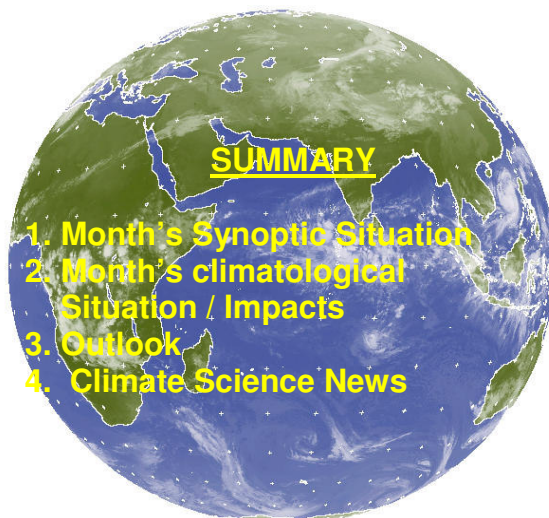


CLIMATE WATCH AFRICA BULLETIN

N° 11
NOVEMBER 2008



HIGHLIGHTS: The highest rainfall peaks of about 400mm were recorded over central Africa countries while southern parts of the Greater Horn of Africa (GHA) countries experienced acute rainfall deficits.

1. SITUATION DURING THE MONTH OF NOVEMBER, 2008

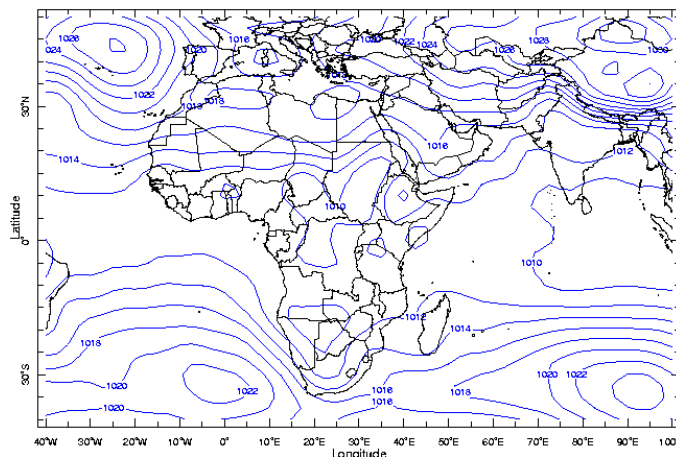
1.1 Centres of Anticyclone

The Azores high pressure at 1028hPa Strengthened by 4 hPa and shifted to the north at about 45°N/25°W.

The St Helena high pressure at 1022hPa weakened by 2hPa compared to the previous month and shifted to the south at 35°S/03°W.

The thermal low of 1010hPa maintained its strength compared to the past month, covering a limited area over southwest Burkina Faso, northeast Ghana, north Togo, Benin, south Chad, north Cameroon, northeast Nigeria, south Sudan, Central African Republic and north Democratic Republic of Congo.

The Mascarene high pressure at 1024hPa maintained its intensity compare to the past month and shifted its centre to the east at 35°S/95°E with a weak ridge over eastern part of Southern African countries.



Nov 2008

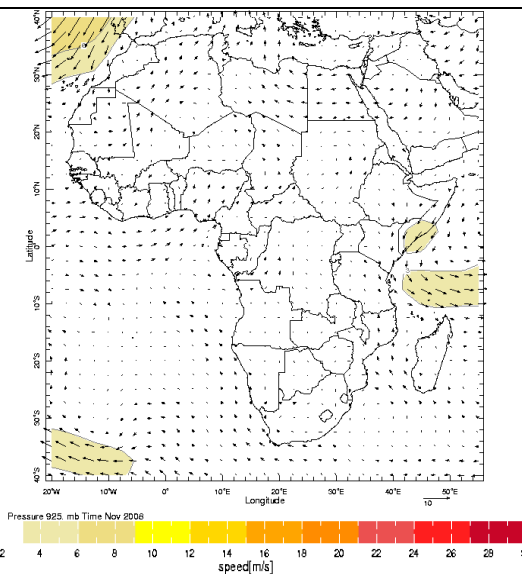
Mean surface pressure during the Month of November, 2008
(Source : IRI)

1.2 Low level wind anomaly flow at 850hPa

At 850hPa level, the strong northeasterly winds anomalies were observed over northeastern Atlantic Ocean, while, easterlies winds anomalies prevailed over the southern part.

Over coastal Somalia and Kenya strong northeasterlies winds anomalies veering to westerlies over western Indian Ocean were observed.

The average wind anomaly speed (shaded) was observed at about 08 m/s and above.

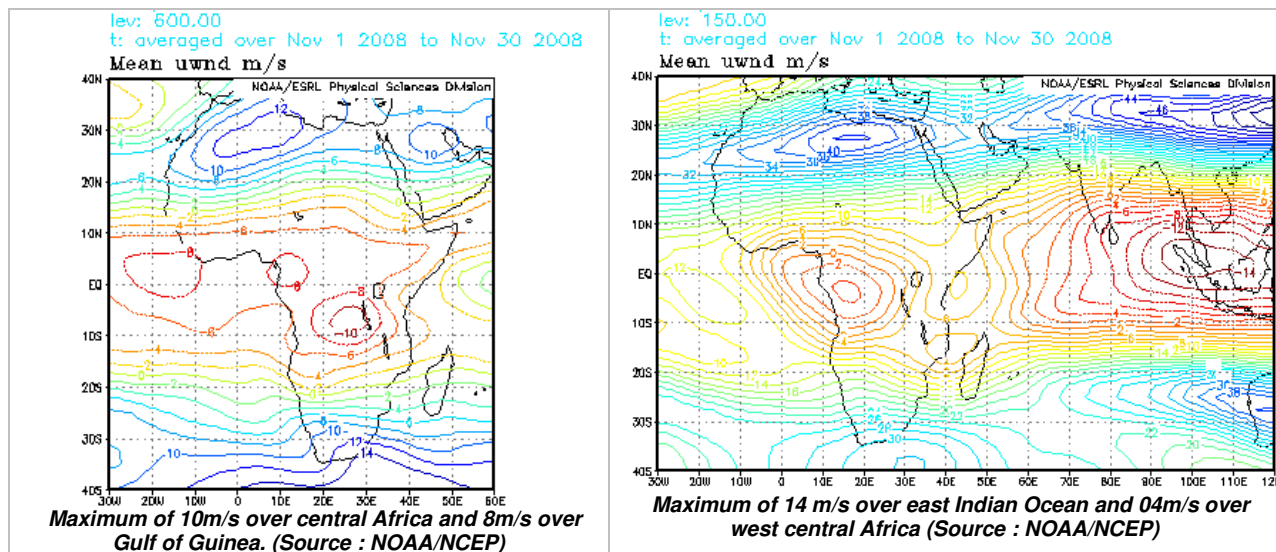


November 2008, Wind Anomalies at 850hPa
(Source : NOAA/NCEP)

1.3 Mid and upper level winds

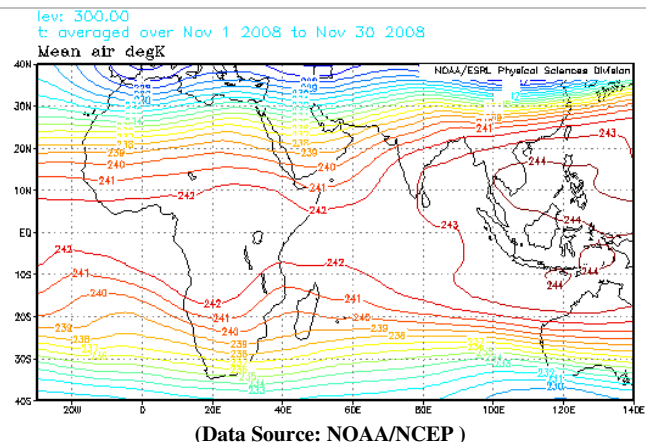
At the 600hPa over west Africa a wind core of 08 m/s with axis located at about 05°N over the Gulf of Guinea and Gabon, south Cameroon, Equatorial Guinea and Congo while the maximum wind core at 10m/s is located at around 9°S over south eastern Democratic Republic of Congo and Tanzania.

The mean maximum wind speed at 150hPa was 14 m/s over eastern Indian Ocean with secondary peak of about 04 m/s over western part of central Africa countries.



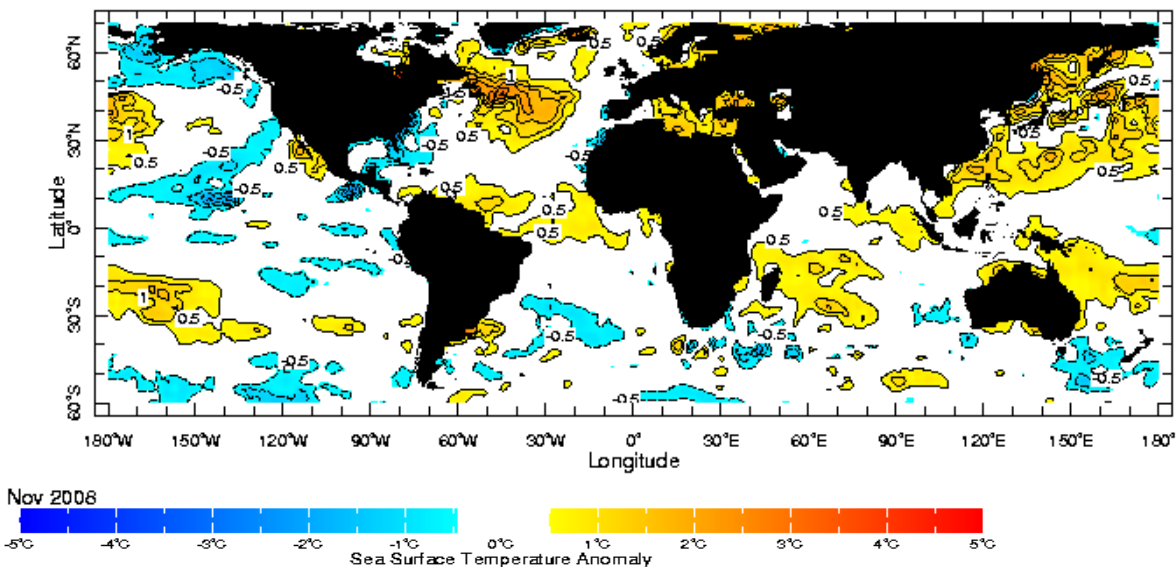
1.4 Thermal index

In the month of November, 2008, the thermal index (TI) regime at 300hPa, map shown, had a near-threshold value of 242°K isotherm over Tropical Africa covering southern parts of Gulf of Guinea countries, central Africa countries, part of GHA countries extending to northern part of southern African countries maintained reasonable conditional instability associated heavy rainfall. The threshold value of 243°K and above maintained the highest conditional instability associated with heavy convective rainfall with floods over south Asia. The low TI regime value of 241°K and below was associated with suppressed convection and rainfall deficits over the Sahel countries and parts of southern Africa countries.



1.5 Sea Surface Temperature (SST) and El Nino/Southern Oscillation (ENSO)

A neutral to cooling conditions prevailed in the central equatorial and eastern Pacific Ocean, while warming condition prevailed in western and south eastern Pacific. Neutral to warming conditions were observed over most of the Atlantic Ocean except in the southern and northwestern parts where some cooling conditions were observed. Neutral to warming condition were observed over most of the Indian Ocean. The neutral to warming conditions were observed over Mozambique Channel with cooling conditions observed in the south of the Channel.

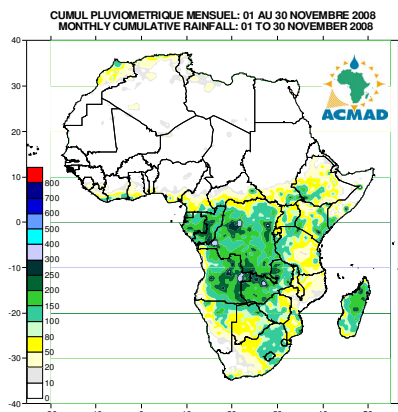


2.1 Rainfall

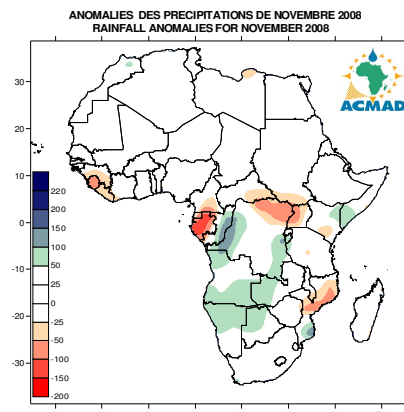
The estimated rainfall map below shows spatial rainfall decrease over northern Africa countries, Gulf of Guinea and the Sahel countries while central Africa, southern Africa and GHA countries experienced spatial and intensity of rainfall increase. In summary.

- **North Africa** had spatial and intensity of rainfall decrease recording rainfall amounts ranging from 10 to 80mm with maximum rainfall ranging between 80 to 150mm over extreme north Morocco.
- **The Sahel** countries had significant spatial and intensity of rainfall decrease recording non significant amounts of rainfall.
- **Gulf of Guinea** countries experienced significant spatial and intensity of rainfall decrease recording amounts ranging from 10 to 150mm over its coastal areas.
- **Central Africa** countries experienced spatial and intensity of rainfall increase recording amounts ranging from 10mm to 300mm with peaks above 300mm over Democratic Republic of Congo and Angola.
- **GHA** countries experienced spatial rainfall increase recording amounts ranging from 10mm to 200mm with some peaks ranging between 200 to 300mm.
- **Southern Africa** countries experienced significant spatial and intensity of rainfall increase recording amounts ranging from 10mm to 300 mm with maximum rainfall amounts above 300mm over Zambia and Madagascar.

The November 2008, rainfall anomaly map shows significant rainfall deficits over northeast Libya, south Guinea, Sierra Leone, Liberia, south Cameroon, Gabon, Equatorial Guinea, southeast Central African Republic, north Democratic Republic of Congo, south Kenya and north Mozambique, while, excessive rainfall was recorded over east Congo, west and east Democratic Republic of Congo, north and south Angola, Namibia, north Botswana, south Kenya, south Somalia, south Mozambique and north Morocco.



(Data Source: NOAA/NCEP)

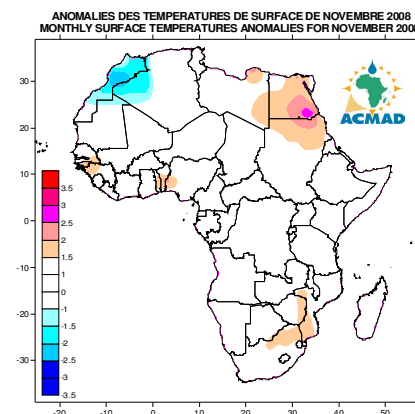


(Data Source: NOAA/NCEP)

2.2 Surface Temperature Anomalies

In November 2008, the temperature anomalies over most of African countries were generally normal (1 °C to -1 °C).

However, negative temperature anomalies (<-1.5°C) were observed in northern Morocco, western Algeria and extreme north Mauritania, while, positive temperature anomalies (>1.5°C) were observed in South Senegal, west Guinea, Benin, Togo, west Nigeria, north and eastern Libya, Egypt, north Sudan, east Zimbabwe, south Mozambique and northeast South Africa.



(Data Source: NOAA/NCEP)

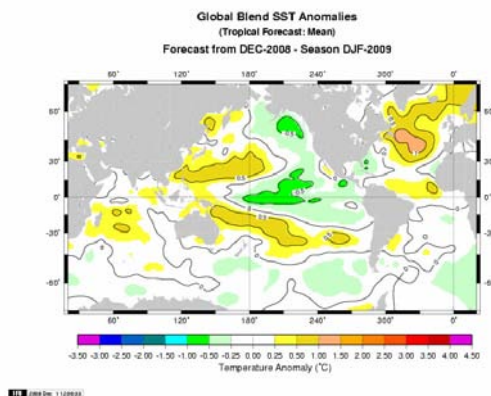
3. OUTLOOK

3.1 Forecast Sea Surface Temperature (SST)

Pacific Ocean: Neutral to cooling conditions will continue in the central and eastern Pacific Ocean, but warming is expected over its western and south central part. However, the set of dynamical and statistical model forecasts of ENSO over Nino 3.4 domain (5°N – 5°S, 120°W – 170°W) indicated a spread of possible SST anomalies maintaining neutral conditions throughout the forecast period.

Atlantic Ocean: A neutral to cooling condition is expected over southern Atlantic Ocean, while warming trend is expected to continue over northern Atlantic.

Indian Ocean: Neutral to warming condition is expected over the Indian Ocean.



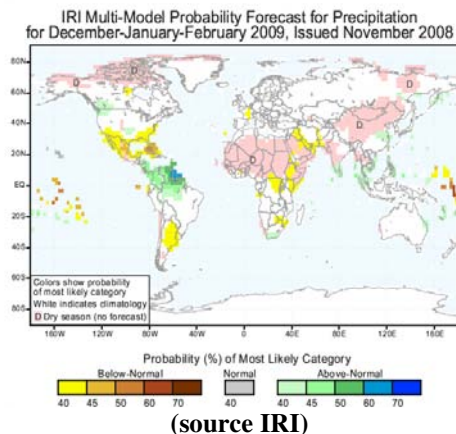
(source IRI)

3.3 Rainfall

With the southward displacement of the ITD, leading to significant reduction of moisture influx and dry, dusty conditions over the Sahel, with the convective zone expected southward causing rainfall reduction over the Sahel, parts of the Gulf of Guinea countries and parts of Central African countries, while rainfall activities are expected to intensify over southern parts of southern African countries.

The IRI forecast shown below indicates below normal rainfall over, western part of Gulf of Guinea countries northern part of central African countries and northeastern part of southern African countries from December to February, while above normal rainfall was forecast over extreme southern part of southern African countries which is consistent with the ICPAC consensus Climate outlook for September to December 2008.

The ACMAD seasonal climatic forecast for central African countries (PRESAC3) for October-December 2008 revealed normal to above normal rainfall over most of the countries.



Greater Horn of Africa Consensus Climate Outlook for September to December 2008

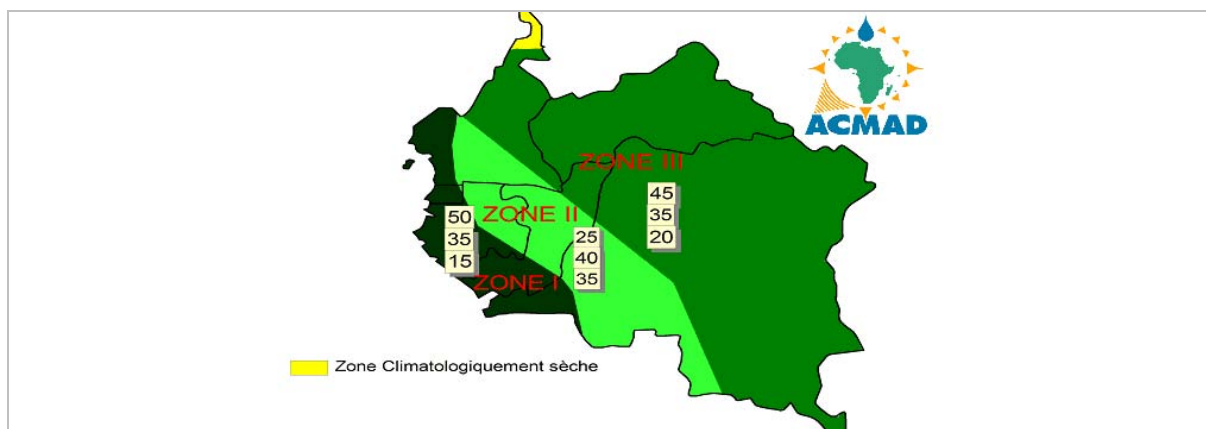
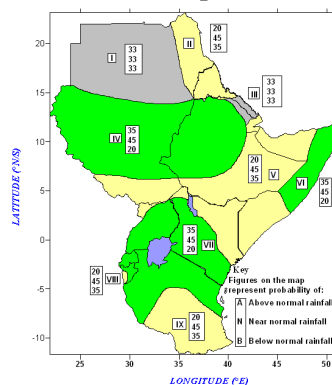


Figure: Prévision des Précipitations pour la période Octobre – Novembre - Décembre 2008 en Afrique centrale.

Climate Science News

African centre of Meteorological Applications for Development (ACMAD)

ACMAD as a pan-African institution and a WMO designated meteorological Centre has maintained its role at regional, sub-regional and national levels, with NMHSs and development partners in the provision of weather and climate information and early warnings for agriculture and food security, water resources management, hydro-electric power generation climate disaster risk reduction (floods, drought, health, locust invasions, disease outbreaks, among others) and currently supporting the African Regional Strategy for climate disaster risk reduction (DRR) for (2006-2010) advocating enactment of Disaster Management Bill 2005. Specifically ACMAD products are:

- **Short-range forecasts :** The daily weather forecasts specifically referred to as West Africa Synthetic Forecast (WASAF) and South Africa Synthetic Forecast (SASF) for high impact weather including daily forecast on max and min temperatures
- **Medium-range forecasts :** Dekadal (10-days) climate analysis with an outlook (forecast) for 10 days with highlight on sectoral impacts particularly on agriculture and food security, health and natural ecosystems.
- **Long-range forecasts :** Monthly climate analysis with an outlook (forecast) for the next month with highlight on socio-economic impacts.
- **Seasonal Forecasts :** Seasonal consensus forecast for July-August-September (JAS) season is issued annually during the Climate Outlook Forum (COF), the PRESAO for 18 countries (16 West Africa countries, Chad and Cameroon). The PRESAO is normally held in May-June before onset of the JAS rainfall season over the Sahel. The first COF, the PRESAO-01 was held on 4th – 8th May, 1998 in Abidjan, Cote d'Ivoire. This year ACMAD held the PRESAO-11 on 23rd –24th May, 2008 under the theme “**Seasonal Climate Prediction, Water Resources Management and Food Security**” and issued the seasonal climate consensus forecast JAS, 2008. The other sub-regional COFs include PRESAC (7countries) PRESA-NOR (6 countries) and the programmed PRESA-IO (Indian Ocean countries). The most recently COF organized by ACMAD and NMHSs is the PRESAC 03 held on 20-24 October, 2008 at Bangui in Central African Republic.

The Drought Early Warning System (DEWS) research initiative was integrated in the Climate Watch Africa programme of ACMAD. It is essentially a climate research initiative conducted by Climate and Environment Department (CED) of ACMAD, involving climate diagnostic research in climate monitoring, analyses and prediction at medium-range (dekadal), long-range (monthly) and seasonal timescales using current climate prediction tools based on ocean-land-atmosphere interactions and derived indices. The initiative is now geared towards decadal climate prediction timescale with envisaged technical and financial support from partners and collaborating institutions. The initiative will draw benefits PRESAO 2nd generation programme and recommendations of the recent AMMA/ENSEMBLES Workshop held on 26-30 May, 2008 at ACMAD, Niamey in Niger. The Workshop addressed on potentials of decadal forecasting, models' downscaling, latest advances in seasonal climate forecasting, validation of models used in seasonal forecasting, future climate scenarios, policy-relevant assessments of climate variability and climate change and research for improved delivery of products and services.

ACMAD other activities include Research and Development, and the capacity building and training for NMHSs personnel and other stakeholders. ACMAD has maintained support to African initiatives in the implementation of the UN Framework Convention on Climate Change (UNFCCC), the UN Convention to Combat Desertification (UNCCD) and the UN Convention on Biodiversity (UNCBD) among other conventions and protocols.