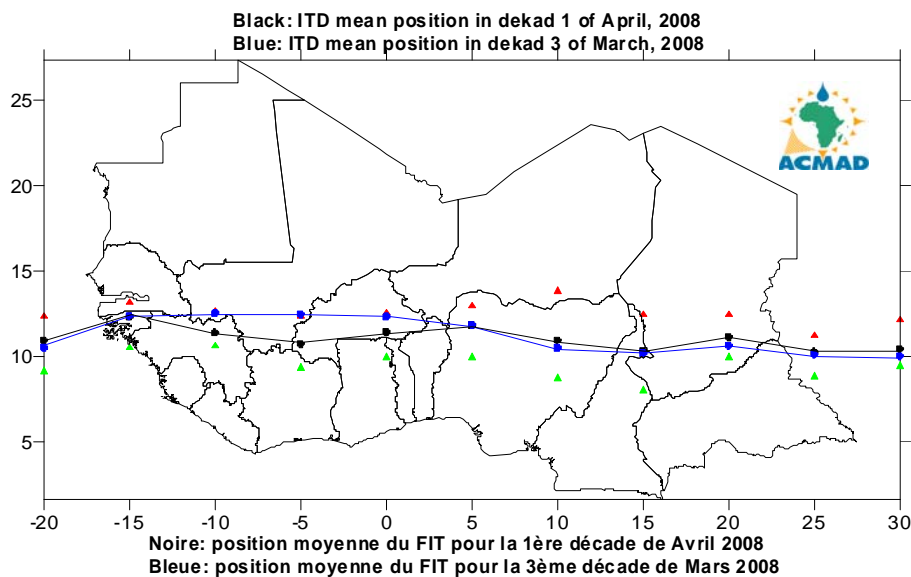


HIGHLIGHT: The Gulf of Guinea countries experienced significant relief from increased rainfall during this dekad. However, some parts of GHA had continuous rainfall deficits particularly over northeastern GHA Arid Semi-Arid Lands (ASALs) causing critical water shortages for people and livestock.

1. GENERAL SITUATION :

1.1 SURFACE

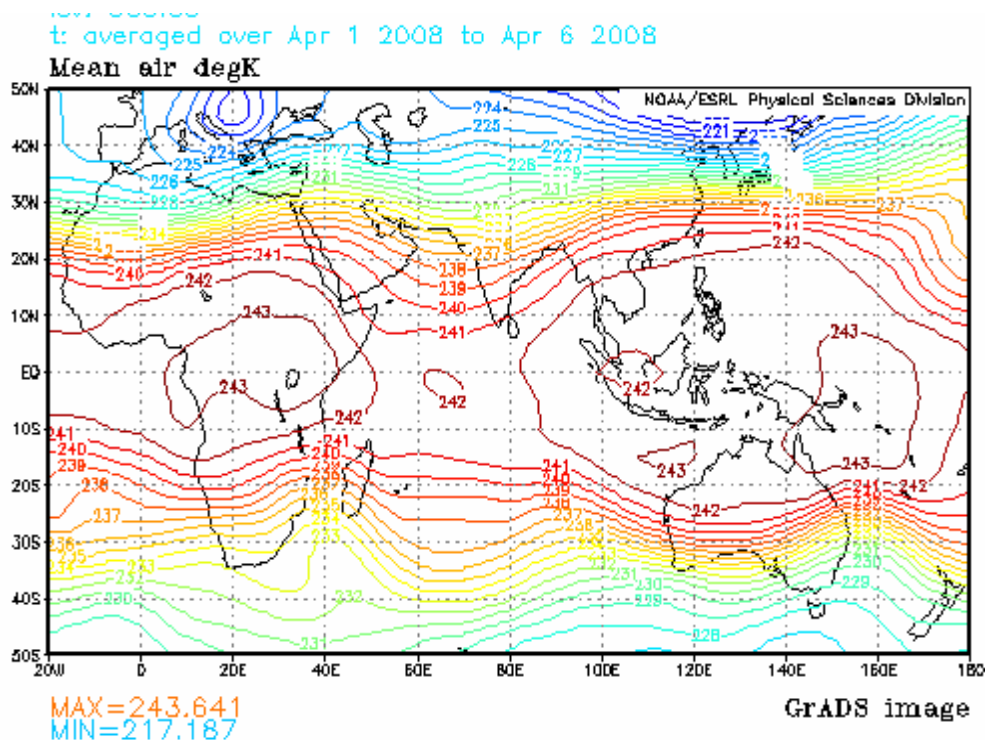
- **Azores high :** The Azores high pressure shifted to the west compared and its ridge was not affecting Africa from 05 April 2008 to the end of the dekad.
- **Saharan low :** The Saharan low of 1005hPa had no variation compare to the past dekad but shifted towards the northeast. Its mean position was observed at 15°N/05°E with a trough extended over east Senegal, south Mauritania, central Mali, north Niger, south Chad, north Cameroon, south Nigeria, south Benin, south Togo, south Ghana, north Guinea, and north Côte d'Ivoire.
- **St. Helena high :** The St. Helena high pressure at 1026hPa strengthened by 2hPa compared to the past dekad, but shifted slightly to the northwest. Its mean position was observed at 37°S/10°W with an extended ridge over Atlantic Ocean
- **Mascarene high :** The Mascarene high pressure at 1024hPa had no variation compared to the previous dekad but shifted to the northwest. Its mean position was observed at about 37°S/50°E with an extended a ridge over east of south Africa.
- **Inter-Tropical Discontinuity (ITD) :** Between the first dekad of April and third dekad of March 2008, the ITD shift slightly over southern part of western Sahel with a quasi-stationary over its eastern part. It's mean position was observed at 11.0°N over longitude 20°W; at 12.3°N over north Guinea Bissau; at 11.4°N over northeast Guinea; at 10.8°N and 11.5°N over southwest and southeast Burkina Faso respectively; at 11.9°N and 11.0 over northwest and east Nigeria respectively; at 11.0.3°N over north Cameroon; at 11.2°N over southeast Chad; at 10.3°N and 10.5°N over southwest and south 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 moderate (5.5 to 12.5 m/s) at 925hPa level over south Liberia and south Côte d'Ivoire.
- **Mid level winds** : Moderate easterly mid level winds (19 m/s) was observed at 700hPa during the third first dekad of April, 2008. Compare to the past dekad, its strengthened by 1 m/s. The mean position of the axis stationary at about 07°N over off cost Sierra Leone from 14.4°W up to 24.5°W in the Atlantic Ocean.
- **Thermal Index (TI)** : In the first dekad of April, 2008, the thermal index (TI) regime at 300hPa, map shown below, had threshold value of 243°K over Equatorial Africa about 10° N and 10°S. The high TI regime of 243°K maintained high conditional instability accompanied by heavy rainfall with floods in some parts. However, parts of GHA countries experienced suppressed rainfall due to low SSTs in the western Indian Ocean.



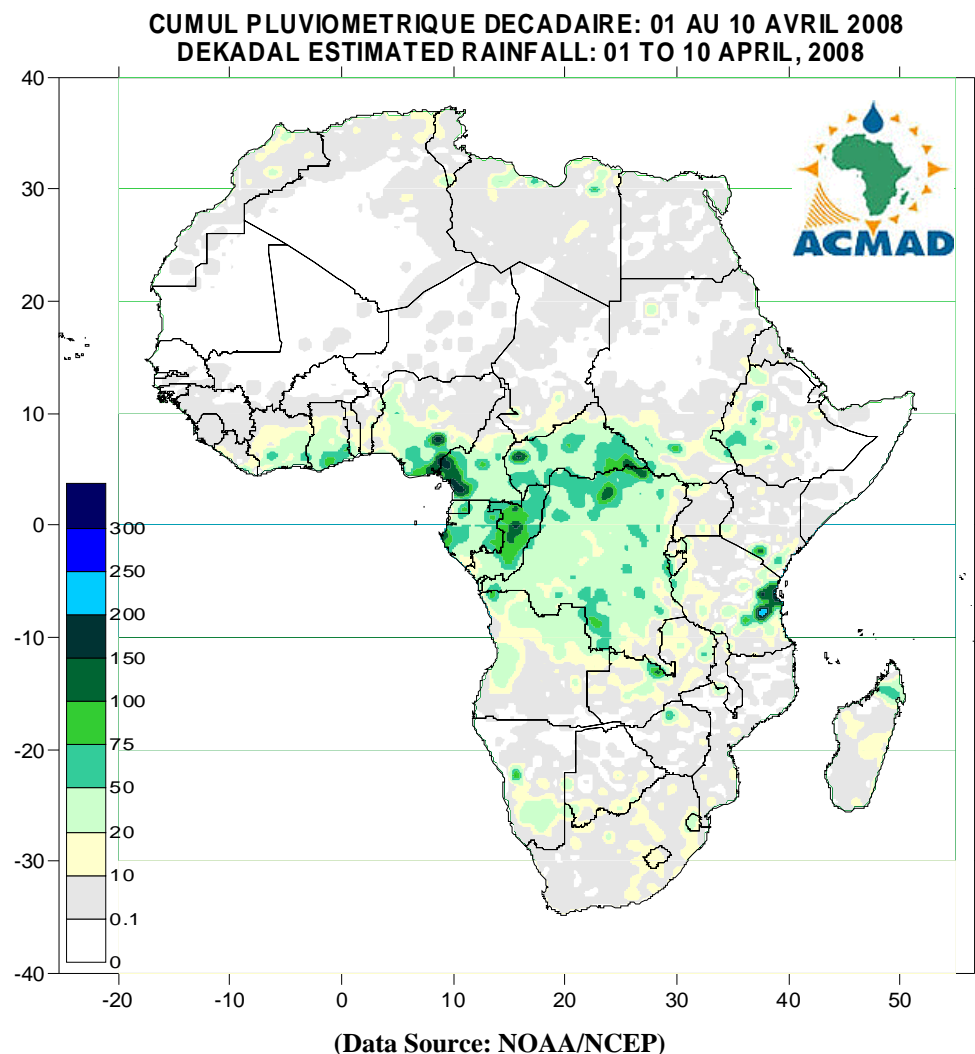
(Data Source: NOAA/NCEP)

2. RAINFALL AND TEMPERATURE SITUATION

2.1 RAINFALL

The rainfall estimate based on Satellite and Rain Gauge on the map below for first dekad of April, 2008 shows marked spatial and rainfall increase over Gulf of Guinea; rainfall intensity increase over central Africa; spatial and intensity decrease over Great Horn Africa countries and Southern Africa countries; no significant change rainfall pattern over Sahel and northern Africa. In summary:

- **North Africa countries** : No significant change but recorded localized rainfall amount ranging between 10 to 75mm were recorded over north Morocco, Algeria Tunisia and Libya.
- **Gulf of Guinea countries** : The Gulf of Guinea countries had spatial and rainfall intensity increase recording rainfall amount between 10mm to about 100mm with some peaks of above 150 mm over southeastern Nigeria.
- **The Sahel** : No significant change in rainfall pattern over Sahel countries.
- **Central Africa countries** : The central Africa countries experienced slight increase in rainfall intensity recording amounts ranging from 10mm to 100mm with isolated peaks of about 150 mm over Cameroon, Central Africa Republic and Congo.
- **GHA countries** : The countries experienced spatial rainfall and intensity decrease recording 10mm to 75mm with heaviest rainfall amount of about 200mm over eastern Tanzania
- **Southern Africa countries** : Southern Africa countries experienced spatial and rainfall intensity decrease recording localized rainfall amounts ranging from 10 to 75mm.



2.2 OBSERVED DATA

The Table below shows heavy rainfall recorded over Dar-Es-Salaam in Tanzania and Entebbe in Uganda while the lowest and highest temperatures ranging from 8.1°C to 40.8°C were recorded at Maseru and Khartoum in Lesotho and Sudan respectively.

N°	STATIONS	Précipitations (mm)	Nombre de jours de pluie	Température maxi moyenne (°C)	Température mini moyenne (°C)
1	Abidjan	50	3	32,5	25,0
2	Abuja	3	1	35,3	25,6
3	Accra	0	0	32,3	-
4	Addis Abéba	36	3	-	13,1
5	Agadez	0	0	36,4	-
6	Alger(Dar El-Beida)	18	2	23,6	9,2
7	Antananarivo	19	3	26,4	15,4
8	Antsiranana	0	0	30,4	22,8
9	Bamako-Senou	0	0	39,0	24,0
10	Bangui	12	2	30,6	22,3
11	Bissau	0	0	34,0	-
12	Bobo Dioulasso	0	0	37,8	-
13	Brazzaville	35	1	32,1	23,1
14	Casablanca	20	2	24,4	13,8
15	Cotonou	0	0	31,7	25,8
16	Dakar-Yoff	0	0	28,0	21,3
17	Dar-es-Salaam	120	6	29,4	22,5
18	Douala	92	3	31,8	24,4
19	Entebbe	107	3	27,2	19,7
20	Francistown	0	0	29,8	11,9
21	Johannesbourg	5	2	22,7	11,6
22	Khartoum	0	0	40,8	24,2
23	Kigoma	67	4	-	19,2
24	Kinshasa	46	3	31,7	22,7
25	Le Caire	0	0	26,2	14,1
26	Le Cap	4	3	20,3	14,8
27	Libreville	43	5	30,4	24,4
28	Lilongwe	2	1	26,2	13,2
29	Lomé	2	1	33,6	25,6
30	Luanda	0	0	29,3	-
31	Lusaka	1	1	26,6	13,3
32	Manzini	27	2	-	16,8
33	Maputo	4	1	29,6	19,3
34	Maseru	34	2	22,2	8,1
35	Maun	2	1	-	16,7
36	Mbeya	43	4	22,0	12,6
37	Nairobi	4	2	25,4	14,2
38	Nampula	9	1	30,2	18,7
39	N'Djamena	0	0	38,3	25,5
40	Niamey-Aéroport	0	0	39,1	23,3
41	Nouakchott	0	0	37,2	22,8
42	Ouagadougou	0	0	39,0	24,2
43	Plaisance	8	3	28,9	22,3
44	Sal	0	0	27,1	21,0
45	Seretse Khama Aéro	18	1	28,9	13,1
46	Seychelles	63	4	31,1	26,0
47	Tamanrasset	0	0	27,2	14,0
48	Toalagnaro	13	5	27,8	21,1
49	Tombouctou	0	0	37,2	-
50	Tripoli	1	1	27,8	11,8
51	Tunis	2	3	22,8	13,1
52	Windhoek	11	4	26,1	13,4

NOTE : 0 means no rain;

- means no temperature data available

Data Source: ACMAD/GTS

3. OUTLOOK FOR DEKAD (21st – 30th APRIL, 2008)

3.1 RAINFALL

The ITD is expected to shift slightly northwards. The temperatures will rise while the dry and dusty conditions associated with Harmattan will be reduced significantly over the Sahel countries. The persistence of threshold TI regime value of 243°K over Equatorial Africa spreading northward will maintain high conditional instability associated with heavy rainfall over central Africa and parts of GHA countries. The southern Africa countries will experience some rainfall decrease. In summary:

- **North Africa countries:** Morocco, Algeria, Tunisia, Libya and Egypt are not expected to record slight increase 10-20mm of rainfall.
- **The Sahel countries:** The Sahel countries will experience rising temperatures with isolated light rainfall patches.
- **Gulf of Guinea countries:** Guinea, Guinea Bissau, Sierra Leone, Liberia, Ghana, Togo, Benin, Nigeria and Cameroon will record some rainfall increase recording 10mm to 100mm with isolated peaks of 150mm.
- **Central Africa countries :** Gabon, Central Africa Republic, south Democratic Republic of Congo, Congo and north Angola will experience rainfall increase recording amounts ranging from 20mm to 100mm with peaks of 150mm .
- **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.

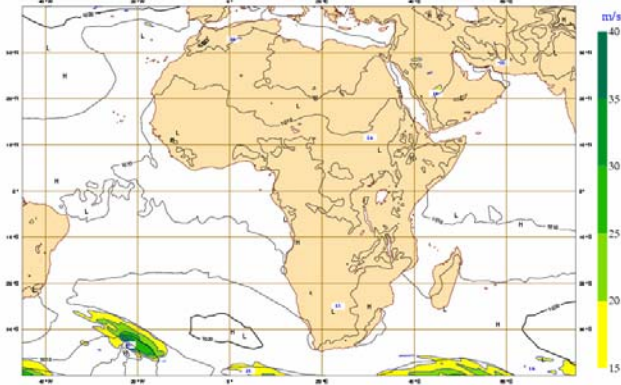
3.2 SOIL MOISTURE

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 GHA countries, central Africa countries and parts of Gulf of Guinea 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 relative 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 GHA and central Africa countries are experiencing 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. 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, 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. 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).

Monday 21 April 2008 00UTC @ECMWF Forecast t+240 VT: Thursday 1 May 2008 00UTC
 Surface: Mean sea level pressure / 850-hPa wind speed

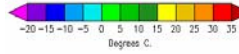


Source : ECMWF

Temperature Forecast

Mean Surface Temperature (C) during the period:

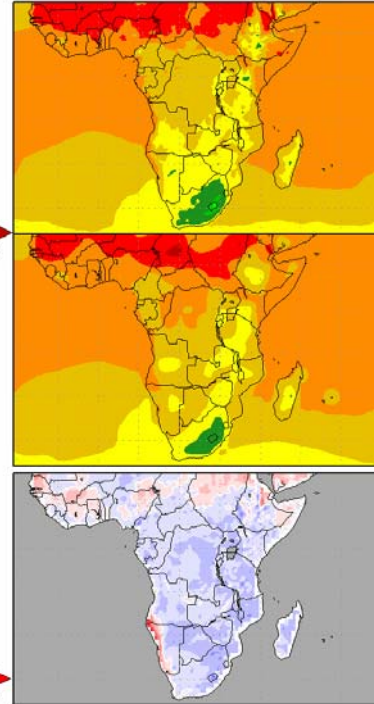
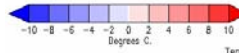
Mon, 21 APR 2008 at 00Z
 -to-
 Mon, 28 APR 2008 at 12Z



Tue, 29 APR 2008 at 00Z
 -to-
 Wed, 07 MAY 2008 at 00Z

Temperature Anomaly during the first 7.5-day period from:

Mon, 21 APR 2008 at 00Z
 -to-
 Mon, 28 APR 2008 at 12Z



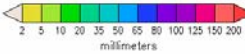
Temperature forecasts from the National Centers for Environmental Prediction. Normal Temperature derived from CRU monthly climatology for 1901-2000. Forecast Initialization Time: 00Z21APR2008

Source : COLA

Precipitation Forecast

Precipitation (mm) during the period:

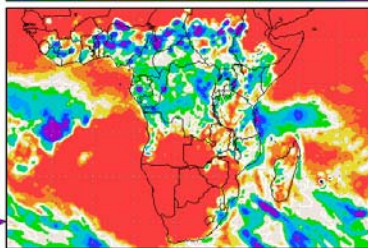
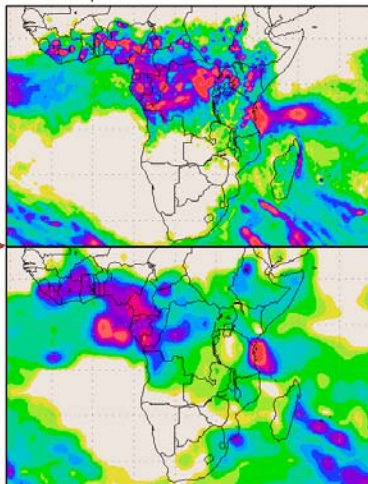
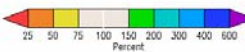
Mon, 21 APR 2008 at 00Z
 -to-
 Mon, 28 APR 2008 at 12Z



Tue, 29 APR 2008 at 00Z
 -to-
 Wed, 07 MAY 2008 at 00Z

Precipitation (percent of normal) during the first 7.5-day period:

Mon, 21 APR 2008 at 00Z
 -to-
 Mon, 28 APR 2008 at 12Z



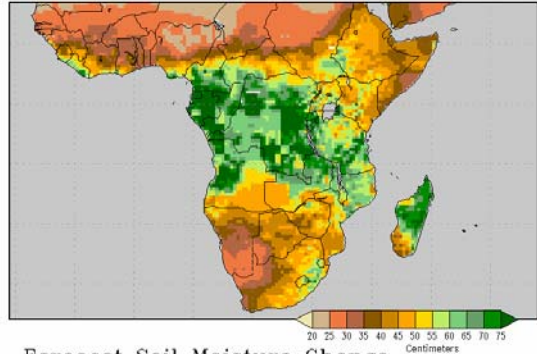
Precipitation forecasts from the National Centers for Environmental Prediction. Normal rainfall derived from Xie-Arkin (CMAP) Monthly Climatology for 1979-2003. Forecast Initialization Time: 00Z21APR2008

GRADS: COLA/IGES

Source : COLA

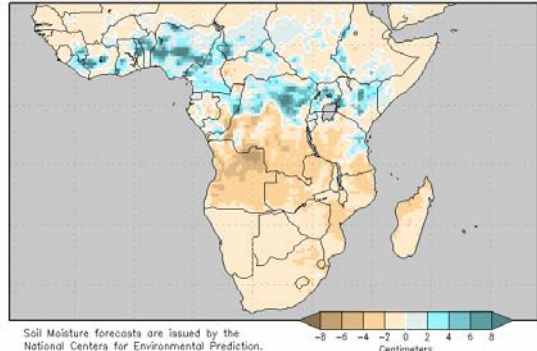
Initial Soil Moisture

Liquid Water in top 2 meters of soil
 Valid time: Mon, 21 APR 2008 at 00Z



Forecast Soil Moisture Change

Mon, 21 APR 2008 at 00Z -to- Mon, 28 APR 2008 at 12Z



Soil Moisture forecasts are issued by the National Centers for Environmental Prediction.

GRADS: COLA/IGES

Source : COLA