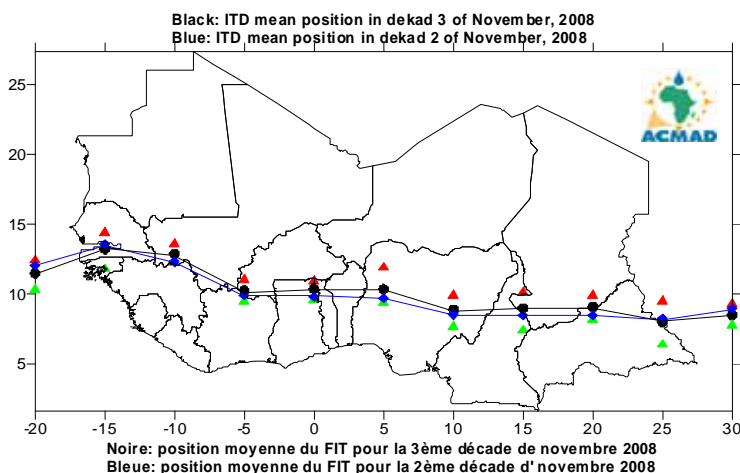


**HIGHLIGHT:** The highest rainfall amount of about 300mm associated with high TI characterized by high conditional instability and relatively high humidity was recorded over eastern Angola.

## 1. GENERAL SITUATION :

### 1.1 SURFACE

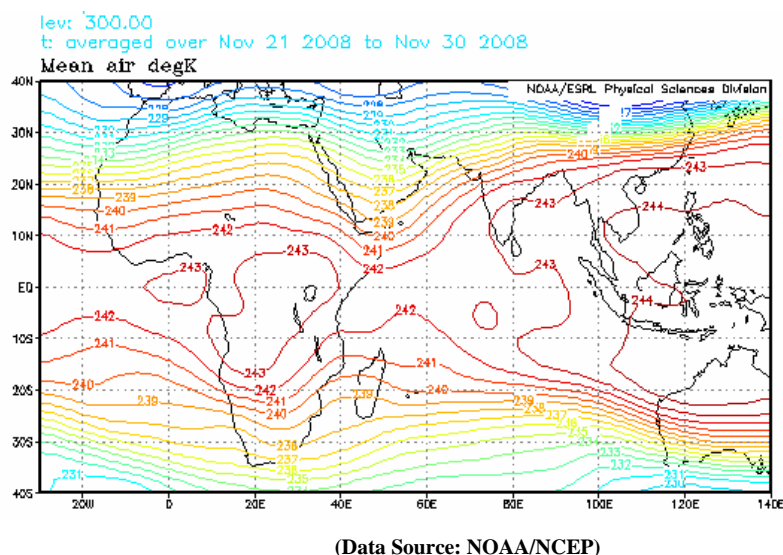
- **Azores high:** Pressure at 1036hPa maintained its intensity compared to the last dekad and shifted northwest. Its mean position was observed at 47°N/26°W with a ridge over south Morocco, Mauritania and north Mali.
- **St. Helena high:** Pressure at 1032hPa strengthened slightly by 3hPa and shifted southwest at 38°S/25°W with an extended ridge over south Atlantic Ocean.
- **Mascarene high:** Pressure at 1024hPa maintained its intensity compared to the previous dekad and shifted northeast at 38°S/56°E with an extended ridge over Indian Ocean.
- **Saharan thermal low:** Pressure at 1009hPa maintained its intensity compared to the past dekad and shifted east at 10°N/09°E with an extended trough over east Burkina Faso, north Ghana, southwest Niger, Benin, Nigeria and south Chad.
- **Inter-Tropical Discontinuity (ITD) :** Between the second and third dekad of November, 2008, the ITD had slight southward displacement over the western part of the Sahel and slight northward movement over northern and central part of Gulf of Guinea countries located east of the meridian 0° including Ghana and Côte d'Ivoire. It's mean position was observed at 11.5°N over longitude 20°W; at 13.2°N over south Senegal; at 12.9°N over extreme southwest Mali; at 10.3°N over extreme southwest Burkina Faso; at 10.4°N over extreme northeast Ghana; at 10.4°N and 8.9°N over west and southeast Nigeria respectively; at 9.0°N over extreme south Chad; at 8.0°N and 8.5°N over extreme southwest and south Sudan respectively.



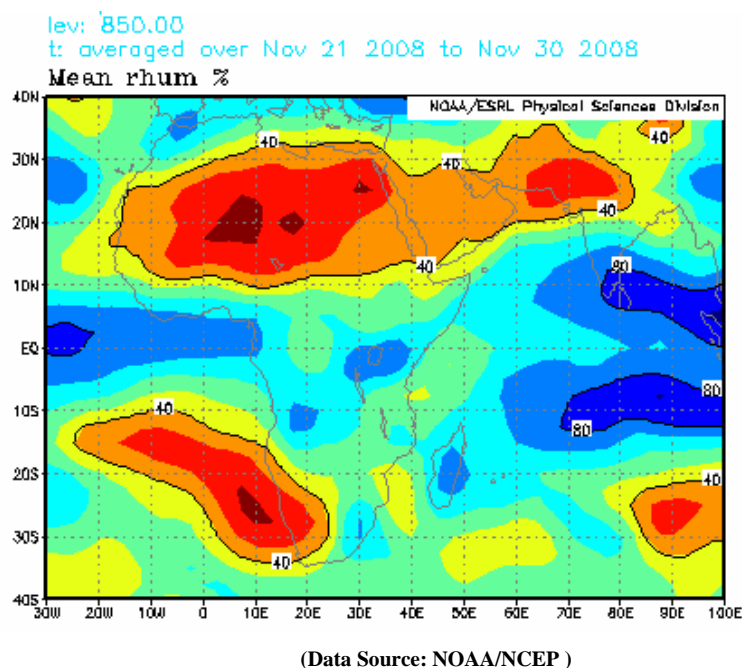
*The red and green triangles represent the max. and min. displacements of the ITD respectively*

## 1.2. TROPOSPHERE

- **Monsoon** : Monsoon influx was weak (1 to 5 m/s) at 925hPa level over Sierra Leone, Liberia, southeast Nigeria and south Cameroon.
- **Thermal Index (TI)** : In the third dekad of November, 2008, the thermal index (TI) regime at 300hPa, map shown below, had threshold TI regime value of 243°K over major part of central Africa countries, parts of GHA countries and north western part of Southern Africa countries associated with heavy rainfall over areas characterized by high relative humidity as observed below.



- **Relative Humidity (RH)**: The 850hPa map below shows high RH (>70%) in the third dekad of November, 2008 over extreme southern part of Gulf of Guinea countries, parts of central Africa, western parts of GHA countries and eastern Madagascar. The Sahara, the Sahel countries and the western part of South African countries experienced dry conditions with the lowest RH (<40%).

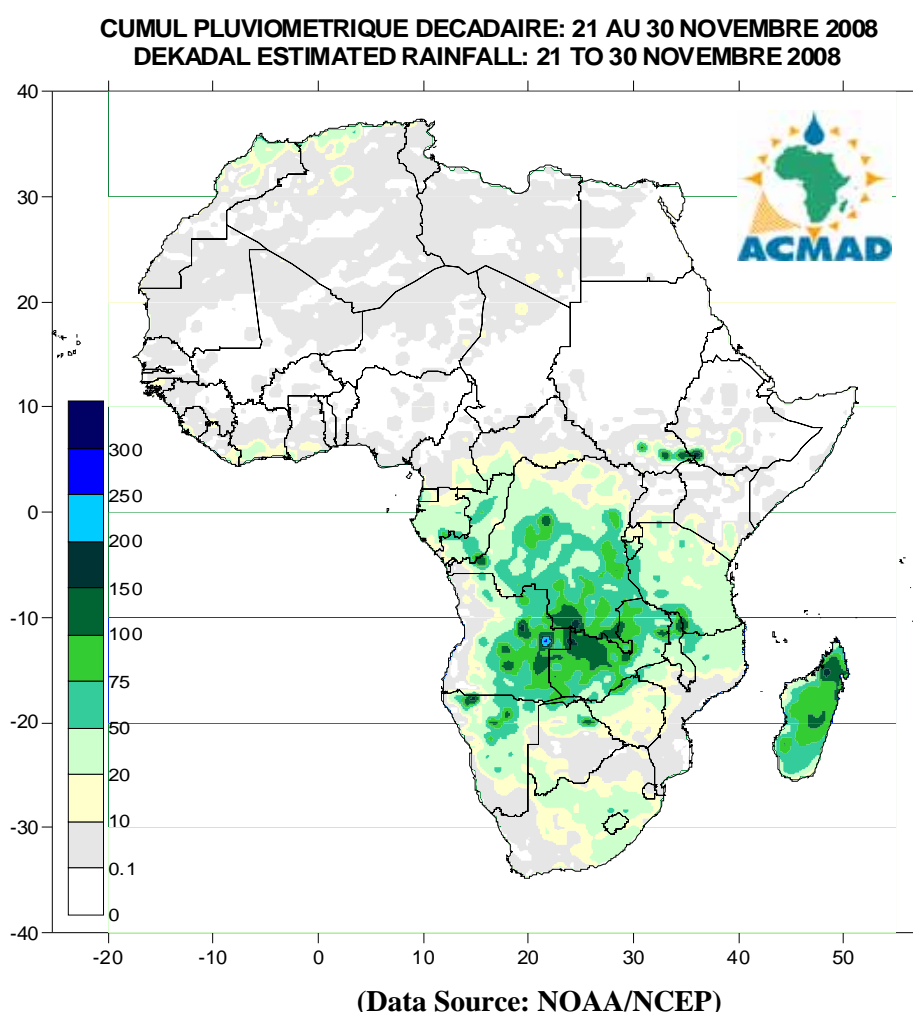


## 2. RAINFALL AND TEMPERATURE SITUATION

### 2.1 RAINFALL

The rainfall estimate based on Satellite and Rain Gauge on the map below for the third dekade of November, 2008 shows spatial rainfall decrease over Gulf of Guinea countries while Southern and northern African countries experienced spatial rainfall increase. In summary:

- **North Africa countries** : experienced slight spatial rainfall increase recording amounts ranging from 10mm to 50mm over extreme north Morocco and Algeria.
- **The Sahel** : experienced generally dry and dusty condition.
- **Gulf of Guinea countries** : had spatial and intensity of rainfall decrease recording amounts ranging from 10mm to 50mm over the coastal zone of Liberia, Côte d'Ivoire, Ghana and Cameroon.
- **Central Africa countries** : had rainfall amounts ranging from 10mm to 200mm with peaks of about 300mm over eastern Angola.
- **GHA countries** : experienced slight spatial and intensity of rainfall decrease recording amounts ranging from 10mm to 100mm with localized peaks ranging between 100 to 200mm over southeast Sudan, southwest Ethiopia and extreme south Tanzania.
- **Southern Africa countries** : had spatial rainfall increase with intensity decrease over the western part recording amounts ranging from 10mm to 75mm intensifying to about 200mm over Zambia, Malawi and Madagascar.



## 2.2 OBSERVED DATA

The Table below shows heavy rainfall recorded over Plaisance in Mauritius, Maseru in Lesotho, Brazzaville in Congo and Douala in Cameroon. The lowest temperature of 9.0°C was recorded at Alger (Dar El Beida) in Algeria while the highest temperature of 39.2°C was recorded at N'Djamena in Chad..

N°	STATIONS	Précipitations (mm)	Nombre de jours de pluie	Température maxi moyenne (°C)	Température mini moyenne (°C)
1	Abidjan	10	2	33,3	27,0
2	Abuja	0	0	36,4	21,4
3	Accra	0	0	32,3	25,7
4	Agadez	0	0	35,4	17,8
5	Alger(Dar El-Beida)	49	8	18,4	9,0
6	Antananarivo	0	0	24,9	17,0
7	Bamako-Senou	0	0	35,5	16,6
8	Bangui	8	1	33,7	20,2
9	Banjul	0	0	34,4	20,3
10	Bilma	0	0	34,4	12,1
11	Bobo Dioulasso	0	0	35,6	21,9
12	Brazzaville	107	5	31,9	22,6
13	Casablanca	48	7	17,0	10,6
14	Conakry	0	0	32,1	-
15	Cotonou	0	0	32,6	26,7
16	Dakar-Yoff	0	0	28,0	23,4
17	Dar-es-Salaam	47	2	31,6	24,1
18	Douala	104	3	32,1	25,1
19	Entebbe	0	0	28,1	19,1
20	Francistown	11	2	32,9	19,2
21	Harare	69	4	28,4	15,2
22	Johannesbourg	33	5	28,2	15,7
23	Khartoum	0	0	37,4	23,1
24	Kigoma	50	4	27,8	20,6
25	Kinshasa	3	1	31,4	22,3
26	Le Caire	0	0	25,6	15,7
27	Le Cap	1	1	22,5	15,2
28	Libreville	98	4	29,4	25,2
29	Lilongwe	8	1	-	-
30	Lomé	0	0	33,8	26,1
31	Lusaka	36	5	27,6	18,4
32	Manzini	13	1	-	19,7
33	Maputo	0	0	32,2	23,0
34	Maseru	131	3	28,7	14,8
35	Maun	2	1	31,6	20,9
36	Mbeya	40	7	24,2	16,6
37	Monrovia	0	0	30,9	24,6
38	Nairobi	5	1	26,7	15,2
39	N'Djamena	0	0	39,2	19,2
40	Niamey-Aéroport	0	0	38,2	19,4
41	Nouakchott	0	0	31,2	19,4
42	Ouagadougou	0	0	37,1	18,8
43	Plaisance	178	9	28,9	22,6
44	Sal	0	0	26,6	22,7
45	Seretse Khama Airport	2	2	29,6	18,6
46	Seychelles	58	5	30,8	24,8
47	Tamanrasset	0	0	25,3	10,3
48	Tombouctou	0	0	35,0	16,7
49	Tripoli	0	0	23,9	11,1
50	Tunis	0	0	19,9	12,4
51	Windhoek	78	7	30,4	17,1
52	Zinder	0	0	36,2	19,3

NOTE: 0 means no rain;

- means no temperature data available

Data Source : ACMAD / GTS

### 3.OUTLOOK FOR DEKAD (11<sup>th</sup> – 20<sup>th</sup> DECEMBER, 2008)

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#### 3.1 RAINFALL

The ITD will maintain southward displacement reducing on land moisture depth resulting in decreased rainfall over Gulf of Guinea countries. However, rainfall will intensify over central Africa, and southern African countries including Tanzania. In summary:

- **North Africa countries** : expected to experience decrease in rainfall with amounts ranging from 10mm to 50mm.
- **The Sahel** : The Sahel countries will remain generally dry with localized dusty episodes.
- **Gulf of Guinea countries** : The countries will experience significant decrease recording rainfall amounts ranging from 10mm to 50mm over coastal zone with peaks of about 75mm .
- **Central Africa countries** : Democratic Republic of Congo, Gabon, Congo, Angola and Equatorial Guinea will experience rainfall decrease recording amounts ranging from 10mm to 150mm with localized peaks of about 200mm.
- **GHA countries** : will record rainfall decrease with amounts ranging from 10mm to 100mm with few peaks of about 150mm. The October-November-December (OND), 2008 seasonal rainfall performance has been adversely affected by the evolution of convective activities over eastern Indian Ocean and western Pacific Ocean.
- **Southern Africa countries** : will experience spatial and intensity rainfall increase recording 10mm to 150mm intensifying over Zambia, Zimbabwe, Malawi, north Mozambique and Madagascar with peaks of about 200mm.

#### 3.2 TEMPERATURE

The forecast map below shows that the countries north and south of Equator will record the highest temperatures while northern Africa and parts of GHA countries will record the lowest temperatures. The highest forecast temperatures on the map below range from 25°C to 35°C in orange and red colours respectively with more than 75% of the continent expected to record 20°C and above.

#### 3.3 SOIL MOISTURE

The outlook on soil moisture change, map shown below includes the initial soil moisture and the forecast changes over the next 7 days. The soil moisture change and precipitation relationship is discernable on the maps below. The areas forecast to have high soil moisture increase are within central Africa with the highest soil moisture increase expected in parts of southern Africa countries.

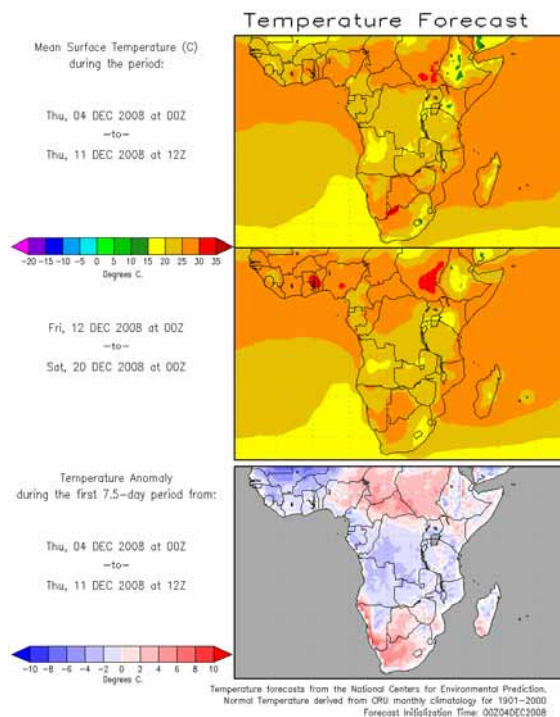
#### 3.4 IMPACTS

- **Health:** The incidences of malaria and other climate related diseases are higher in areas with high temperatures during rainy periods. The temperatures in the range of 18°C to 32°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 with high humidity/rainfall and the prevailing conducive temperatures support the survival of parasite resulting in higher incidences of vector borne diseases including malaria. The health authorities need to continue the health care services to protect lives of the vulnerable communities.
- **Agriculture and food security:** The applications of climate information in agricultural production are of crucial importance. We often emphasize on the importance of well documented onset and cessation dates of seasonal rainfall as well as monitoring of the phenological stages of crops for crop yield assessments in our countries. However, it is also important to carry out cost benefit analysis on determination and applications of appropriate planting dates in order to take full advantage of limited 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 major climate constraint on yield. The crop varieties that are higher yielding, more drought resistant, earlier maturing, disease and pest tolerant are recommended

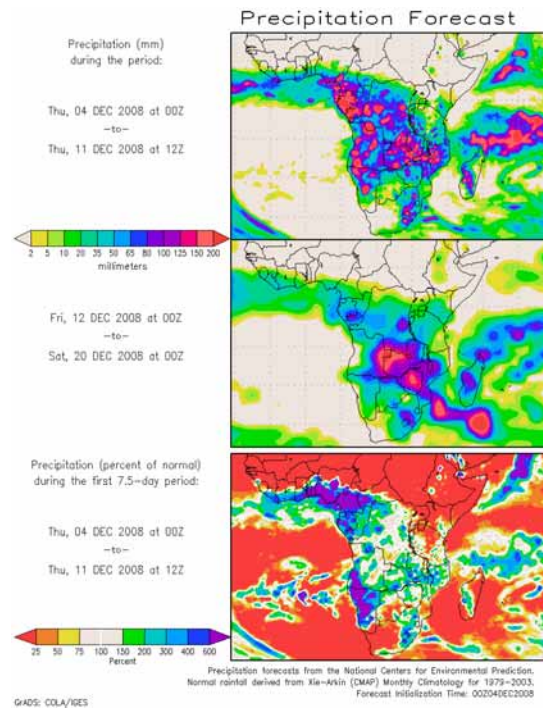


in these moisture constrained zones for communities' sustained food security and adaptation. There is also a need to invest in higher yielding crops during a good rainy season by taking advantage, for example from forecasts issued by regional climate outlook forum (RCOF) such as the PRESAO, PRESAC, GHACOF and SARCOF.

- **African Natural Ecosystems :** There is a need to invest in the rehabilitation of our presently degraded rainfall catchments areas within our natural ecosystems through enhanced national heritage conservation strategies such as national tree planting, afforestation and soil conservation programmes during rainy seasons to minimise soil loss due to heavy runoff.

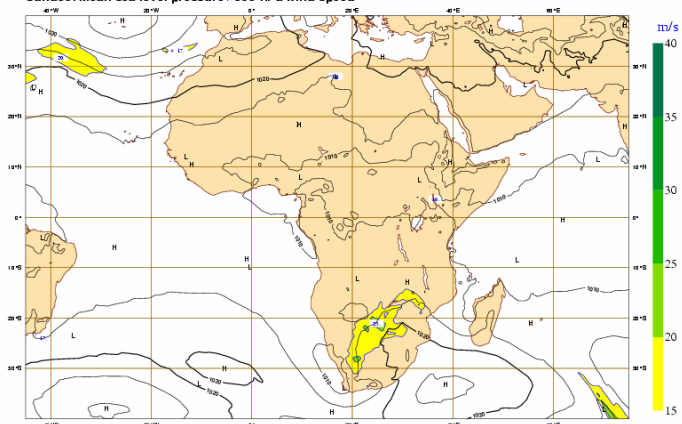


Source : COLA

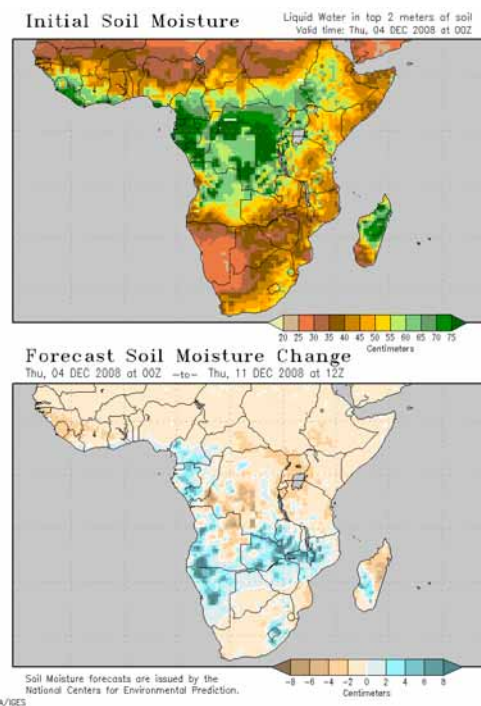


Source : COLA

Thursday 4 December 2008 00UTC @ECMWF Forecast t+240 VT: Sunday 14 December 2008 00UTC  
Surface: Mean sea level pressure / 850-hPa wind speed



Source: ECMWF



Source: COLA