



**AFRICAN CENTRE FOR METEOROLOGICAL
APPLICATIONS FOR DEVELOPMENT**

CLIMATE AND ENVIRONMENT DEPARTMENT

**REGIONAL CLIMATE OUTLOOK FORUM FOR WEST AFRICA
CHAD AND CAMEROON – PRESAO-15**

Ouagadougou, Burkina Faso, 24-25 May 2012

REPORT

EXECUTIVE SUMMARY

The 15th Regional climate Outlook Forum for West Africa, Chad and Cameroon (PREASO-15) was held in Ouagadougou, Burkina Faso, from 24th to 25th May 2012. The forum was preceded by three days of pre-forum training and seasonal forecast production. Experts from National Meteorological and Hydrological Services of 18 participating countries were introduced to the use available seasonal forecasting tools and products. Experts from Meteo-France, IRI and ACMAD provided lectures, hands on training and inputs for interpretation of forecasts products as well as preparation of consensus seasonal forecasts .

Outputs from national statistical models, Climate Prediction Tool (CPT) developed by IRI at Columbia University, expert climate knowledge and analysis including the identification of analog years, Global Producing Centers for Long Range Forecasts and Regional Centres were considered to derive a consensus outlook product valid for July-August-September 2012 over the region. The consensus product was presented to media and user sectors on May 24, 2012 with discussions on impacts, advices and action options. The outlook including suggested advices was distributed to media on May 25, 2012. It contained the following information:

- *Disruptions in the distribution of precipitation during the season over the region very likely with possible impacts on agriculture activities;*
- *below normal precipitation and normal to late start of precipitation season very likely over the northern part of Senegal, Southern Mauritania and adjacent areas in Mali;*
- *Above normal precipitation very like around lake Chad in Niger, Nigeria, Chad and Cameroon*

The region as a whole is not expected to experience significant precipitation deficits leading to drought. However, light precipitation deficits, disruptions in the distribution of precipitation during the season and late starts may lead to significant impact. The following advices and options for action were provided by experts given the expected climate conditions:

For northern Senegal, southern Mauritania and adjacent areas in Mali

- ✓ prioritize low land cropping
- ✓ sow crop varieties very resistant to water stress on highlands;
- ✓ choose ploughing methods which favor water conservation;
- ✓ choose short-lived and/or water stress resistant food plants;
- ✓ plan an early start of off season activities;
- ✓ promote crop diversification;
- ✓ Improve and strengthen emergency assistance particularly over locations already under food and nutrition crisis;
- ✓ increase vigilance in the management of conflicts related to land use between agricultural and pastoral practices with special attention to areas under crisis;
- ✓ prepare early collection and fodder storage;
- ✓ plan an early departure of herds for transhumance;

For Lake Chad area, most of the agriculture belt of Chad and Burkina Faso

- ✓ prioritize upland cropping;

- ✓ encourage rice cropping in low land areas;
- ✓ plan for management of excess water in dams and reservoirs;
- ✓ maintain levees to avoid flooding in case of excess rainwater;
- ✓ in case of early sowing, use long-lived food plants;
- ✓ plan more manure to mitigate soil erosion by excessive rainfall;
- ✓ prepare for more abundant collection and storage of fodder;
- ✓ move away the animals from the rivers in order to avoid drowning;
- ✓ vaccinate the animals to avoid the epidemics;
- ✓ plan late departure of herds in transhumance;
- ✓ prepare contingency plans for floods;
- ✓ strengthen disease surveillance systems and prepare for early detection and treatment of water borne diseases;

Participants welcomed the initiative to include advices to the expected climate conditions in the outlook bulletin and urged ACMAD and AGRHYMET to reconsider a joint organization of future climate outlook fora in the region. Participants were introduced to the WMO/ETCCDI indices and recognized the need prepare a report on climate indices for the Sahel starting in the 1970s given the multidecadal variability signal in the region's precipitation time series.

GENERAL SUMMARY OF THE WORK

1. OPENING

1.1 The forum objectives and expected outcomes was presented to the public via the Burkina Faso Broadcasting Services on Sunday May 20, 2012. The opening ceremony began at 09.00 hours on Thursday, 24 May 2012 at the Burkina Faso Directorate General for meteorology, in Ouagadougou.

1.2 Mr. Ali Jacques Ngarane, Director General of the Burkina Faso meteorological welcomed the participants and recalled the value of long range forecasting for West African countries under climate variability and change.

1.3 Mr. Adama ALHASSANE DIALLO, Director General of ACMAD thanked the government of Burkina Faso for accepting to host for a second time the event and expressed wishes for a fruitful forum.

1.4 Dr. Jean-Pierre Ceron, representative of the WMO Commission for Climatology thanked Burkina Faso government for its hospitality. He recalled opportunities for better decision making related to the development of seasonal forecasting. He summarized WMO initiatives on climate services with the establishment of the Global Framework for Climate Services to guide and enable the evolution from climate products to effective climate services with more interactions and involvement of user communities.

1.5 The opening ceremony ended with the speech of his Excellency Mr. Gilbert Noël Ouedraogo, Minister of transport, postal services and internet economy. He recalled impacts of climate variability in the Sahel during the past few years with more than 200 mm of precipitation recorded for a single and extreme flooding event on September 01, 2009 in Ouagadougou. Above one million people were affected by the 2010 floods in many countries of the region and up to 25% reduction in cereal production due to late onset and disruptions on the distribution of the 2011 summer precipitation. He thanked ACMAD and partners for choosing Burkina Faso to host the forum and wished a successful forum with delivery of the consensus climate outlook to meet the needs of users in the region.

2. ORGANIZATION OF THE FORUM

2.1 Agenda

2.1.1 The agenda included a pre-forum for 3 days and a forum proper during the last 2 days. The Pre-forum was held from 21 to 23 May 2012 to train national experts, exchange on new developments in seasonal forecasting and produce the climate outlook product presented and discussed during the forum. The pre-forum phase was mostly attended by experts from the climate community. The forum was well attended with climate experts, agriculture, food security specialists, water resource and disaster managers, humanitarian agencies, health experts and policy makers. The provisional agenda is provided in Annex I to this report.

2.2 Working arrangements

2.2.1 The participants agreed on the working hours and other practical arrangements for transportation, breaks and lunch. Noting that a number of participants were new to the forum, a brief introduction among the country and international experts was made to facilitate interactions throughout the forum. The list of participants in the meeting is provided in Annex II to this report.

2.2.2 The climate outlook bulletin prepared and distributed (see annex III) has been posted on the ACMAD and WMO web sites at:

http://www.acmad.org/fr/actualite/bulletin_presao15.pdf

<http://www.wmo.int/pages/mediacentre/news/documents/sahelrain.news.pdf>

3. GLOBAL®IONAL CLIMATE AND IMPACTS

3.1 Countries participants were presented with global climate anomalies of 2010, 2011 and the January to May 2012 period including related regional impacts by Global Climate Centres and ACMAD.

Atlantic SSTs were mostly above normal from January to April in 2010 and 2011. For the same period in 2012, below normal to normal patterns were dominant.

Since April 2012, the equatorial Pacific SSTs in the Nino region was close to normal after several months of below normal conditions. **It is expected that weak El Nino will develop during the second half of 2012.**

3.2 Over the Sahel, 2010 was a very wet year with similar conditions found back in the 1950s. The year was also characterized by many flooding events with more than a million people affected. 2011 featured disruptions in the distribution of precipitation within the season with late onsets significantly damaging crops and reducing food production. Recent estimates indicated that about 25% reduction in food production for 2011 and more than 18 millions Sahelians were under food insecurity (UNOCHA April 2012 report).

4. SEASONAL CLIMATE FORECASTS, IMPACTS AND COMMUNICATION

4.1 SEASONAL FORECASTING SYSTEMS, OUTPUTS AND CONSENSUS OUTLOOK

4.1.1 Since the late 1990s, each participating country to the forum developed multiple linear regression based statistical models linking SSTs patterns and seasonal precipitation for the country. A review was made of this process including provision by ACMAD of input SST indices for countries statistical models. A first output product was generated.

4.1.2 Global Producing Centres for Long Range Forecasts (eg. Meteo-France, UKMetoffice, NCEP, ECMWF, JMA, ...) and IRI as well as international multimodel Long range forecasting initiatives (eg EUROSIP...) provided dynamical single model and multimodel outputs for the July-September 2012. A consolidated product including single

and multimodel dynamical outputs, knowledge and understanding of the African climate, analysis of recent and expected conditions with related similar or analog years was presented as a product of the African Regional Climate Centre demonstration project at ACMAD.

4.1.3 The Climate Predictability tool developed by IRI was presented and used by countries to calibrate, validate and produce statistical seasonal forecasts as input to forecast discussions.

4.1.3 The outputs from expert knowledge, analysis of recent anomaly patterns and related trends, analysis of historical records and detection of similar years, analysis of single and multi model dynamical forecasting systems products as well as CPT products were discussed and a consensus outlook derived for July-September 2012 over the region.

Three thematic groups on agriculture and food security (Group 1), water and disasters (Group 2) and health (Group 3) were set up to revise the seasonal climate outlook and propose related advices and options for action to reduce potential negative effects and optimize benefits from positive effects. A plenary session was organized to collect inputs and prepare the outlook bulletin.

4.1.4 As a follow up of the ETCCDI/ACMAD workshop on climate change indices held in Banjul (The Gambia) in December 2011, a presentation was made on the ETCCDI indices and the new set of related maps generated with additional quality controlled station data provided by countries from January to April 2012. This presentation guided discussions for further data analysis involving filtering out of natural variability related part in the magnitude of climate trends generated and presented. It was proposed to contact the WMO Regional Climate Centre for Europe to discuss collaboration in this regard;

4.2 The Forum

4.2.1 After the opening ceremony (see section I), Global producing centres for long range forecasts and IRI at Columbia university, presented to the audience their forecasting systems, processes and products with emphasis on the forecasts for the July-September 2012 period. Based on outputs from all forecasting tools and expert knowledge, ACMAD presented the climate outlook produced during the pre-forum. Thematic working groups were set up to revise the outlook and include advices and action options. A presentation of the final consensus outlook document was made by ACMAD.

4.3 Climate impacts, risk assessment and communication

4.3.1 Experts from countries and regional centres presented new developments on climate and health with emphasis on estimating malaria and meningitis risks given climate conditions, communication of climate information in 2011 in Burkina Faso, Mauritania and Mali, development of national scale advices for the agriculture and food security sector in Mali. The UK Met office made an introductory lecture on new development in forecasting monsoon onset in the Sahel and provided available experimental products available. It was proposed to consider combination of onset probabilistic forecasts made in April with an update in May together with extended, medium and short range forecasts to ensure a better support for farming activities.

Communication practices were presented by each country including elements to better disseminate climate information for the 2012 precipitation season:

- As a general advice, the forum suggested that given the current food insecurity over many countries, seasonal forecasts could be presented in comparison with last year and 2010. The need for users to follow closely updates should be emphasized.
- In Mali, advices on appropriate seed varieties, sowing dates including latest sowing dates will be given. Briefings at the Prime Minister's office and to members of parliament using analog years to communicate uncertainties will be provided;
- In Mauritania, national outreach fora will be organised to communicate on the two most likely scenarios, expected number of rainy days and encouraging strategic use of seasonal forecasts and updates;
- In Guinee Bissau, the Meteorological service will organize one day outreach with the press and development organizations in the country;
- In Chad, climate information will be disseminated via agro meteorological bulletins, the multidisciplinary working group regular meetings, information notes to government and other interested organization and projects; roving seminars and meeting will be organized with the ministry of agriculture and farmers ; the media and the ministry of agriculture, community leaders and the public are invited to meetings on advices based on climate information;
- Analog years are communicated in Niger to policy makers and the public; agro meteorological bulletins are used to disseminate information to the farming and livestock community;
- Media presentations, bulletins to the public and meetings with local communities are the main opportunities to disseminate climate information in Nigeria were climate prediction information is generated by January each year;
- Seasonal forecasts is forwarded to agriculture and health ministries as well as regional offices of the national meteorology department in Cameroon;
- Briefings at the multidisciplinary working group meetings, group discussions with farmers and the ministry of agriculture are organized in Guinea Conakry;
- Press briefings, meetings with civil protection and dams management services are organized in Ivory coast;
- Monthly meetings with the ministry of agriculture in the framework of the early warning system project and dissemination of information note to the ministry of environment are preferred in Togo;
- Climate information bulletin is sent to the ministry of water and the disaster communities; information on occurrences of spells, season length and profile is the subject of discussions and advices with the vice presidency in The Gambia;
- Press briefing with partners and farmer federations, information note to meeting of members of government, agro meteorological bulletins to farmers, meetings with mayors, roving seminars are opportunities to disseminate climate information including sowing and harvesting dates, observed mean precipitation, start and withdrawal of seasonal precipitation in Burkina Faso;

Countries are using climate bulletins, information notes, oral presentations to focus groups, roving seminars, websites, fax, emails, tv, press and sms to disseminate climate information.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Based on presentations and discussions under the previous agenda items, the forum concluded and recommended the following:

- To ensure consistency on dissemination of updates, the forum recommended the use of the same media considered during communication of initial climate information;
- The forum recognized that verification of PRESAO products from user's perspective is critical for communication and recommended systematic verification by all countries of all the 15 PRESAO products;
- To strengthen synergy between partner institutions and ensure consistency, the forum urged ACMAD and AGRHYNET to jointly organize next fora;
- The global producing centres are encouraged to continue developments in onset prediction and expand product portfolio to the number of rainy days, dry spells, start and cessation of precipitation dates;
- ACMAD and partners are encouraged to plan and organize long range forecasts training session for the region;
- To facilitate production of long range forecasts at national levels, the forum encourage NMHSs to include this key activity in the national component of the Global Framework for Climate Services;
- To improve the use of long range forecasts at regional level, the forum urged UNISDR and regional organizations to support dialogue and interactions between climate service providers and risk managers.

6. CLOSING

13.1 The forum (PRESAO-15) closed at 17:00 on Friday, 25 May 2012 with a speech of his Excellency the Minister of transport, postal services and internet economy and interviews with media (Press and TV). A presentation of forum results with emphasis on expected climate patterns and advices to the general public was made through the Burkina Faso government broadcasting service.

AGENDA

FORUM PROGRAMME– PRESAO-15 (Ouagadougou, May 21-25, 2012)		
	Welcome of participants	
May 21, 2012	<p>08 :30-09 :30 Registration</p> <p>Opening (09 :30- 10 :00)</p> <p>Chair : I.D (DG of meteorology - Burkina Faso) Rapporteur : Ghana/Burkina Faso</p> <p>09:30 – 09:40 Remarks by ACMAD</p> <p>09:40 – 09:50 Welcome address by the PR of Burkina Faso with WMO</p> <p>09 :50-10 :00 Group photo and coffee break</p> <p>Session 1 : Global and regional climate</p> <p>Chair : A. Kamga Rapporteur : Tinni/Senegal</p> <p>10 :00-11 :20 Global climate of 2010, 2011, Jan-April 2012 and regional impacts</p> <p>11:20 – 12:00 Regional climate and impacts in West Africa in 2011</p> <p>12:00 – 12:30 Regional climate trends from historical and recent observations</p> <p>12h30-14h00: Lunch Break</p>	NCEP/ACMAD ACMAD NCEP/IRI
	<p>Session 2: Seasonal forecasting with CPT and Dynamical Models</p> <p>Chair: ACMAD Rapporteur: Tinni/Serges</p> <p>14h00- 16h15 : Teleconnections&statistical models for seasonal forecasting with CPT</p> <p>16h15-16h30: Coffee Break</p> <p>16h30- 18h30: Data preparation and application for seasonal forecasting with CPT</p>	

<p>Day 2 May 22, 2012</p>	<p>09h00-09h20: Seasonal climate and regional weather forecasts within WASCAL</p> <p>09h20-10h30: preparation of seasonal forecasts with CPT</p> <p>10h30-10h45: Coffee Break</p> <p>10h45-12h30 : Preparation of seasonal forecast with CPT(continue)</p> <p>12h30-14h30: Lunch Break</p>	
	<p>14h30-15h10: Global centres seasonal forecasts systems and products (part1)</p> <p>15h10-16h30: CPT and countries statistical forecasts</p> <p>16h30 – 16h45: Coffee Break</p> <p>16h45- 17h30: Preparation and presentation of the consensus product</p>	<p>NCEP/ACMAD IRI/Countries experts</p>
<p>Day 3 May 23, 2012</p>	<p>Session 3: Climate Change indices in West Africa from historical Precipitation and temperature data</p> <p>Chair: KNMI/ACMAD Rapporteur: Azziz Barry/Spain-Guinee Conakry</p> <p>09h00-09h30: Regional products from the Banjul climate change indices workshop</p> <p>09h30-10h30: Additional products from countries (Nigeria, Niger, Gambia, Guinee)</p> <p>10h30-10h45: Coffee Break</p> <p>10h45-12h00: Additional products from countries + updated Regional products</p> <p>12h00-13h00: Introduction to CMIP5 and CORDEX-Africa datasets via the web based IRI data library interface</p> <p>13h00-14h30: Lunch Break</p> <p>14h30-18h00 Preparation and presentation of a first draft regional report</p>	<p>ACMAD/KN MI/IRI Countries</p> <p>Azziz Barry, A. Tank</p> <p>Alexandra Giannini /IRI</p> <p>ACMAD, A. Tank and A. Barry</p>



<p>Day 4 May 24, 2012</p>	<p>Opening Ceremony (09 :00- 10 :00)</p> <p>09h00-10h05: Welcome by DG of Meteorology and PR of Burkina Faso with WMO</p> <p>10h 05 –10h10: Speech by DG of ACMAD</p> <p>10h10-10h15 : Speech by President of RA1</p> <p>10H15-10h20 : Speech by WMO</p> <p>10h20-10h30: Opening speech by the Representative of Burkina Faso Government</p> <p>10h30-10h45 : Group photo and coffee break</p> <p>Session1: 2010 and 2011 Climate and Outlook for JAS 2012</p> <p>Chair: ACMAD/A. Kamga Rapporteur: S. Tinni</p> <p>10h45-11h00 : Global climate, regional impacts and outlook over West Africa by NCEP</p> <p>11h00-11h15: Global climate, regional impacts and outlook over West Africa by UKMet Office</p> <p>11h15-11h30: Global climate, regional impacts and outlook over West Africa by MeteoFrance</p> <p>11h30-11h40: Global climate, regional impacts and outlook over West Africa by IRI</p> <p>11h40-12h10: African Regional climate Centre pilot Seasonal forecasts products and Consensus Climate Outlook for JAS 2012</p> <p>12h10-12h30: Discussions</p> <p>12H30-14H30 Lunch Break</p> <p>Session2: Climate impacts, risk assessments, training and communication of JAS 2012 outlook</p> <p>Chair: NCEP/CPC Rapporteurs: Cheikh/Lazreg/S. Bayala</p> <p>14h30-15h00 : Climate variability and health impacts and risks: The case of malaria and meningitis in the Sahel</p> <p>15h00-15h30: Climate information communication: Theory and practice in Burkina faso (part 1- FAO project)</p> <p>15h30-16h00:Practice of climate information communication for rural communities by CCAFS and Mali for 2010 and 2011</p> <p>16h00-16h15: Coffee Break</p> <p>16h15-18h00: Discussions, exchanges with journalists and users by sector (agriculture and food, health, water and disaster management, policy makers and planners)</p>	<p>NCEP UKMet Office MeteoFrance IRI ACMAD</p> <p>Jean François Jusot (CERMES/Niger)</p> <p>IRI (see Jim Hansen/Robert Zougmore)</p>

<p>Day 5 May 25, 2012</p>	<p>Session3: Recommendations/Remarks</p> <p>Chair: IRI/MeteoFrance Rapporteur: S. Bayala</p> <p>09h00-10h00: Communication of 2010 and 2011 seasonal forecasts: Lessons learnt by FEWSnet/CILSS, ISDR and countries</p> <p>10h00-10h30 Discussions on Best communication practices</p> <p>10h30-10h45: Break</p> <p>10h45-12h00: presentation of sessions reports</p> <p>12h00-12h30 Conclusions and recommendations</p> <p>12h30-14h30: Break</p> <p>Session4: Closing ceremony</p> <p>Chair: DG Burkina Faso Meteorological Services Rapporteur/ S. Bayala</p> <p>14h30-14h40: Remarks by PR of Burkina Faso with WMO</p> <p>14h40- 15h00: Remarks by FEWSnet/CILSS/UNISDR</p> <p>15h00:15h15: Remarks by CGIAR/CCFAS</p> <p>15h15-15h30: Remarks by countries</p> <p>15h30-15h40: Remarks by WMO</p> <p>15h40-15h50: Remarks by ACMAD</p> <p>15h50-16h00: Closing speech by the Representative of Burkina Faso Government</p> <p>16h00: End of Forum</p>	<p>FEWS/CILSS</p>
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	REGIONAL CLIMATE OUTLOOK FORUM	
	<h1>PRESAO-15</h1> <p>Ouagadougou, Burkina Faso 24th – 25th May, 2012</p>	
<p>Theme: “Seasonal Climate forecasts: Climate Services for Risk Management and Adaptation to Climate Change for a sustainable development »</p>		

**SEASONAL CLIMATE OUTLOOK
VALID FOR JULY –AUGUST-SEPTEMBER 2012
IN WEST AFRICA, CHAD ET AU CAMEROON
(Ouagadougou, May 25th, 2012)**

Produced by : The African Centre of Meteorological Applications for development (ACMAD) in collaboration with the 17 National Meteorological and Hydrological Services from the ECOWAS Region, Tchad and Cameroun and The WMO Global Predictions Centers (Meteo France, UK Met Office, ECMWF, NOAA/NCEP, JMA and the International Research Institute for Climate & Society 'IRI)

This product is part of the implementation of the Institutional Support to African Climate Institution Project (ISACIP) funded by the African Development Bank group.

A- RECENT CLIMATE CONDITIONS AND OUTLOOK

Since February 2012, above average Sea Surface Temperatures (SSTs) have developed and persisted in the Eastern Pacific and negative anomalies have been weakening in the Central Pacific. La Nina dissipated during April 2012. Since early May 2012, ENSO-neutral conditions are established and are expected to continue during summer 2012. Some dynamical models are anticipating a transition from ENSO neutral to a weak phase of El Nino during the second half of 2012.

The SSTs of the tropical North and South Atlantic Ocean off the coasts of Africa have been mostly below average during the past few months. Recent observed patterns and model outputs are favourable for a close to average SSTs during June to September 2012 period.

The SSTs of the tropical Western Indian Ocean have been close to average over its equatorial part and slightly above average in the south. Recent trends and models outputs are favourable for a persistence of these patterns during summer from June to September 2012.

Above average SSTs were observed over the Eastern Mediterranean sea during the past few months. A persistence of this pattern is very likely from June to September 2012.

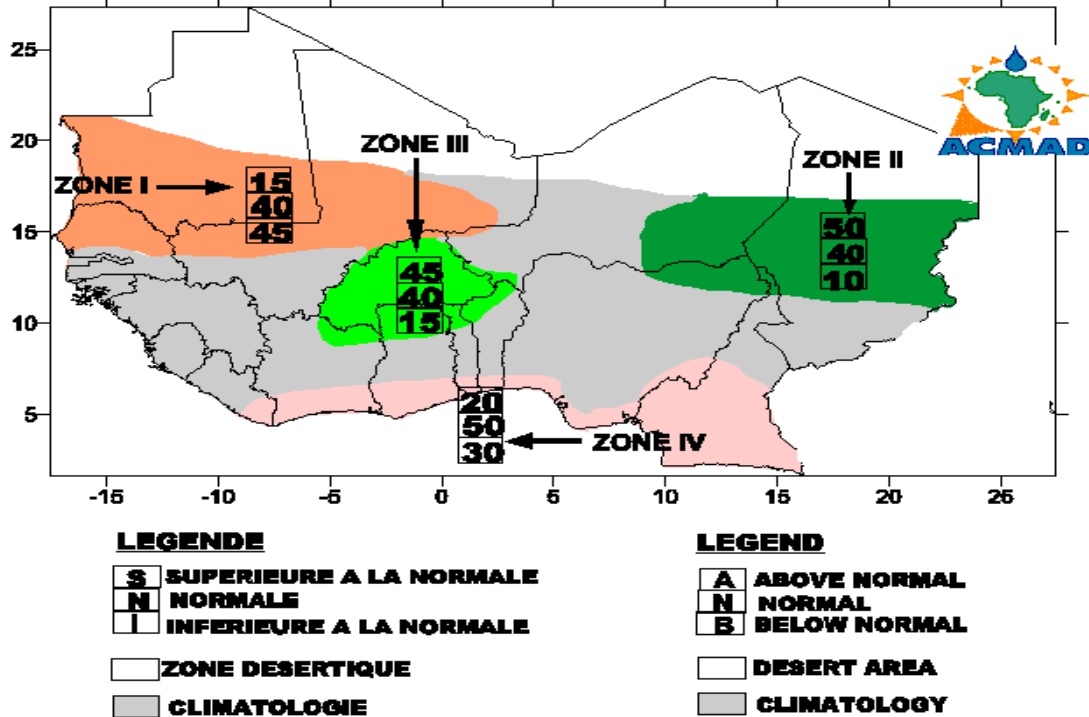
Given global tropical SSTs patterns and related trends above, knowledge and understanding of regional climate variability and predictability, analysis and interpretation of global seasonal forecasting products, the following precipitation patterns are expected during summer in the region (see figure below):

- **Above normal precipitation very likely** over eastern Sahel (zone II) around Lake Chad in Niger, over north-eastern Nigeria and much of Chad. About 100% to 130% of normal precipitation is expected over much of this zone;
- **Below normal to normal precipitation very likely** over the Western Sahel (zone I) in the northern half of Senegal, Southern part of Mali and Southern Mauritania. About 70% to 90% of normal precipitation is expected for zone 1;
- **Above normal to normal precipitation is very likely** (zone III) over much of Burkina Faso and northern parts of Togo, Benin and Ghana. About 80 to 130% of the normal precipitation is expected for zone 3;
- **Normal precipitation is very likely** (zone IV) along the West African coast from Liberia to Nigeria and much of the southern part of Cameroon;
- There is no evidence for a favourable precipitation category over the rest of the domain. Therefore, **Climatology is suggested** over the area.

The region is not expected to experience severe deficit of precipitation. However, knowledge of sub-seasonal variability of the regional climate and analysis of recent experimental products suggest **a late onset of precipitation more likely over zone 1** (Northern Senegal, South eastern Mauritania, Western Mali, The Gambia) **and disruptions in the distribution of precipitating events during summer 2012 over much of the region.**

**SEASONAL PRECIPITATION FORECAST FOR JULY-AUGUST-SEPTEMBER 2012
ISSUED ON 23rd MAY 2012**

**PREVISION SAISONNIERE CLIMATIQUE DES PRECIPITATIONS
DE JUILLET-AOUT-SEPTEMBRE 2012, ELABOREE LE 23 MAI 2012**



Map showing the zoning with respective probabilities of terciles occurrences for JAS season : A=above normal ; N : Normal, B : Below normal

This outlook is produced at the regional scale. Thus, its interpretation should be for regional use. For local and/or country adaptation and applications needs of this forecast, it is highly recommended to consult the National Meteorological and Hydrological Services.



B- SOME ADVICES AND ACTIONS OPTIONS FOR OPERATIONAL MANAGEMENT AND PLANING IN KEY SECTORS DURING THE JAS 2012 RAINY SEASON

Given the climate outlook for the 2012 JAS rainy season (see map above), some advices are proposed below, as an indication for reducing climate risks and maximize yields of activities in the sectors of agriculture, food security, public health and management of natural resources including water:

ZONE I ET IV : BELOW NORMAL TENDENCY

- ✓ prioritise low land cropping
- ✓ sow crop varieties very resistant to water stress on highlands;
- ✓ choose ploughing methods which favour water conservation;
- ✓ choose short-lived and/or water stress resistant food plants;
- ✓ plan an early start of off season activities;
- ✓ promote crop diversification;
- ✓ Improve and strengthen emergency assistance particularly over locations already under food and nutrition crisis;
- ✓ increase vigilance in the management of conflicts related to land use between agricultural and pastoral practices with special attention to areas under crisis;
- ✓ Prepare early collection and fodder storage;
- ✓ Plan an early departure of herds for transhumance;
- ✓ Avoid wasting water reserve.

ZONE II ET III : NORMAL TO ABOVE NORMAL TENDENCY

- ✓ Prioritise upland cropping;
- ✓ encourage rice cropping in low land areas;
- ✓ Plan for management of excess water in dams and reservoirs;
- ✓ maintain levees to avoid flooding in case of excess rainwater;
- ✓ in case of early sowing, use long-lived food plants;
- ✓ plan more manure to mitigate soil erosion by excessive rainfall;
- ✓ prepare for more abundant collection and storage of fodder;
- ✓ move away the animals from the rivers in order to avoid drowning;
- ✓ vaccinate the animals to avoid the epidemics;
- ✓ plan late departure of herds in transhumance;
- ✓ prepare contingency plans for floods;
- ✓ strengthen disease surveillance systems and prepare for early detection and treatment of water borne diseases;

Users are strongly advised to contact their National Meteorological and Hydrological Services as well as ACMAD website (www.acmad.org) for further expert advices and assistance