

Ten Day Climate Bulletin

N° 02 Year 2009

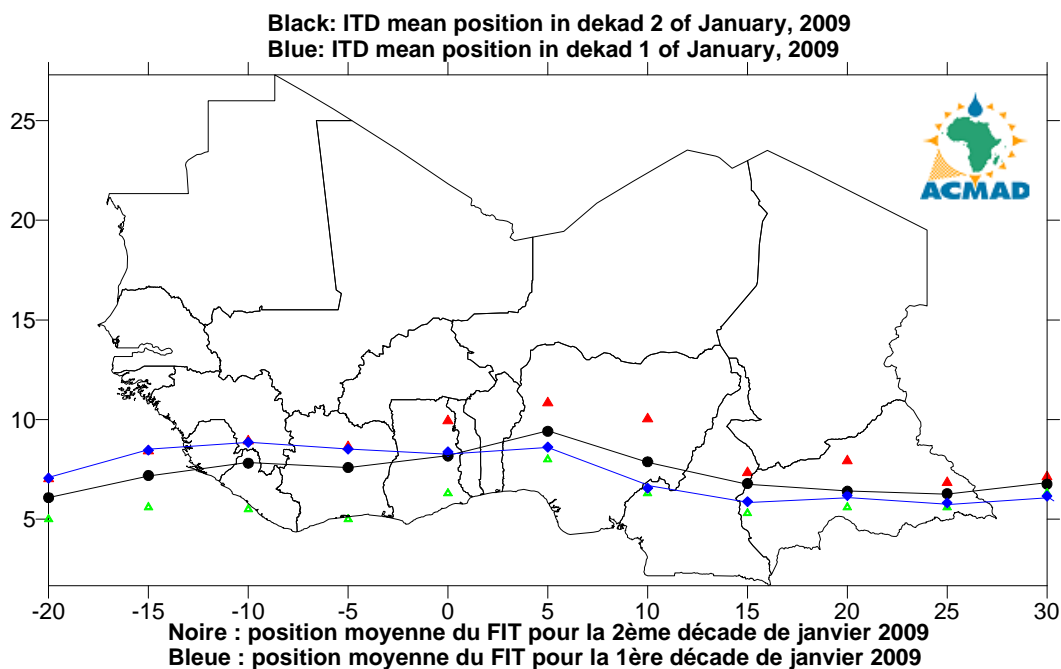
Dekad of 11 to 20 January, 2009

HIGHLIGHT : The highest rainfall of above 200mm was estimated over Madagascar decreasing to about 200mm over north Mozambique. The northern part of southern Africa countries including Madagascar are expected to continue experiencing the highest rainfall associated with floods.

1. GENERAL SITUATION :

1.1 SURFACE

- **Azores high** : Pressure of 1031hPa strengthened by 5hPa and shifted southeast with a mean position at 33°N/25°W. It had a ridge extending over south Morocco and Mauritania, north Senegal and south Mali.
- **St. Helena high**: Pressure of 1029hPa strengthened by 4hPa and shifted northwest at 38°S/10°W with an extended ridge over south Atlantic Ocean.
- **Mascarene high**: Pressure of 1024hPa had a mean position at 37°S/66°E with extended ridge over the Indian Ocean.
- **Saharan thermal low**: Pressure at 1008hPa deepened slightly by 2hPa compared to the past dekad and shifted east at 10°N/04°E with an extended trough over north Benin and north Nigeria.
- **Inter-Tropical Discontinuity (ITD)** : Between the first and the second dekad of January, 2009, the ITD had southward movement over western part of Gulf of Guinea countries, and moved towards the north over the eastern part. It's mean position was observed at 6.1°N and 7.2°N over longitude 20°W and 15°W respectively; at 7.8°N over north Liberia; at 7.6°N over central north Côte d'Ivoire; at 8.2°N over central east Ghana; at 9.4°N and 7.9°N over west southwest Nigeria; at 6.8°N over extreme east Cameroon; at 6.4°N and 6.3°N over central and east Central African Republic respectively and at 6.8°N over south Sudan.



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

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1.2 TROPOSPHERE

- **Monsoon:** Monsoon influx was weak (1 to 5 m/s) at 925hPa level over south Nigeria and Cameroon.

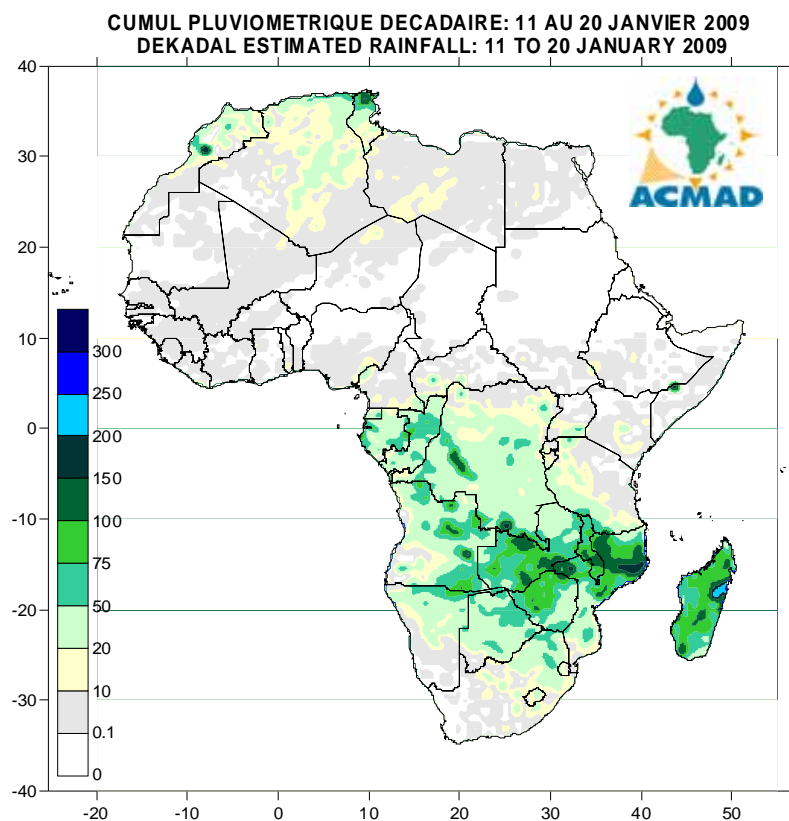
2. RAINFALL AND TEMPERATURE SITUATION

2.1 RAINFALL

The rainfall estimate based on Satellite and Rain Gauge on the map below for the second dekad of January, 2009 shows spatial rainfall increase over Northern Africa and central Africa countries, while, Gulf of Guinea countries, southern Africa countries and GHA countries experienced spatial rainfall decrease.

In summary:

- **North Africa countries :** experienced spatial and intensity of rainfall increase recording amounts ranging from 10mm to 100mm with maximum rainfall amount ranging from 100 to 200mm over central Morocco, northeastern Algeria and north Tunisia.
- **The Sahel :** countries were dominated by the effects of Harmattan winds, dry and localized dusty conditions.
- **Gulf of Guinea countries :** had significant spatial and intensity of rainfall decrease recording less to nil rainfall except over southeastern Nigeria and southern Cameroon that recorded amounts ranging from 10mm to 75mm.
- **Central Africa countries :** had slight spatial rainfall increase recording amounts ranging from 10mm to 150mm with localized peaks between 150 to 200mm over Democratic Republic of Congo and Angola.
- **GHA countries :** experienced spatial rainfall decrease recording amounts ranging from 10 to 100mm with localized peak between 100 to 200mm Ethiopia and Somalia border.
- **Southern Africa countries :** had slight spatial rainfall decrease recording amounts ranging from 10 to 200mm with heaviest amounts of above 200mm over Madagascar .



(Data Source: NOAA/NCEP)

2.2 OBSERVED DATA

The Table below shows moderate rainfall recorded over Lusaka in Zambia and Libreville in Gabon. The lowest temperature of 5.7°C was recorded at Alger (Dar-El-Bieida) in Algeria while the highest temperature of 38.8°C was recorded at N'Djamena in Chad.

N°	STATIONS	Précipitation (mm)	Number of rainy days	Température max mean (°C)	Température Min mean (°C)
1	Abidjan	0	0	32,9	25,7
2	Abuja	0	0	35,2	21,6
3	Accra	0	0	32,9	25,2
4	Addis Abéba	3	1	-	-
5	Alger(Dar El Beida)	28	4	15,4	5,7
6	Antananarivo	0	0	27,8	17,3
7	Bamako-Senou	0	0	28,0	16,8
8	Bangui	13	1	33,7	21,4
9	Banjul	0	0	28,6	16,5
10	Bissau	0	0	30,1	-
11	Brazzaville	10	1	30,5	22,1
12	Casablanca	2	1	-	-
13	Conakry	0	0	30,8	-
14	Cotonou	0	0	31,7	26,0
15	Dakar-Yoff	0	0	22,6	17,2
16	Dar-es-Salaam	0	0	33,4	26,3
17	Douala	5	1	32,7	24,5
18	Entebbe	0	0	-	18,9
19	Harare	18	1	27,1	17,6
20	Khartoum	0	0	33,3	18,6
21	Kinshasa	1	1	29,9	21,5
22	Le Caire	0	0	21,2	11,8
23	Libreville	53	5	30,3	23,5
24	Lilongwe	30	2	-	-
25	Lomé	0	0	33,7	25,6
26	Lusaka	73	3	27,5	19,0
27	Manzini	14	4	-	19,2
28	Maputo	14	5	30,6	23,2
29	Maseru	0	0	28,9	15,5
30	Mbeya	6	1	-	-
31	Monrovia	0	0	30,4	22,4
32	Nairobi	0	0	27,2	13,8
33	N'Djamena	0	0	38,8	18,6
34	Niamey-Aéroport	0	0	32,5	18,0
35	Nouakchott	0	0	24,6	13,4
36	Ouagadougou	0	0	30,1	18,6
37	Plaisance	4	4	31,1	23,5
38	Sal	0	0	23,4	19,1
39	Seretse Khama Airport	4	1	-	-
40	Seychelles	0	0	29,5	25,5
41	Tripoli	6	4	18,8	10,8
42	Tunis	18	3	16,1	9,6
43	Windhoek	8	2	33,0	16,4

NOTE: 0 means no rain;

- means no temperature data available

Data Source : ACMAD / GTS

3.OUTLOOK FOR DEKAD (01st – 10th FEBRUARY, 2009)

3.1 RAINFALL

The ITD will maintain a quasi stationary position and rainfall deficits are expected over Gulf of Guinea countries and the Sahel. However, rainfall will increase over North Africa countries, southern part of central Africa countries and northern part of South Africa countries including southern Tanzania. In summary:

- **North Africa countries** : expected to experience some increase in rainfall with amounts ranging from 10mm to 100mm with peaks of about 200mm.
- **The Sahel** : will continue to experience dry condition with localized dusty episodes.
- **Gulf of Guinea countries** : will continue to experience severe deficits recording rainfall amounts ranging from 10mm to 50mm over the coastal zone.
- **Central Africa countries** : Democratic Republic of Congo, Gabon, Congo, Angola, southern Cameroon and Equatorial Guinea will experience rainfall increase recording amounts ranging from 10mm to 200mm with peaks of about 250mm over southern eastern parts.
- **GHA countries** : will record rainfall increase with amounts ranging from 10mm to 100mm with isolated peaks of about 150mm over western/southern Tanzania.
- **Southern Africa countries** : will experience significant increase in spatial and intensity of rainfall recording amounts ranging from 10mm to 250mm with peaks of about 300mm over eastern Angola, Zambia, Malawi, Zimbabwe, Mozambique and Madagascar. However, isolated rainfall peaks of above 300mm are expected over some parts.

3.2 TEMPERATURE

The forecast map below shows that the majority of countries in Africa will record the high temperatures while northern Africa and parts of GHA countries will record the low 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 south of Equator where the highest soil moisture increase is expected in parts of Angola, Namibia, Botswana and north South Africa.

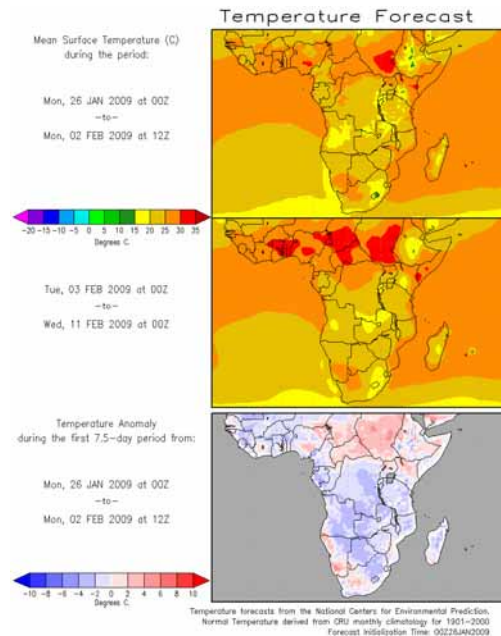
3.4 IMPACTS

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 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 central Africa countries, GHA countries and southern Africa 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 southern Africa countries namely Angola, Zambia, Zimbabwe, eastern South Africa, Mozambique and Madagascar are expected to get heavy rainfall associated with floods and increased risk on outbreak of water borne diseases such as cholera. The health authorities need to continue the health care services to protect lives of the vulnerable communities.

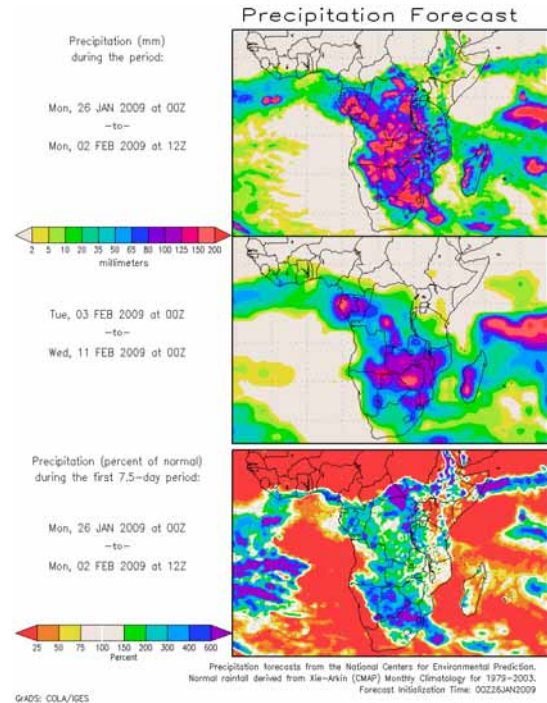
- **Agriculture and food security** : The applications of climate information in agricultural production are of crucial importance. We often emphasize on the importance of well documented onset and cessation dates of seasonal rainfall as well as monitoring of the phenological stages of crops for crop 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 seasons. 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 of seasonal climate consensus forecast, for example issued by regional climate outlook forum (RCOF) such as the PRESAO, PRESAC, GHACOF or SARCOF for West Africa, central Africa, Greater Horn of Africa and southern Africa countries respectively.

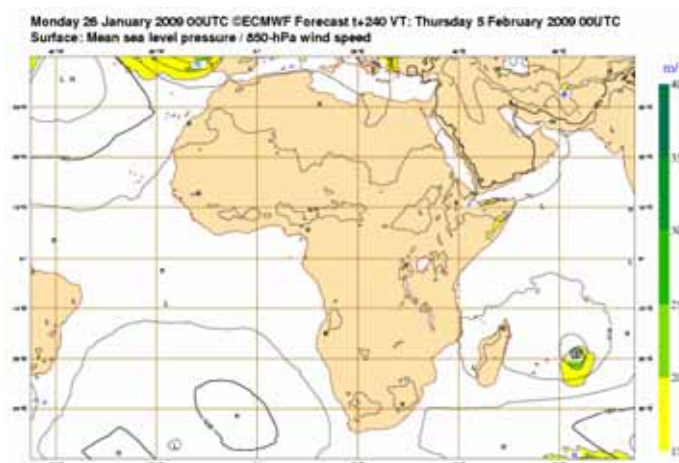
- **African Natural Ecosystems** : There is a need to invest in the rehabilitation of our presently degraded rainfall catchments areas within our natural ecosystems through enhanced national conservation strategies such as national tree planting, afforestation and soil conservation programmes during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



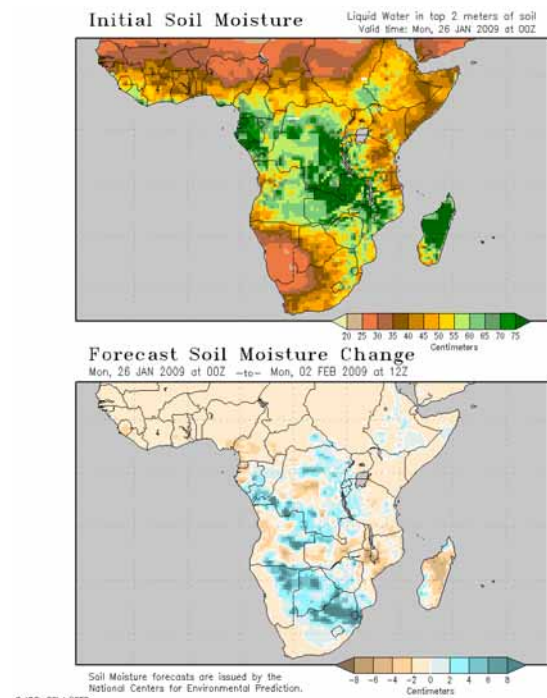
Source : COLA



Source : COLA



Source: ECMWF



Source: COLA