



**WEST AFRICA SUB-REGIONAL TRAINING WORKSHOP ON RISK ASSESSMENT
25 - 27 NOVEMBER 2009
DAKAR - SENEGAL**

**Status of Risk Identification in West Africa :
Concrete examples from sub-regional technical
institutions
Risk Identification Approach**

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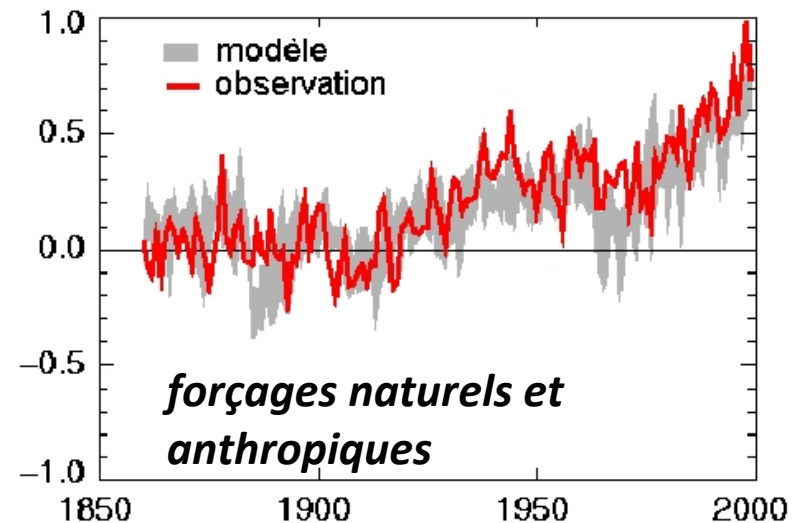
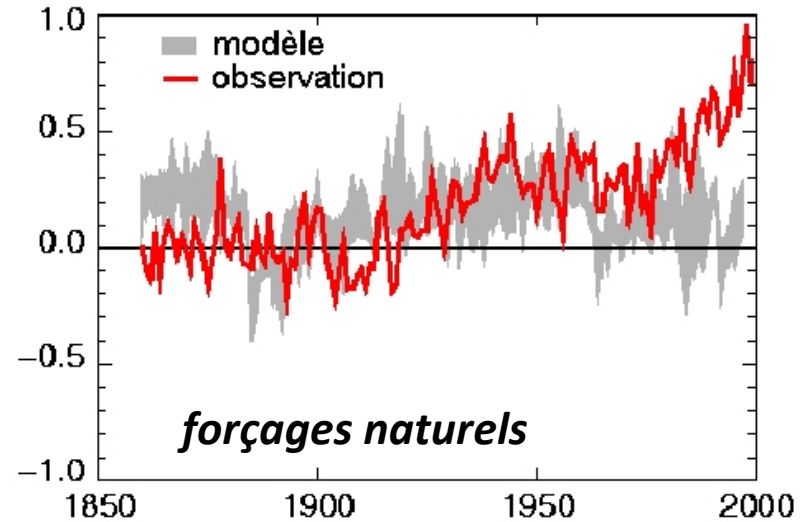
lbb55@yahoo.com – l_benaichata@acmad.ne

Plan de l'exposé

1. Quelques définitions
2. Intérêt du programme de réduction du risque pour la communauté météorologique
3. Améliorations récentes des produits de l'ACMAD
4. Les bulletins d'analyse et de prévision
5. Les Forum de prévision saisonnière
6. Le projet VigiRisC Afrique

CHANGEMENT CLIMATIQUE ET VARIABILITE

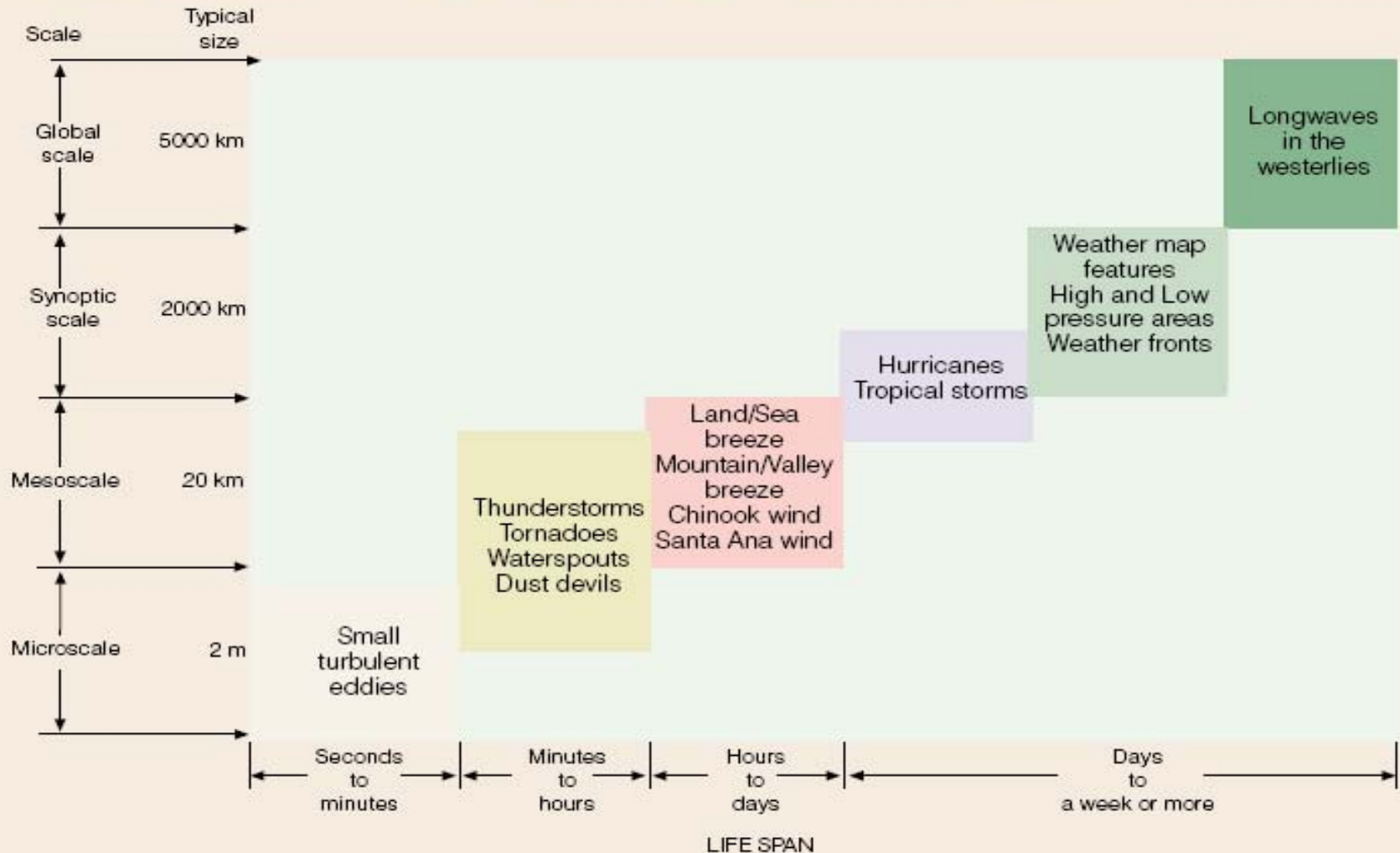
- CHANGEMENT CLIMATIQUE
 - Variation statistiquement significative de l'état moyen du climat ou de sa variabilité, persistant pendant une période prolongée (GIEC)
- VARIABILITE CLIMATIQUE
 - Variations de l'état moyen et d'autres variables statistiques du climat à toutes les échelles temporelles et spatiales autres que celle de phénomènes météorologiques particuliers



Température moyenne globale en surface simulée et observée au XXe siècle (GIEC, 2001)

Notion d'échelle

TABLE 7.1 The Scales of Atmospheric Motion with the Phenomena's Average Size and Life Span*



*Because the actual size of certain features may vary, some of the features fall into more than one category.

WMO Disaster Risk Reduction Programme

Disaster risk reduction is at the core of the mission of the World Meteorological Organization (WMO), and the NMHSs.

WMO, RMC, RSMC and the NMHSs, provides scientific and technical services:

- **observing, detecting, monitoring, predicting and early warning of a wide range of weather-, climate- and water-related hazards.**

Through a coordinated approach, and working with its partners, WMO & its “NETWORK” addresses the information needs and requirements of the disaster risk management community, effectively and in a timely fashion.

Climate Risk Management ACMAD' recent capacity improvement

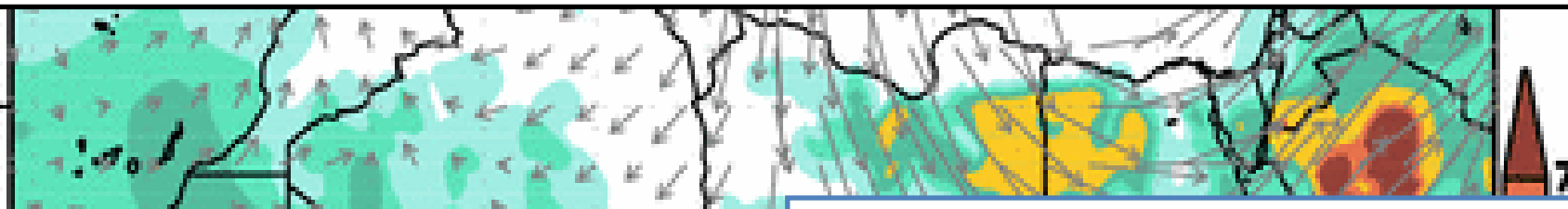
- i. Improved **capacity to deliver “tailored”** Weather & climate information services and products
- ii. Improved capacity **in the user community** to effectively use and demand weather/climate information .(EWS food security, health)
- iii. Increased **awareness and demand** of weather & climate risk management techniques
- iv. Improved contribution to effective **early warning *and response systems*** for climate-related hazards (Vulnerability aspects, relations with **SNMHS**, Regional Centers, CILSS,FEWSNET, **IFRC**, UNICEF....)
- v. Improved communications and dialogue with **Medias**

ACMAD' KEY PRODUCTS For Disaster Risk Reduction

Productivité de l'ACMAD

35

30N



7

Bulletin de prévisions (DPT):

1. Bulletin 24h

**2. WEST AFRICA WEATHER
BULLETIN**

**3. Bulletin Spécial Sahel (Analyse
de la décade passée)**

Bulletin de prévisions (DCE) :

1. Bulletin climatique décadaire

**2. Bulletin de veille climatique
pour l'Afrique (Mensuel)**

**3. Bulletin Climat et Santé
(Mensuel)**

4. Bulletin Spécial El-Niño

5. Bulletin PRESA (Saisonnier)

5N

EQ

20W 15W 10W 5W 0 5E 10E 15E 20E 25E 30E 35E 40E 45E

Daily forecast products

Continental Forecast Bulletin

CENTRE AFRICAIN POUR LES APPLICATIONS DE LA METEOROLOGIE AU DEVELOPPEMENT



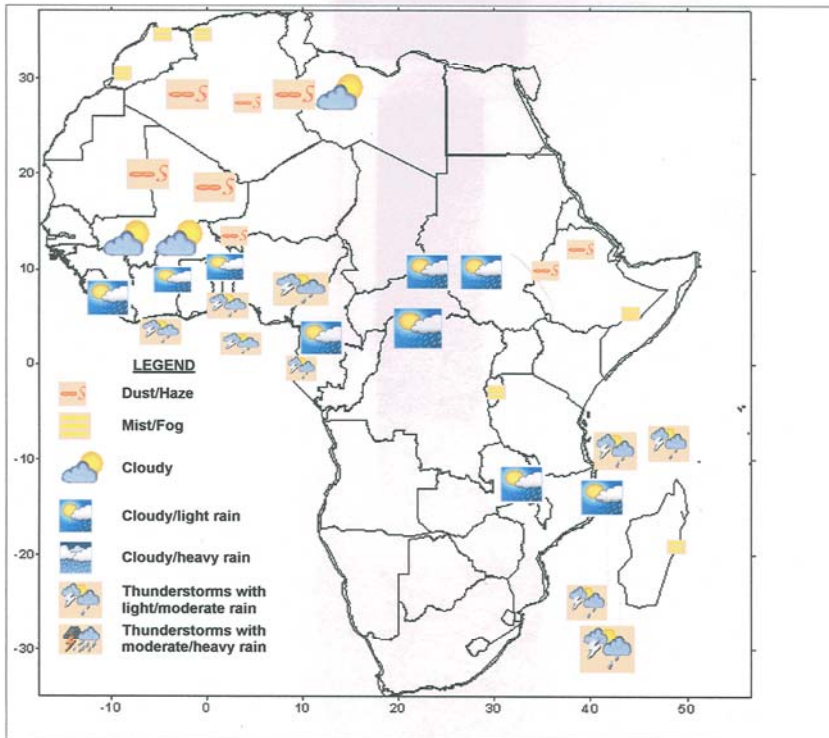
AFRICAN CENTRE OF METEOROLOGICAL APPLICATIONS FOR DEVELOPMENT

Institution Africaine parrainée par la CEA et l'OMM

African Institution under the aegis of UNECA and WMO

CONTINENTAL FORECAST BULLETIN N°5108
VALID FOR TUESDAY 22ND APRIL 2008

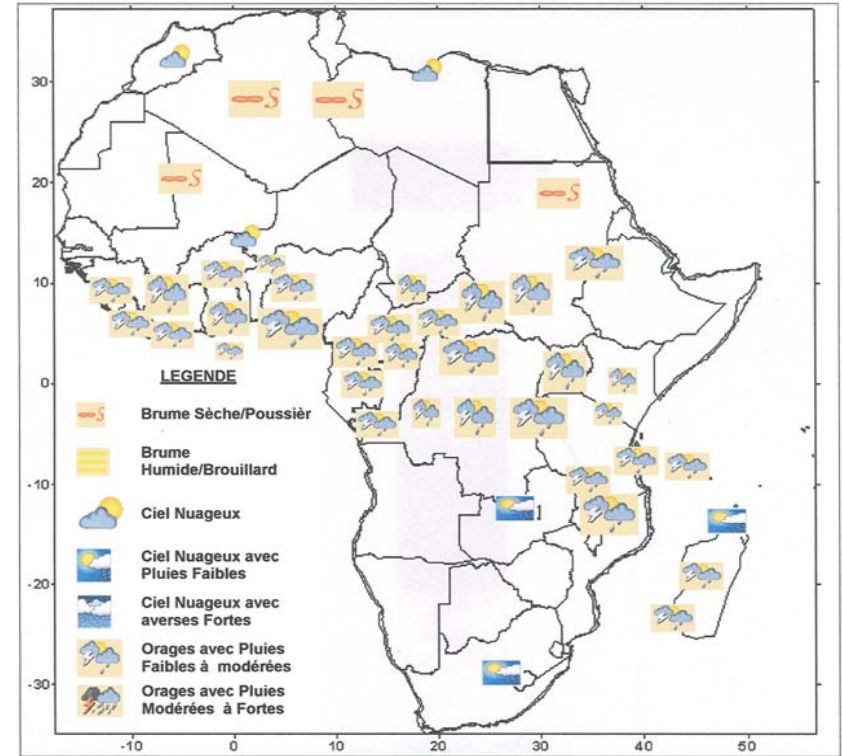
SIGNIFICANT WEATHER FORECAST : MORNING OF TUESDAY 22ND APRIL



EVENT OF THE DAY



TEMPS SIGNIFICATIF PREVU : APRES-MIDI DU MARDI 22 AVRIL



TEMPERATURES MAXI AND MINI PREVUES

VILLES	MAXI	MINI	VILLES	MAXI	MINI	VILLES	MAXI	MINI	VILLES	MAXI	MINI
ABIDJAN	33°C	27°C	COTONOU	32°C	27°C	LILONGWE	26°C	16°C	NAMEY	44°C	32°C
ACCRA			DAKAR	27°C	21°C	LOME	34°C	27°C	NOUAKCHOTT	37°C	23°C
ADDIS ABABA			DAR-ES-SALAM	30°C	23°C	LUANDA			OUAGADOUGOU	42°C	32°C
ALGER	24°C	09°C	DOUALA	32°C	25°C	LUSAKA	29°C	13°C	PLAISANCE	29°C	23°C
ANTANANAR.	25°C	13°C	HARARE			MAPUTO	28°C	17°C	PRETORIA	25°C	07°C
BAMAKO	28°C	24°C	KHARTOUM	43°C	28°C	MASERU	19°C	05°C	RABAT	17°C	10°C
BANGUI	33°C	24°C	KIGALI			MANZINI			SAL	24°C	20°C
BANJUL			KINSHASA	32°C	23°C	MONROVIA			SEYCHELLES	32°C	26°C
BRAZZAVILLE	32°C	24°C	CAIRO	40°C	20°C	MORONI			TRIPOLI	33°C	23°C
CONAKRY			LIBREVILLE	31°C	21°C	NDJAMENA	45°C	30°C	TUNIS	26°C	14°C
			KAMPALA	25°C	18°C	NAIROBI	24°C	15°C	WINDHOEK	24°C	07°C

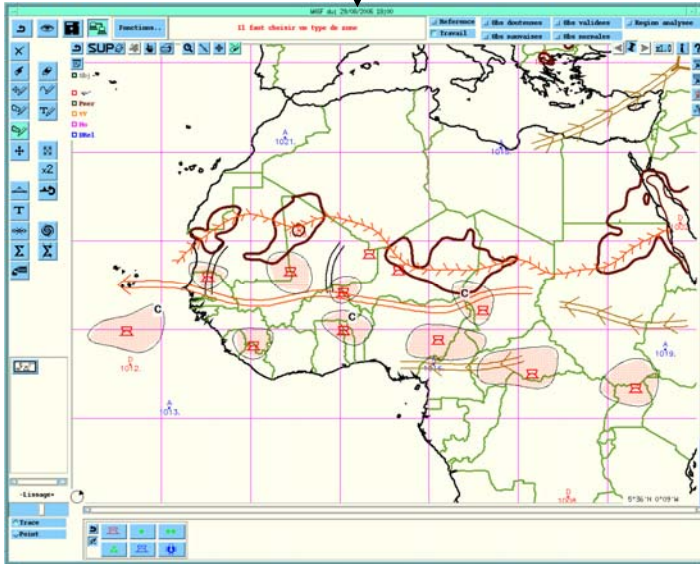


Daily Synthesis analysis and forecast products

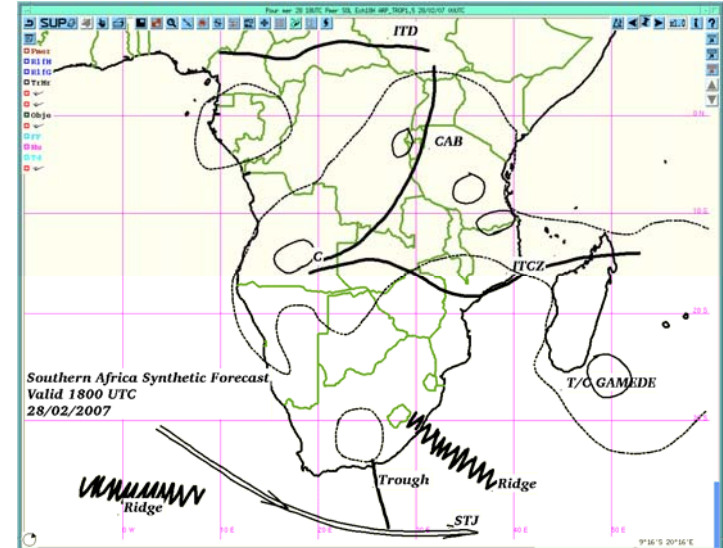
West Africa(High Impact Weather) Southern Africa



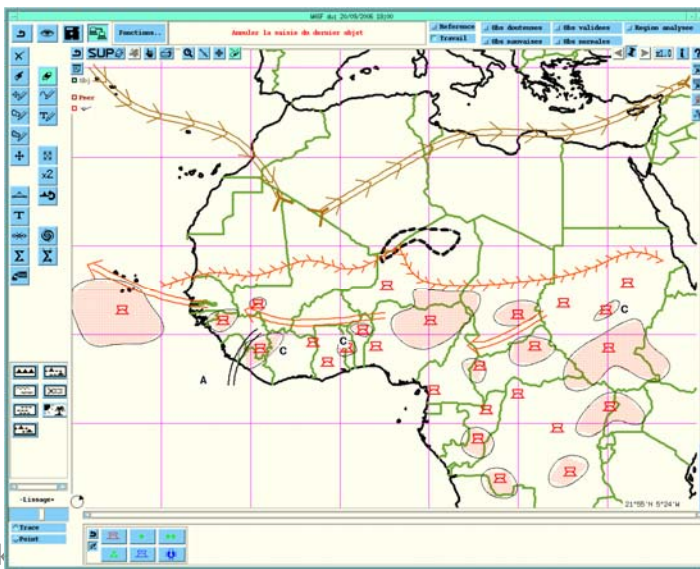
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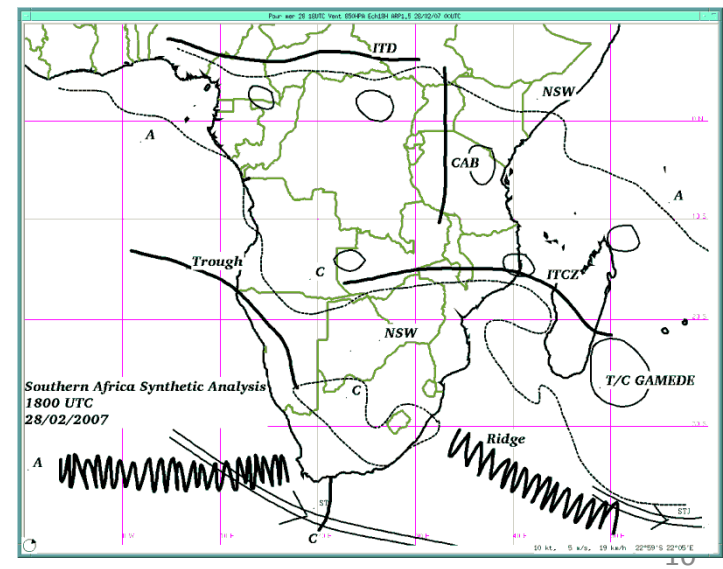
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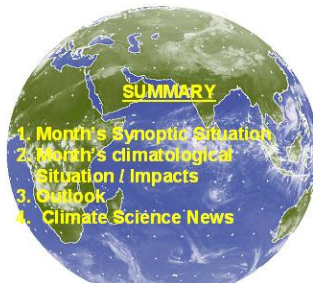
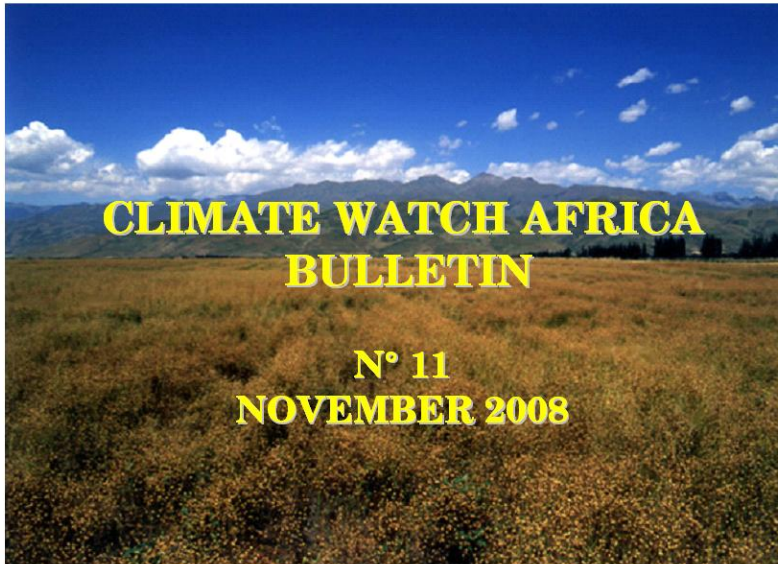


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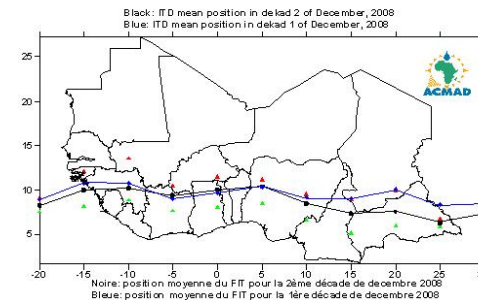


- **HIGHLIGHT:** The highest rainfall of about 300mm was estimated over eastern Mozambique and central Madagascar. The southern Africa countries are expected to experience the highest rainfall associated with floods.

1. GENERAL SITUATION :

1.1 SURFACE

- **Azores high:** Pressure at 1035hPa strengthened by 3hPa compared to the last dekad and shifted southwest. Its mean position was observed at 40°N/25°W with a ridge over south Morocco, Mauritania and north Mali.
- **St. Helena high:** Pressure at 1023hPa weekend by 3hPa and shifted southeast at 34°S/12°W with an extended ridge over south Atlantic Ocean.
- **Mascarene high:** Pressure at 1025hPa strengthened slightly by 1hPa compared to the previous dekad and shifted northeast at 38°S/62°E with an extended ridge over Indian Ocean.
- **Saharan thermal low:** Pressure at 1008hPa maintained its intensity compared to the past dekad and shifted southeast at 10°N/07°E with an extended trough over southwest Niger, north Benin and Nigeria, and south Chad.
- **Inter-Tropical Discontinuity (ITD) :** Between the first and the second dekad of December, 2008, the ITD had southward displacement over the eastern and western parts over central Africa countries and Gulf of Guinea countries respectively. However, it had a slight displacement to the north over the central part. It's mean position was observed at 8.3°N over longitude 20°W; at 10.0°N and 10.2°N over west and central east Guinea respectively; at 9.4°N over northeast Côte d'Ivoire; at 10.0°N over extreme northeast Ghana; at 10.4°N and 8.5°N over west and east Nigeria respectively; at 7.3°N and 10.1°N over southwest Chad respectively; at 7.6°N and 6.3°N over north and northeast Central African Republic respectively and at 7.3°C over south Sudan.



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

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Climate and Health



HIGHLIGHT: High relative humidity, favourable temperature and increased biomass cover will lead to high incidence of malaria in southern part of Gulf of Guinea countries, central Africa countries, western parts of GHA countries or eastern parts of Southern African countries. The Harmattan wind, over West Africa countries will be associated with dust episodes causing ailments such as meningitis, flu, respiratory infections (bronchitis, pneumonia), asthma, sinus others.

1. CLIMATIC AND ENVIRONMENTAL CONDITIONS OVER AFRICA

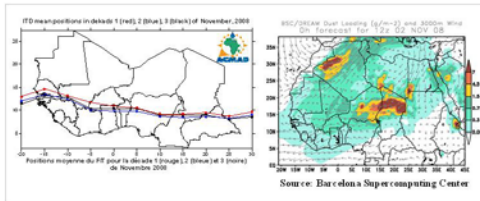
1.1 Inter-Tropical Discontinuity (ITD)

During the first to second decade of November, 2008, the ITD migrated southwards by about 2 degrees of latitude on the western Sahel, while it remained quasi-stationary in the eastern part over northern Nigeria, northern Cameroon or southern Sudan. Between the second and third decade, the ITD remained quasi-stationary. The southward migration of the ITD normally lead to reduction of moisture influx over the Sahel countries with the invasion of the Harmattan via (dry and dusty) over the region.

1.2 Dust Haze

During the month of November, 2008, episode of dust haze/sand storm were observed over most of northern and West Africa countries such as: Mali, Niger, le Chad, central Sudan, Burkina Faso, Benin, Mauritanie, Togo, Ghana, north Cameroon, Senegal, Liberia, Sierra Leone and Guinea.

The map below shows dust events on 2nd November, 2008 over most of northern Africa with important dust load particles (1.5 to above 7 g/m²) over central Chad, eastern Niger, southern Libya, southern Egypt and northern Algeria.



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Water Resources



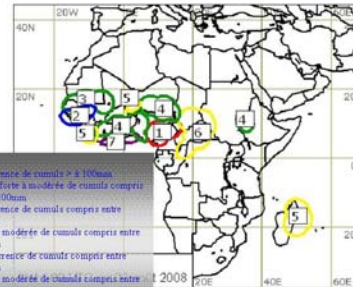
PROJET – PREVISION HYDROLOGIQUE SUR LE BASSIN DU NIGER

BULLETIN PREVISION HEBDOMADAIRE DES PRECIPITATIONS

21 Août 2008

Bulletin numéro 12

Prévision faite le 21 Août 2008 Valable du 22 au 28 Août 2008



- Légende**
1. Forte occurrence de cumul > 4-100mm
 2. Occurrence forte à modérée de cumul compris entre 75 et 100mm
 3. Forte occurrence de cumul compris entre 50 et 75mm
 4. Occurrence modérée de cumul compris entre 25 et 50mm
 5. Forte Occurrence de cumul compris entre 25 et 50mm
 6. Occurrence modérée de cumul compris entre 25 et 50mm
 7. Forte occurrence de cumul compris entre 0 et 25mm

Légende des occurrences: 0 - 20 : très faible occurrence ; 20 - 50 : faible occurrence

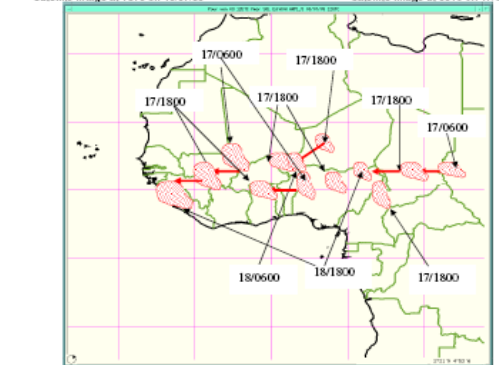
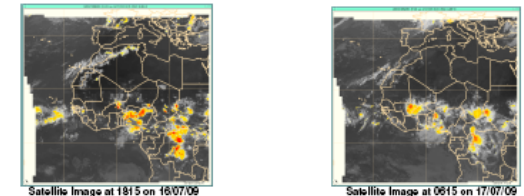
Humanitarian & Relief



Weather Watch & Prediction

IFRC Climate Risk Bulletin n°22

17th July 2009



Storms Track Forecast

previ@acmad.ne

Veille & Prévision Météorologique

SPECIAL SAHEL N°. 4

02 -12 Juin 2008



Image IR du 18 Juin 2008 (12h) France

INDICATS

- Les Conditions atmosphériques actuelles maintiennent sur le Sahel avec des Températures Humides et des vents très élevés de l'ordre de 16-21 et 21-31 degrés Celsius respectivement.
- Des perturbations *philoconiques* locales apporteront des précipitations dibles à moyenne sur le sud du Sahel.

Situation Météorologique

Durant la semaine écoulée au mois de mai, les températures dans la zone sahélienne ont restées élevées, les températures maximales enregistrées sont de l'ordre de 40-41 C. Les températures minimales de nuit sont de 25 et 26 C.

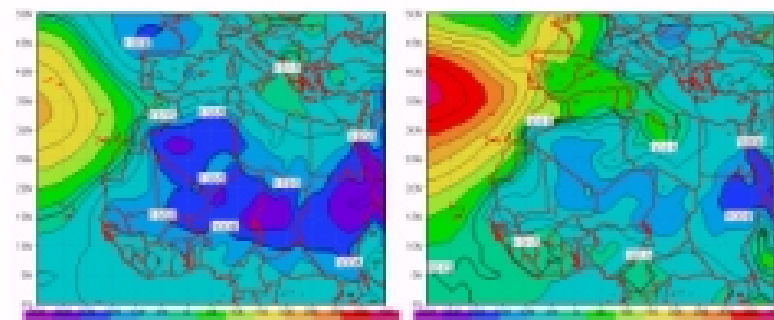
La situation météorologique a été marquée par un passage d'un système dépressionnaire au travers de la zone sahélienne provoquant des précipitations sur le Sahel méridional (Fig. 11).

Le jet d'Est difficile est resté dible pendant une bonne partie de la semaine, s'accompagnant de fortes pluies (Fig. 21).

Les perturbations *philoconiques* ont été au sud d'origine; on a eu un coup de vent, et la possibilité d'apporter des précipitations.

11a): Moyenne de la pluie au 21 au 26 mai

11b): Précip. (T.6) ECHWF au 21 mai pour le 26 juin

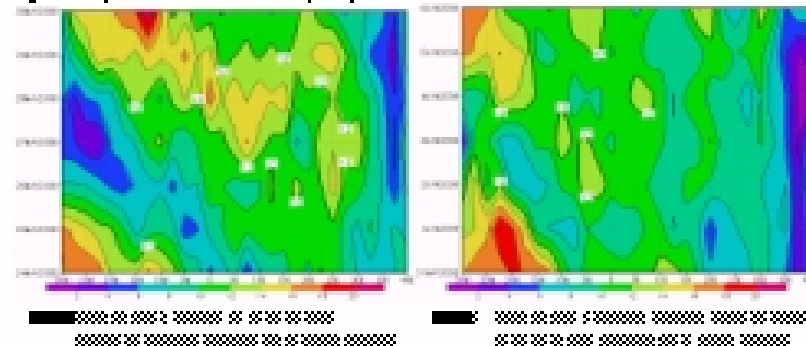


L'atmosphère

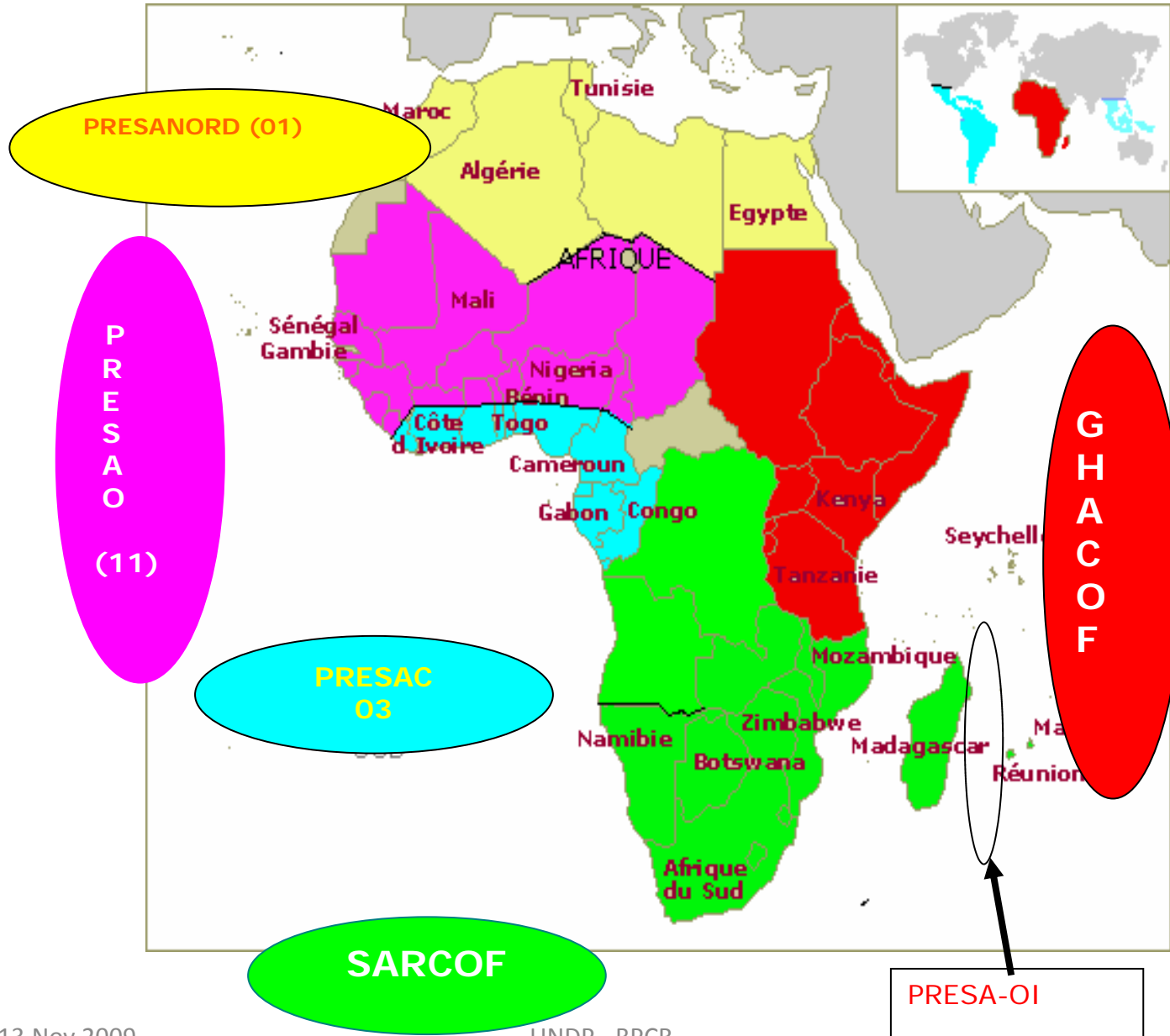
La période sera caractérisée par la présence de la cellule de l'anticyclone des Açores sur le High et les des pressions relativement élevées sur le Sahel (Fig.12). Parallèlement, l'anticyclone de Sao Paulo, apportera des pressions sur le côté de l'Atlantique.

Le jet d'Est difficile restera dible sur la zone, mais se renforcera vers la fin de la période (Fig.26)

Le temps restera chaud, avec des perturbations *philoconiques* locales, apporteront des précipitations dibles à moyenne sur le sud du Sahel. La situation sera plus désagréable (T.6) et de une perturbation organisée pour la fin de la semaine sur le Sahel méridional.

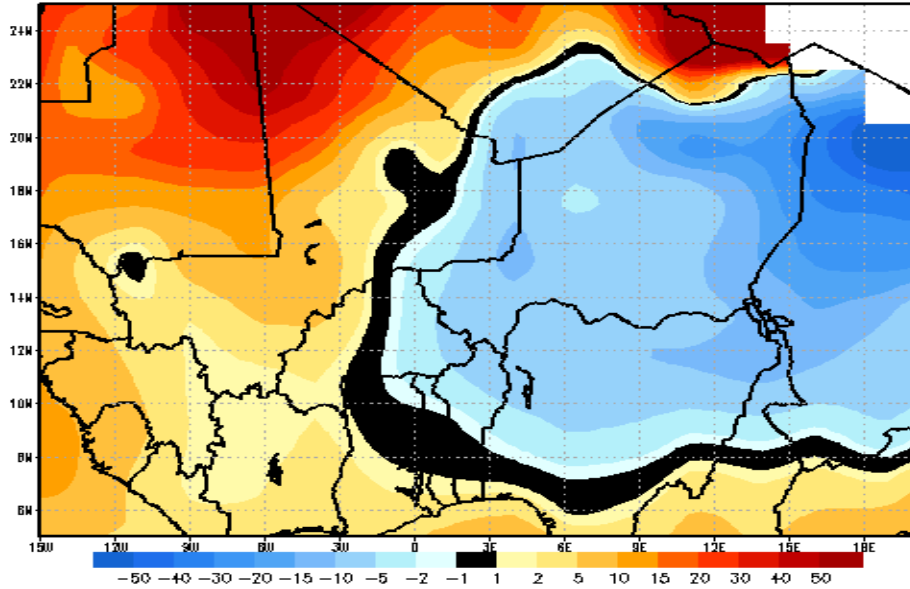


Seasonal Forecast Forums

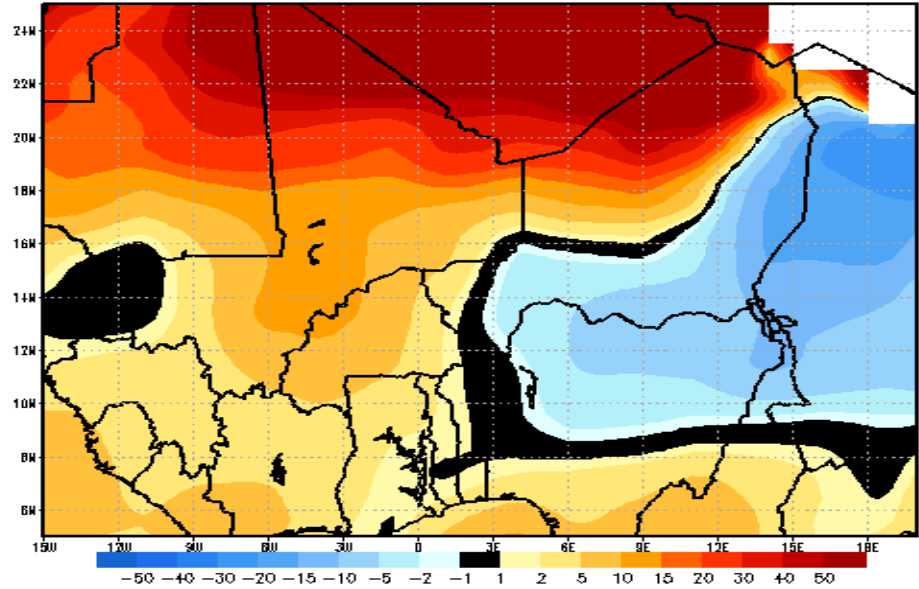


PRECIPITATIONS JJAS 2/2

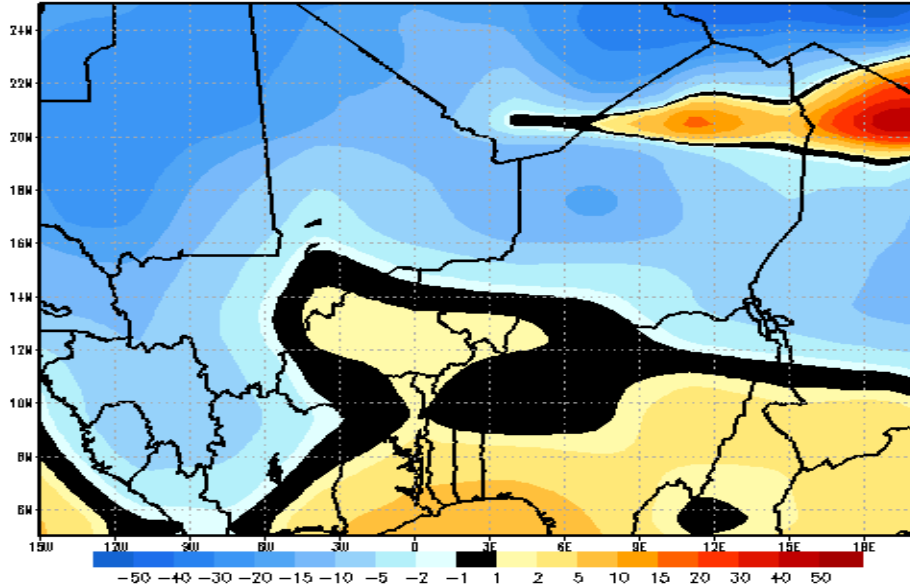
MEAN JJAS PRECIP CHANGE (%) GFDL B1 (2011-2040)



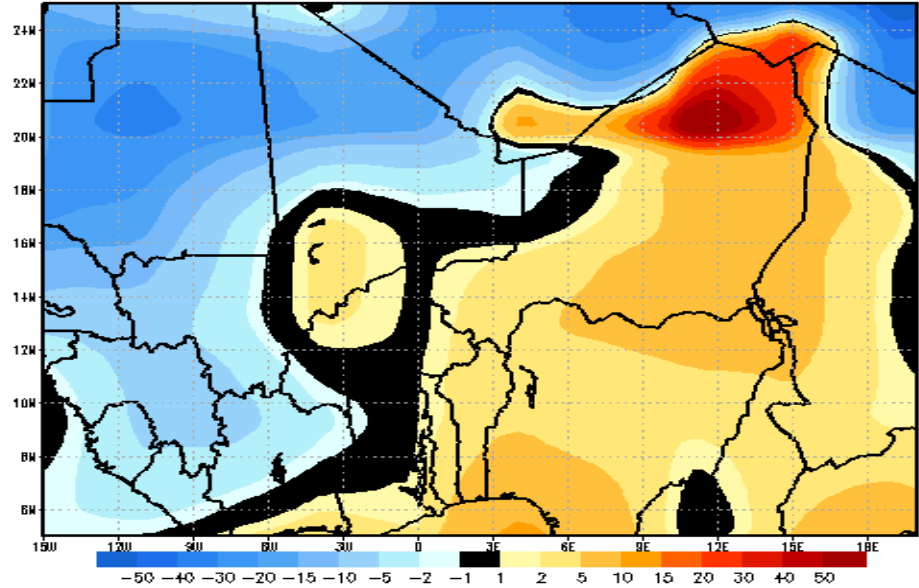
MEAN JJAS PRECIP CHANGE (%) GFDL A2 (2011-2040)



MEAN JJAS PRECIP CHANGE (%) CCCMA B1 (2011-2040)



MEAN JJAS PRECIP CHANGE (%) CCCMA A2 (2011-2040)





Bulletin de Prévision Saisonnière des Pluies
Juillet-Août-Septembre 2009
en Afrique de l'Ouest, Tchad et Cameroun
PRESAO-12 (21-22 mai 2009)

ACMAD

En collaboration avec:

Météo-France, IRI, ECMWF, UKMO, NOAA

ABN, AGRHYMET et

Dix sept (17) Services Météorologiques et Hydrologiques Nationaux (SMHN) :

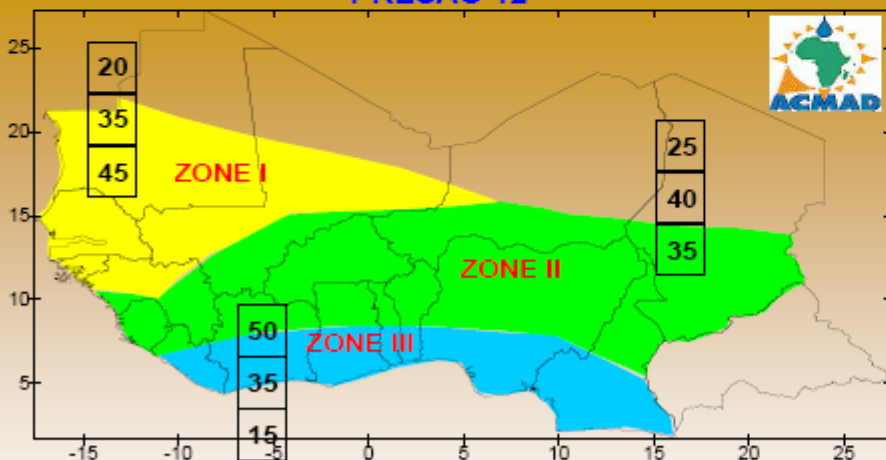
Guinée Bissau, Mauritanie, Guinée Conakry, Gambie, Nigeria, Togo, Mali, Cameroun, Côte
d'Ivoire, Bénin, Ghana, Sénégal, Burkina Faso, Niger, Tchad, Liberia, Sierra Leone

Avec le soutien de



RIPICSA

PREVISION CONSENSUELLE JAS 2009
PRESAO 12



Seasonal Forecast of Precipitation Bulletin for
July-August-September 2009
West Africa, Chad and Cameroon
PRESAO-12 (21-22 may 2009)

ACMAD

With collaboration of:

Meteo France, IRI, ECMWF, UKMO, NOAA

ABN, AGRHYMET and

Seventeen (17) National Meteorological and Hydrological Services (NMHSs) :

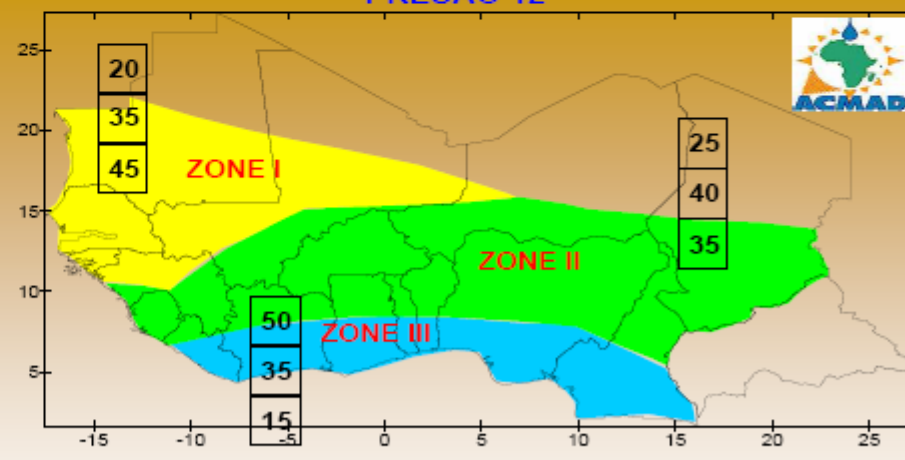
Guinea Bissau, Mauritania, Guinea Conakry, Gambia, Nigeria, Togo, Mali, Cameroon, Côte
d'Ivoire, Benin, Ghana, Senegal, Burkina Faso, Niger, Chad, Liberia, Sierra Leone

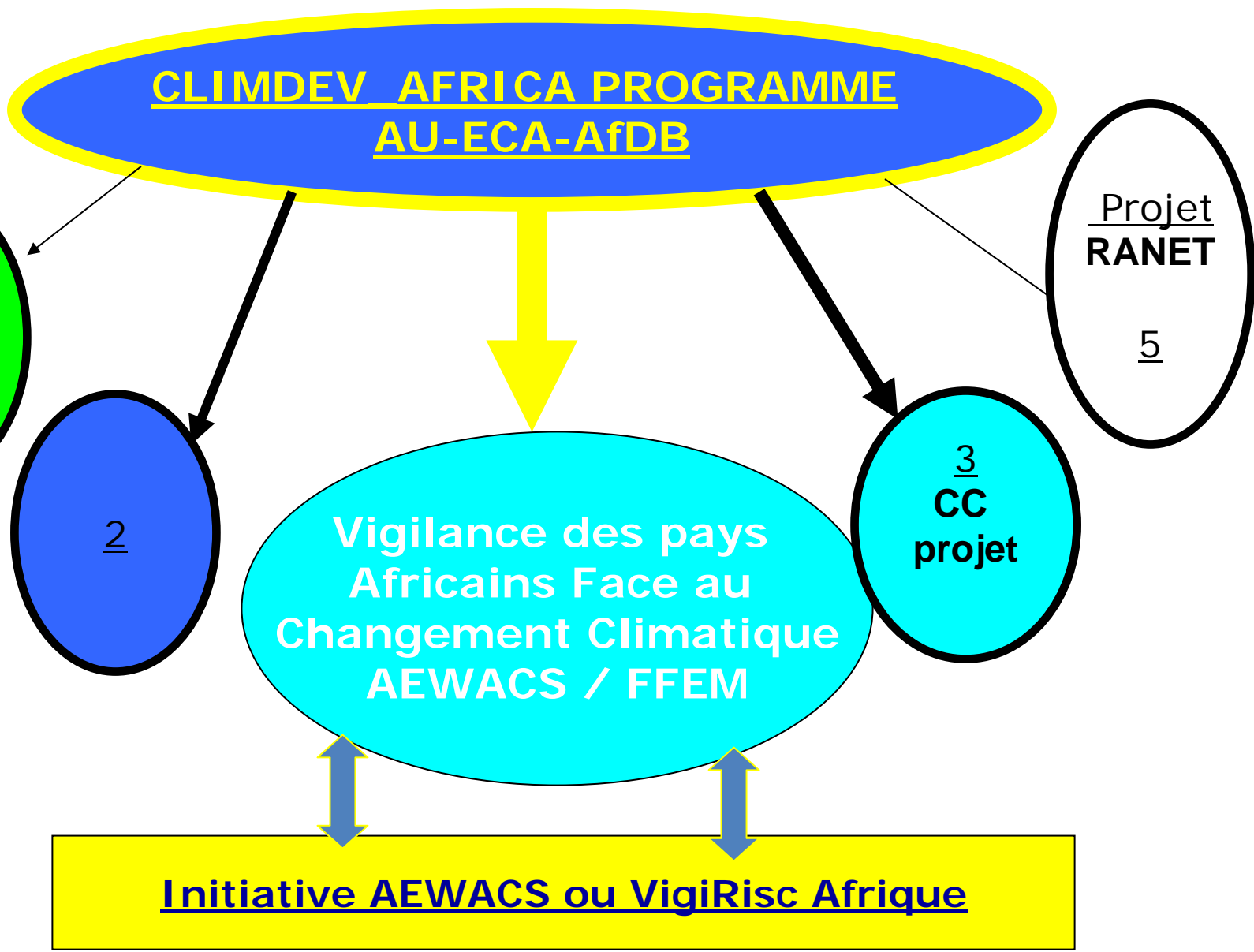
With support of



RIPICSA

CONSENSUS SEASONAL FORECAST JAS 2009
PRESAO 12





ACMAD-WHF & AfDB MoU



**APPUI à la MISE EN PLACE DE SYSTEMES DE VIGILANCE face à la VARIABILITE
et au CHANGEMENT CLIMATIQUE en AFRIQUE**

Projet “Vigilance et Gestion Intégrée du Risque Climatique (VigiRisC Afrique)”

Une contribution au programme ClimDevAfrica

“African Early Warning and Advisory Climate Services (AEWACS Project)”

TOWARDS ADAPTING TO AN EVER CHANGING CLIMATE



A continental project : AEWACS (VigiRisC) African Early Warning and Advisory Climate Services

This project will help ACMAD play its continental role within the framework of ClimDev Africa Programme

AEWACS project must be regarded as a component of ClimDevAfrica, and perhaps a precursor of its implementation

(18-19 March 2008 : ClimDev Africa experts meeting, with AU, UNECA, AfDB confirmed the coherence of AEWACS project with the various objectives and results of ClimDevAfrica)

Le projet VigiRisC permettra à l'ACMAD de jouer pleinement son rôle continental dans le cadre du programme ClimDev Africa.

Pouvant servir de précurseur au programme ClimDevAfrica, le projet VigiRisC montre la voie vers des actions concrètes qui pourront être reproduites dans le cadre de ce programme.



AEWACS - VigiRisC Afrique

Objectives :

Reinforcement of adaptation capacity of African countries to climate variability increasing

- **Capacities of African countries for the prevention of risks and socio-economic impacts related to climate variability and climate change are reinforced through relevant and adapted tools and services of climate early warning and advisory .**
-

Objectifs :

Renforcement des capacités d'adaptation des pays africains face à l'accroissement de la variabilité climatique

- **Les capacités pour la prévention des risques et des impacts socio-économiques liés à la variabilité et au changement climatique, seront renforcés par la mise en œuvre de produits et services de vigilance adaptés à différents secteurs.**



VigiRisC Afrique

Domain of activities:

- **Food security** : rainfed agriculture, pastoralism
 - **Water resources** and risks associated with river flow (Congo, Niger...)
 - **Health** : malaria, meningitis or other diseases
 - **Coastal zone Civil protection** : high tides and sea swell
 - **Severe and high impact weather phenomena** (drought, floods, high precipitations, strong wind)
-

• Secteurs considérés :

- **sécurité alimentaire** : agriculture pluviale, pastoralisme transhumant...
- **ressources en eau** et risques liés au régime hydrologique des grands fleuves (en particulier Niger et Congo)
- **santé** : paludisme, méningite et autres maladies émergentes
- **Protection civile en zone côtière** : surcotes et ondes de tempête
- **événements extrêmes ou à fort impact** (sécheresses, inondations, précipitations intenses, vents forts)



AEWACS – VigiRisC Afrique

- Some examples of demonstrative pilot products :
 - Expression of needs, partnership and co-funding
-
- Nouakchott : coastal floods with high tide (AFD)
 - Niger basin : environmental vigilance of Kandadji dam (AfDB)
 - Congo basin : Kinshasa flooding (FICR)
- ...

MERCI DE VOTRE ATTENTION