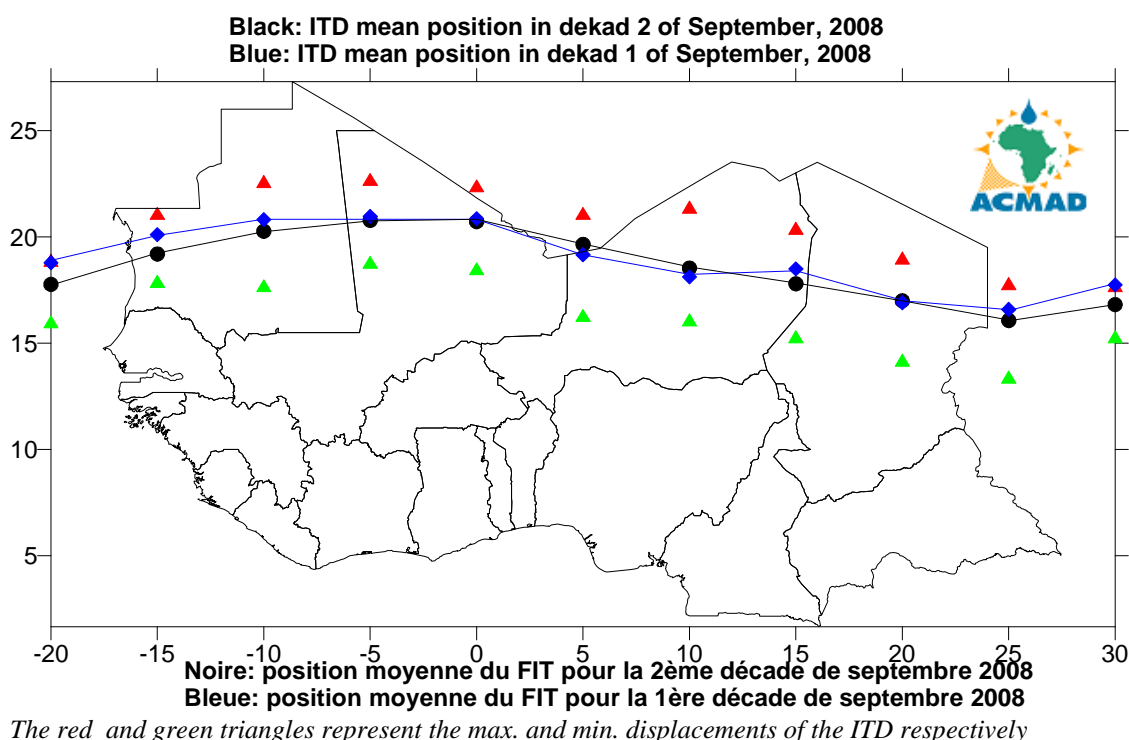


HIGHLIGHT: The Sahel north experienced significant moisture depth reduction in with the southward displacement of the ITD resulting in rainfall reduction. Though the Indian monsoon thermal low filled weakening the source of conditional instability, the near threshold TI regime value of 242°K over West Africa, central Africa countries, northern and western parts of GHA countries maintained high conditional instability associated with heavy rainfall .

1. GENERAL SITUATION :

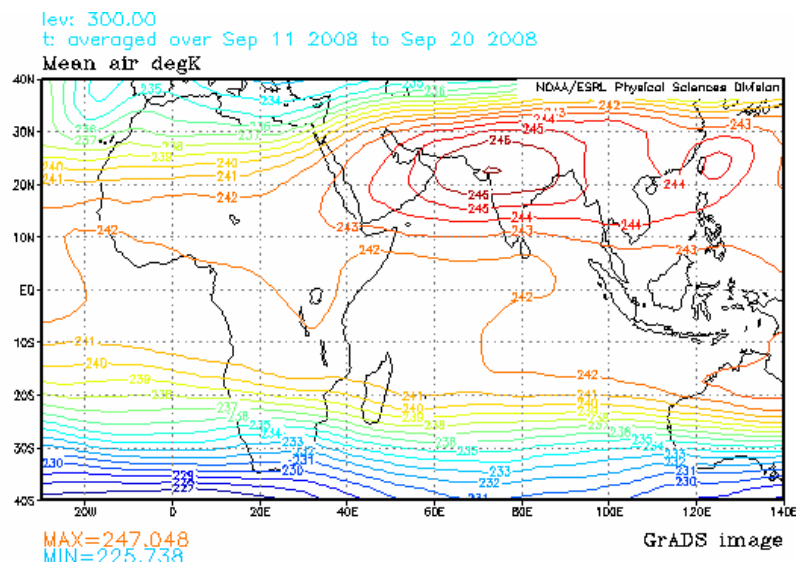
1.1 SURFACE

- **Azores high :** Pressure at 1028hPa strengthened by 5hPa compared to the last dekad and shifted to the northeast. Its mean position was observed at 44°N/19°W with a ridge extended over north Morocco and north Algeria.
- **St. Helena high :** Pressure at 1030hPa strengthened by 3hPa and shifted southeast at 36°S/08°W with an extended ridge over south Atlantic Ocean.
- **Mascarene high :** Pressure at 1031hPa maintained its intensity compared to the previous dekad but shifted southwest at 35°S/64°E with an extended ridge over Mozambique and eastern Africa.
- **Saharan thermal low:** The Saharan low of 1007hPa filled up slightly by 1hPa compared to the past dekad and shifted southeast at 19°N/07°E with an extended trough over northeast Mali, south Algeria, northeast Niger and central Chad.
- **Inter-Tropical Discontinuity (ITD) :** Between the first and the second dekad of September, 2008, the ITD had slight oscillation over the Sahel. It's mean position was observed at 17.8°N over longitude 20°W; at 19.2°N and 20.3°N over west and central Mauritania respectively; at 20.8°N and 20.7°N over northwest and northeast Mali respectively; at 19.6°N over extreme south Algeria; at 18.5°N and 17.8°N over central and east Niger respectively; at 17.0°N over central north Chad; at 16.1°N and 16.8°N over northwest and central north Sudan.



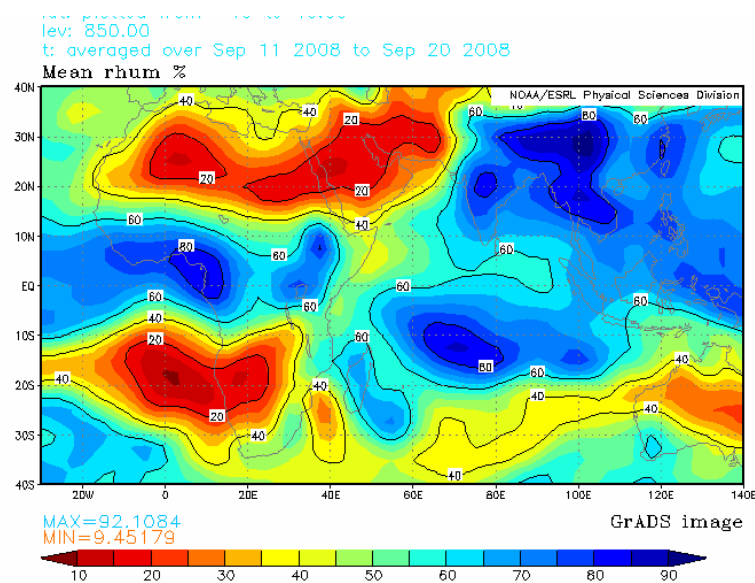
1.2 TROPOSPHERE

- **Monsoon** : Monsoon influx was moderate (5.5 to 12.5 m/s) at 925hPa level over Sierra Leone, Liberia, Côte d'Ivoire, Burkina Faso, Ghana, Togo, Benin and south Nigeria.
- **African Easterly Jet at 700hPa** : The African Easterly Jet mean speed was about 19m/s at 700hPa having weakened by 3m/s compared to the past dekad. Its axis shifted by about 1 degree of latitude towards the south and was located at about 13.7°N stretching from north Burkina Faso, south Mali and south Senegal.
- **Thermal Index (TI)** : In the second dekad of September, 2008, the thermal index (TI) regime at 300hPa, map shown below, had a near threshold TI regime value of 242°K over south the Sahel countries, parts of Gulf of Guinea countries, northeastern part of central Africa countries, northern and western parts of GHA countries that maintained high conditional instability associated with heavy rainfall over areas with high relative humidity. The TI regime maximum of 246°K located over north India maintained high conditional instability associated with heavy rainfall and floods over Asia.



(Data Source: NOAA/NCEP)

- **Relative Humidity (RH)**: The 850hPa map below shows high RH in the second dekad of September, 2008 over the Gulf of Guinea countries, central Africa, western and northern parts of GHA countries with rest of the Continent having low RH characterized by rainfall deficits.



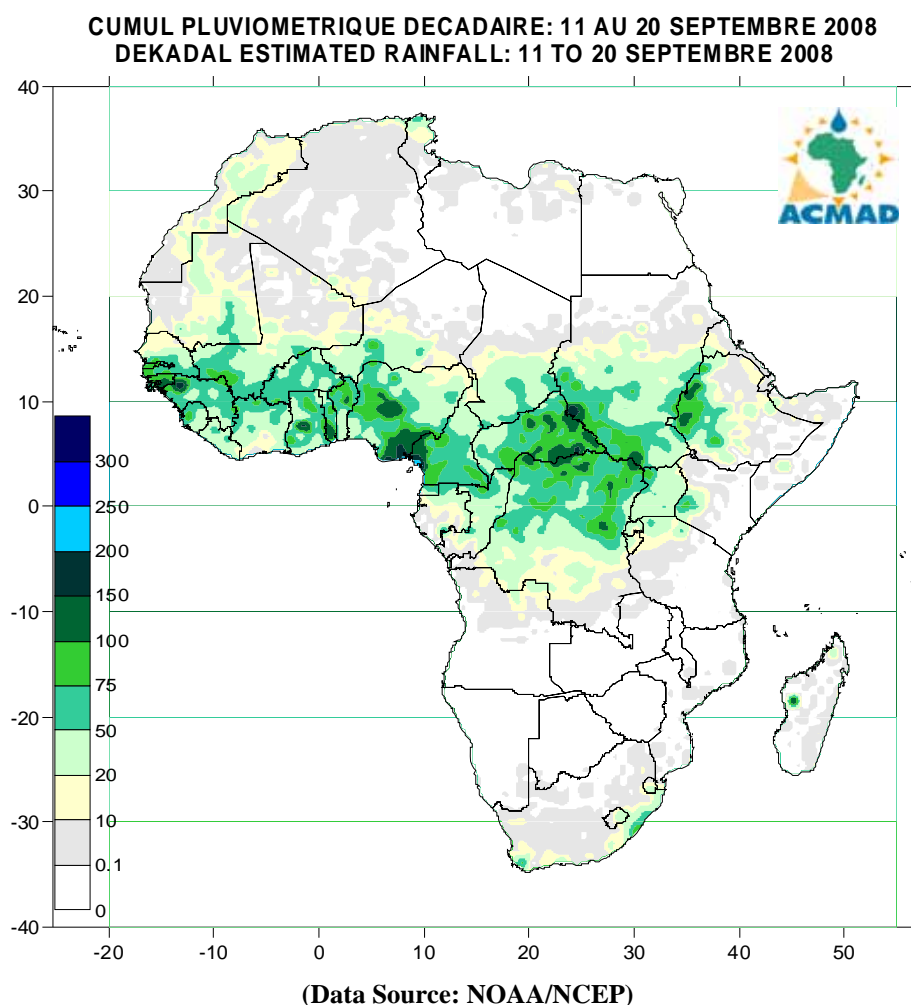
(Data Source: NOAA/NCEP)

2. RAINFALL AND TEMPERATURE SITUATION

2.1 RAINFALL

The rainfall estimate based on Satellite and Rain Gauge on the map below for the second dekad of September, 2008 shows slight spatial rainfall increase over north Africa, central Africa, south Africa and the Sahel countries with slight spatial rainfall decreases GHA. In summary:

- **North Africa countries** : experienced spatial expansion and rainfall intensity increase recording amounts ranging from 10mm to 75mm over Morocco and Tunisia.
- **The Sahel** : had slight spatial rainfall increase recording amounts ranging from 10mm to 150mm with peaks of about 200mm and above over Guinea Bissau.
- **Gulf of Guinea countries** : had slight spatial and intensity rainfall increase recording amounts ranging from 20mm to 200mm with heaviest amounts of about 250mm over southeast Nigeria and west Cameroon.
- **Central Africa countries** : experienced slight spatial and intensity rainfall increase recording amounts ranging from 10mm to 100mm with peaks of 150mm and above over north and west Central African Republic and north Democratic Republic of Congo.
- **GHA countries** : experienced slight spatial rainfall decrease over northern with an increase over the west recording amounts ranging from 10mm to 100mm intensifying over south Sudan and western Ethiopia with peaks of 150mm. However, the eastern sector continued experience severe rainfall deficits.
- **Southern Africa countries** : had slight spatial and intensity rainfall increase recording localized rainfall ranging from 10mm to 100mm over South Africa and Madagascar.



2.2 OBSERVED DATA

The Table below shows heavy rainfall recorded over Plaisance in Mauritius, Douala in Cameroon, Banjul in Gambia and Lomé in Togo. The lowest temperatures of 7.1°C was recorded at Maseru in Lesotho with the highest temperatures of 42.7°C recorded at Bilma in Niger.

N°	STATIONS	Précipitations (mm)	Nombre de jours de pluie	Température maxi moyenne (°C)	Température mini moyenne (°C)
1	Abidjan	8	2	29,5	23,4
2	Accra	0	0	29,4	24,0
3	Addis Abéba	67	4	21,4	10,9
4	Agadez	12	2	39,0	27,0
5	Alger(Dar El-Beida)	8	4	28,7	18,0
6	Antananarivo	15	2	25,4	13,1
7	Antsiranana	0	0	31,4	20,1
8	Bamako-Senou	87	6	32,9	22,5
9	Bangui	84	7	31,4	21,9
10	Banjul	149	4	29,9	23,4
11	Bilma	0	0	42,7	26,0
12	Bobo Dioulasso	92	3	29,6	21,7
13	Brazzaville	7	1	31,9	22,2
14	Casablanca	18	3	25,2	19,4
15	Conakry	13	1	28,5	
16	Cotonou	44	7	29,2	24,8
17	Dakar-Yoff	0	0	31,2	26,1
18	Dar-es-Salaam	2	2	30,4	18,7
19	Douala	157	7	28,9	23,7
20	Entebbe	5	2	26,3	18,3
21	Francistown	0	0	29,5	11,9
22	Johannesbourg	0	0	23,1	10,0
23	Khartoum	0	0	40,0	28,0
24	Kigoma	4	1	30,6	18,5
25	Kinshasa	0	0	31,9	20,7
26	Le Caire	0	0	34,8	24,4
27	Le Cap	19	5	16,2	10,0
28	Libreville	10	3	29,0	24,4
29	Lomé	104	5	30,0	24,3
30	Lusaka	0	0	30,2	12,2
31	Manzini	29	2	-	13,6
32	Maputo	11	3	27,8	16,8
33	Maseru	0	0	21,1	7,1
34	Maun	0	0	33,2	16,0
35	Mbeya	0	0	23,9	9,8
36	Monrovia	0	0	28,3	23,7
37	Nairobi	0	0	25,6	13,8
38	Nampula	1	1	31,0	15,2
39	N'Djamena	10	2	33,9	23,6
40	Niamey-Aéroport	38	5	33,7	24,5
41	Nouakchott	2	1	34,9	26,6
42	Ouagadougou	11	2	31,2	23,8
43	Plaisance	240	8	25,2	20,4
44	Sal	0	0	29,5	25,1
45	Seretse Khama Aéroport	0	0	29,1	12,1
46	Seychelles	7	3	30,5	25,2
47	Tamanrasset	0	0	34,6	22,1
48	Toalagnaro	16	1	25,8	18,7
49	Tombouctou	3	2	38,5	26,4
50	Tripoli	0	0	35,7	21,8
51	Tunis	41	6	30,0	20,8
52	Windhoek	0	0	29,4	12,4
53	Zinder	27	3	35,0	23,5

NOTE: 0 means no rain;

- means no temperature data available

Data Source : ACMA / GTS

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

3.1 RAINFALL

The ITD will move significantly southward with more displacement over eastern part of the Sahel resulting in significant decrease of rainfall over the Sahel. Rainfall is expected to increase over Gulf of Guinea countries central Africa and western parts of GHA countries. In summary:

- **North Africa countries** : expected to experience an increase in rainfall recording about 10mm to 75mm.
- **The Sahel** : The convective rainfall is expected decrease Senegal, Gambia, south Mali, Burkina Faso and south Niger recording amounts ranging from 10mm to 50mm with isolated peaks of above 75mm.
- **Gulf of Guinea countries** : Guinea, Guinea Bissau, Sierra Leone, Liberia, Cote-d'Ivoire, Ghana, Togo, Benin, Nigeria and Cameroon will record rainfall increase amounts ranging from 20mm to 200mm with peaks of about 250mm.
- **Central Africa countries** : Central African Republic, Democratic Republic of Congo will experience increase in rainfall recording amounts ranging from 20mm to 100mm and above with isolated peaks of about 200mm.
- **GHA countries** : Uganda, western Kenya, southwest Sudan and western Ethiopia will experience a general increase recording rainfall amounts ranging from 10mm to 100mm with peaks of about 150mm. However, the eastern sector will continue to experience acute rainfall deficits.
- **Southern Africa countries** : few southern Africa countries especially South Africa will get relief from a general rainfall increase over the Cape and eastern coast of South Africa, south Mozambique and parts of Madagascar recording rainfall ranging from 10mm to 100mm.

3.2 TEMPERATURE

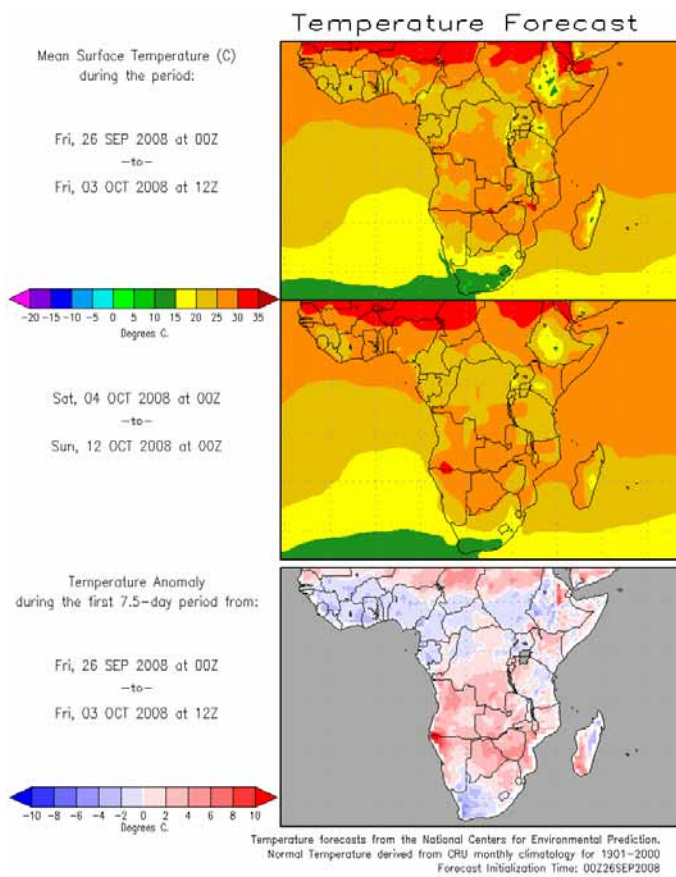
The forecast map below shows that the countries north of Equator will record the highest temperatures while few parts of Southern Africa and of GHA countries will record the lowest temperatures. The highest forecast temperatures on the map below range from 25°C to 35°C in orange and red colours respectively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

3.3 SOIL MOISTURE

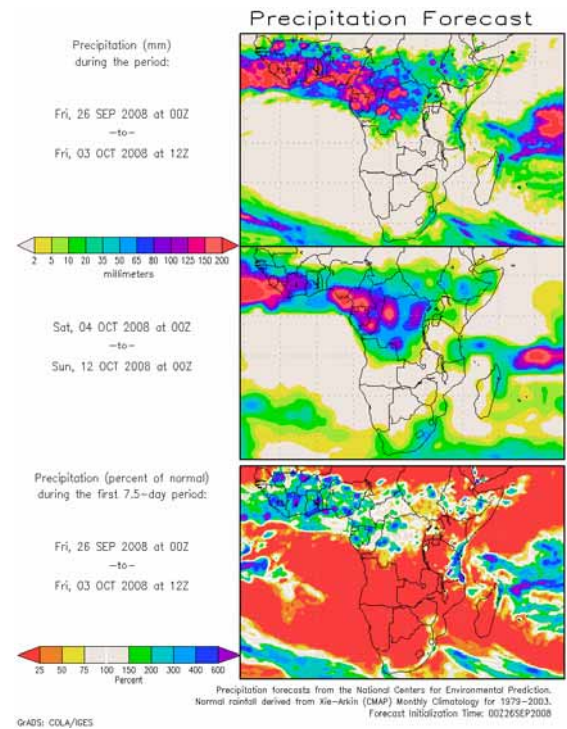
The outlook on soil moisture change, map shown below includes the initial soil moisture and the forecast changes over the next 7 days. The soil moisture change and precipitation relationship is discernable on the maps below. The areas forecast to have highest soil moisture increase are confined within the Gulf of Guinea countries and few parts of central Africa countries and South Africa.

3.4 IMPACTS

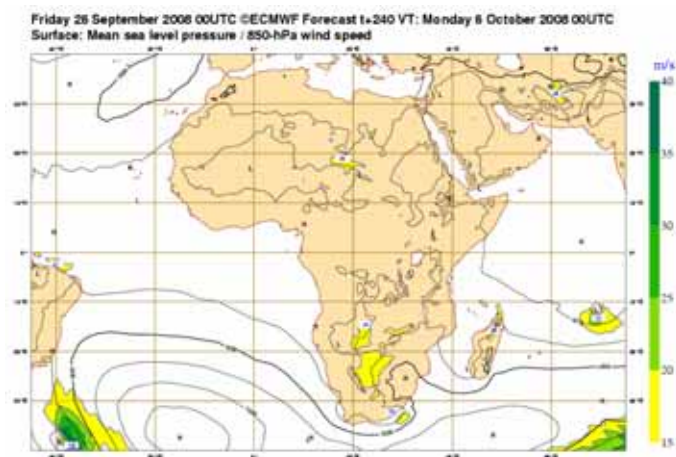
- **Health**: The incidences of malaria and other climate related diseases are higher in areas with high temperatures during rainy periods. The temperatures in the range of 20°C to 28°C with high rainfall (high humidity) favour the survival of the vector and development of the parasite in the vector resulting in high incidences of malaria even in low prevalence areas. The Gulf of Guinea countries, parts of the Sahel countries, central Africa countries and limited parts of GHA countries with high humidity/rainfall and the prevailing high temperatures support the survival of parasite resulting in higher incidences of vector borne diseases such as malaria epidemic among others. 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 is of crucial importance. We often emphasize on the importance of well documented onsets and cessations dates of seasonal rainfall as well as monitoring of the phenological stages of crops in our countries. However, it is of crucial importance 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 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, GHACOF and SARCOF.
- **African Natural Ecosystems** : There is a need to invest in the rehabilitation of our presently degraded water 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.



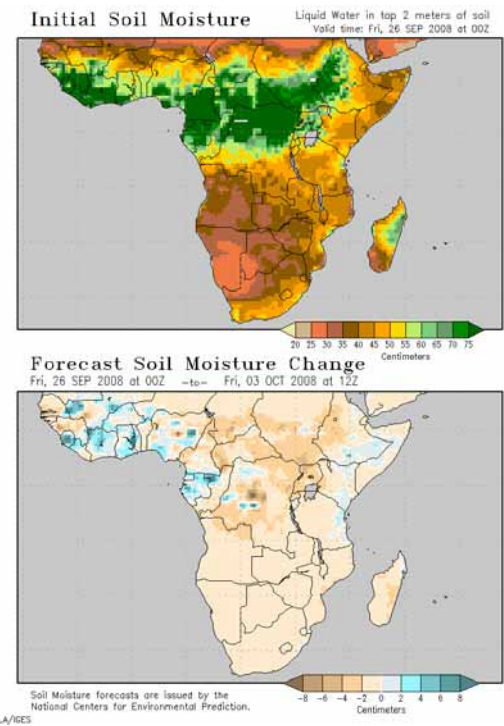
Source : COLA



Source : COLA



Source : ECMWF



Source : COLA