

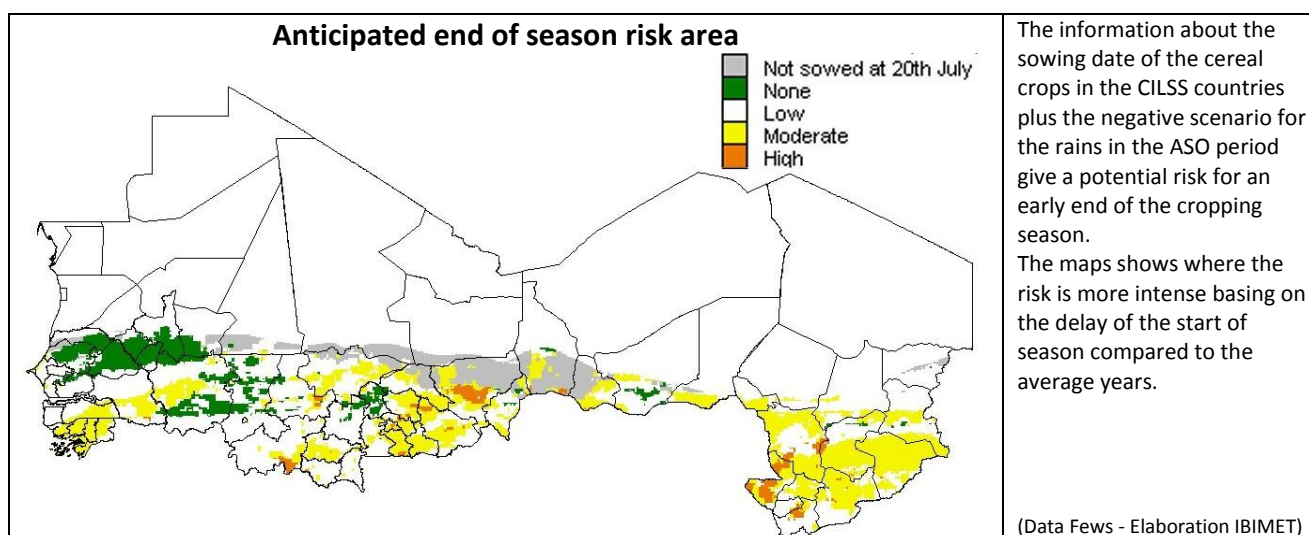
## Sahel Food Crisis Forecasting Timetable Watch

Alert Note 3 – August 1, 2009

### Crop production prediction pre-alert based on climate seasonal forecasting and agrometrological monitoring

Climate Seasonal Forecasts (CPC, UK MetOffice, ECMWF, IRI and GMAO) for the months from August to October, show from negative to average rainy season scenarios with a positive trend from the previous month data. These scenarios are coherent with related climate indicators showing a delay by the monsoon in moving north and the possibility of an early end of season. Present risk is limited to an early end of rainy season in the Sahel.

<b>Regional food crisis pre- alert status</b>	NONE	<b>LOW</b>	MODERATE	HIGH	NON CONVERGENT
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Current agrometeorological data (rainy distribution, vegetation index and sowing date) are on the average despite some zone (Chad, Niger Delta in Mali and Burkina Faso) has presented some retard in the beginning of season and hydric stress condition at the present dekad that is evidenced by the status of vegetation.

**Risk is possible at sub-national level in Guinea Bissau, Senegal, Mali, Burkina Faso, Niger and Chad.**

Possible zone at risks expected rains for agricultural zone

<i>Pays</i>	<i>Areas at Risk and possible problems</i>
<b>Burkina Faso</b>	Long cycle cereals zone production – Possible early end of season + delay in sowing date
<b>Gambia</b>	Low risk for crops production below normal
<b>Guinea Bissau</b>	Low risk for crops production below normal
<b>Mali</b>	Zone of interior delta of Niger – Stress conditions registered and persistence of below average of rain distribution in the end of season
<b>Mauritania</b>	Low risk for crops production below normal
<b>Niger</b>	Close monitoring of agricultural zones at margins of pastoral zone – Distribution of rain in the end of season
<b>Senegal</b>	Possible early end of the season
<b>Chad</b>	Delay in the sowing data in all the agricultural zone – Close monitoring in the end of season

Population and cereal production at risk at sub national level are consequence of not even distributed rains across Sahel. Monitoring is actually undertaken by national early warning systems. Below the reference table for population and cereal production in the CILSS countries.

	<i>Burkina Faso</i>	<i>Cape Verde</i>	<i>Gambia</i>	<i>Guinea Bissau</i>	<i>Mali</i>	<i>Maurit.</i>	<i>Niger</i>	<i>Senegal</i>	<i>Chad</i>	CILSS
Population (x 1000)	15.527	509	1.618	1.383	12.464	3.171	14.302	11.708	9.133	69.814
Average Cereal production (x1000 tonn)	3.160	4	208	170	3.327	115	2.875	743	.1688	12.496

(Source: Agrhymet - Concertation régionale sur la situation alimentaire et nutritionnelle au Sahel et en Afrique de l'Ouest. Cotonou, Mars 2009)

The **Food Crises Forecasting Timetable (CPCA)** framework has been developed by AGRHYMET Regional Center and IBIMET-CNR in collaboration with WMO in order to provide early warning alerts on intensity and geographical extension of food crises.

Time	Objectives	Scale	Input	Models / tools	Output	Target questions	Decision making
1 June	Crisis scale forecast	Regional/sub-regional	Climatic models (PRESAO, ITCZ, OWI)	Agro-meteorological models for yield forecast from PRESAO data	Regional warning bulletin	Which is the probability of regional/sub-regional crisis?	Warning
1 July	Confirmation of crisis scale	Regional/sub-regional/national	Rainfall data, METEOSAT, NDVI, market prices	Rainfall anomalies, ZAR, Vegetation Front, vulnerability analysis (PRVS)	Confirmation bulletin and impact scenarios	Which is the crisis scale and how many people are touched?	International aid mobilisation
1 August	Risk zones identification and extent of touched population	Sub-regional National	Rainfall data, METEOSAT, NDVI, market prices	Rainfall anomalies, ZAR, Vegetation Front, vulnerability analysis (PRVS)	Risk zones bulletin and impact scenarios	Where are the risk zones, why are them at risk and how many people are touched?	Logistic planning and international aid mobilisation (Planning of risk zones monitoring)
1 Sept	Risk zones monitoring and vulnerable population estimation	National/sub-national	Rainfall data, METEOSAT, NDVI, market prices, Field survey (GTP)	Rainfall anomalies, ZAR, Vegetation Front, agro-meteorological models for yield forecast, vulnerability analysis (PRVS)	Vulnerable zones bulletin	Where are the vulnerable zones, why are them vulnerable and how many people are touched?	Security stocks distribution
1 October	May-September season evaluation	Regional/sub-regional/national/sub-national	Rainfall data, METEOSAT, NDVI, market prices, Field survey (GTP)	Rainfall anomalies, ZAR, Vegetation Front, agro-meteorological models for yield forecast, models for biomass estimation, vulnerability analysis (PRVS)	Seasonal bulletin	How was the season, which are the countries and the zones touched by the crisis, which are the causes and how many people are touched?	Security stocks and/or International aid distribution Planning of the monitoring-evaluation of international aid distribution Launch of integrative measures for most vulnerable groups
October - June	Update of populations vulnerability conditions as reference framework for crisis impact evaluation						

The CPCA has been designed to respond to decision makers demand to be alerted at appropriate time depending the food crisis dimension and the international aid support required. By this end four different levels of food crises and related timing for the alerts have been identified to make operational the related contingency plans.

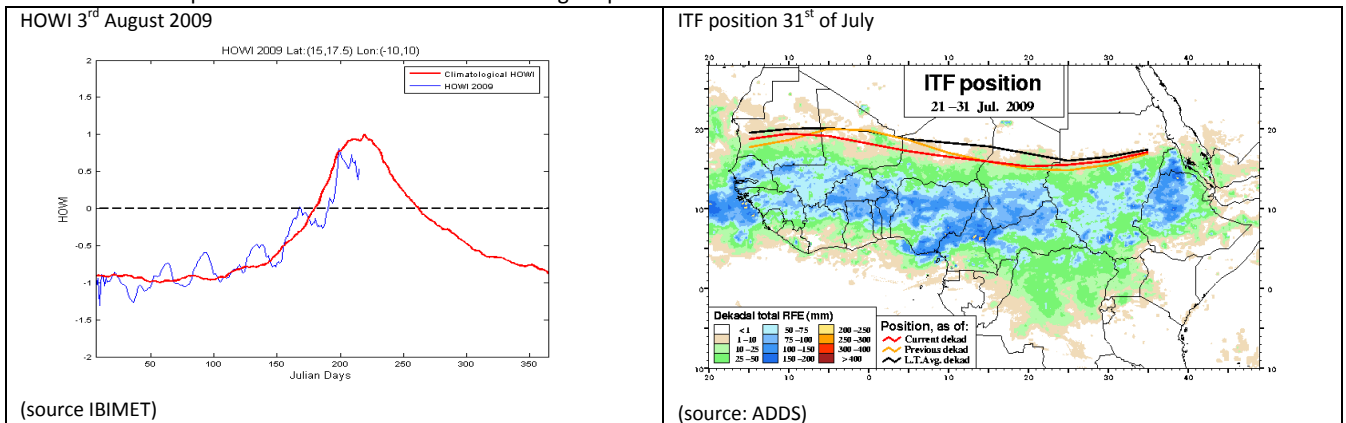
The CPCA is a methodological environment which integrates cartographic, biophysical and socio-economic data, models and analysis in order to monitor factors affecting food security during the year and to evaluate the impact on population vulnerability caused by a natural or human extreme event.

The CPCA follows a strict time schedule responding to the need of planning aid mobilization on the suitable scale. In a year of regional crisis, i.e. 1984, the first alarm should have been launched even before rains arrive in the Sahel, (mid-June). The risk of a crisis occurring drops to zero if the rainy season continues to develop without majors anomalies until mid-July. Thus, as the season progresses and if negative conditions do not occur, the need for complex responses decreases.

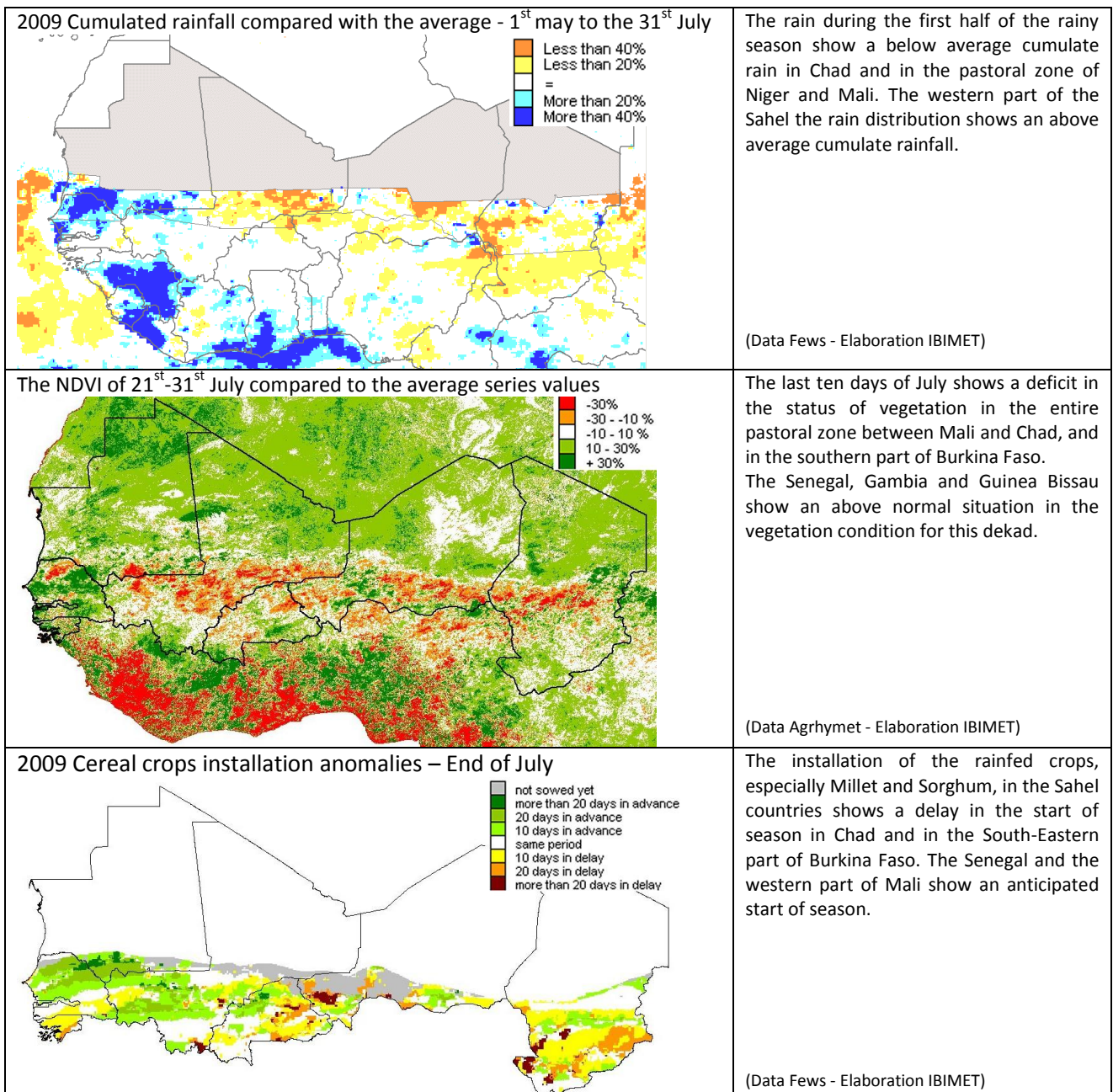
## Present monsoon analysis

Analyzing several indices related to the monsoon activity in July, it is observed that:

- The HOWI reveals a delay for the onset timing and a weak monsoon activity compared to the average climatology.
- The ITF position is southern than its climatological position.



## Agrometeorological monitoring



**Climate Seasonal Forecasts for CILSS countries**

**Climate Prediction Centre – NOAA**  
<http://www.cpc.ncep.noaa.gov>  
 Forecast for August, September, October issued in July

**CCA Depart. Clim. Prob. Forecast X 100**  
**Aug–Oct 2009 Sahel Rainfall, One Month Lead**

Extended below normal values for landlocked countries and average values for coast countries. Trend: negative for coastal countries and less negative forecast for Chad from forecast issued in June.

**MET OFFICE**  
<http://www.metoffice.gov.uk>  
 Forecast for August, September, October issued in July

Met Office : More likely precipitation tercile categories Aug/Sep/Oct  
 Issued : July 2009

Extended below average values for coast countries, Mali, Burkina Faso and the western part of Niger. Normal values for remaining countries. Trend: negative in Mali, Burkina Faso and Niger, from forecast issued in June.

**ECMWF**  
<http://www.ecmwf.int>  
 Forecast for August, September, October issued in July

**ECMWF Seasonal Forecast ASO 2009**  
**Prob(most likely category of precipitation)**  
 Forecast start reference is 01/07/09  
 Ensemble size = 41. climate size = 275 No significance test applied

Legend:  
 <--- below lower tercile  
 70..100% (dark red), 80..70% (red), 50..80% (orange), 40..50% (yellow), other (white)  
 above upper tercile --->  
 40..50% (light blue), 50..80% (blue), 80..70% (dark blue), 70..100% (darkest blue)

Forecast issue date: 15/07/2009

Below normal values for all countries less Chad. Negative trend from forecast issued in June.

**IRI**  
<http://iri.columbia.edu>  
 Forecast for August, September, October issued in July

**IRI Multi-Model Probability Forecast for Precipitation**  
 for August–September–October 2009, Issued July 2009

Average values for all countries. Negative trend in the western countries from forecast issued in June.

**GLOBAL MODELING AND ASSIMILATION OFFICE**  
<http://gmao.gsfc.nasa.gov>  
 Forecast for August, September, October issued in July

**ASO 2009 Precipitation init:2009/07.**

Below normal values for coastal countries and Mauritania. Positive Trend for all countries less in Chad that are stable

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Disclaimer:  
 Seasonal forecasting methodologies and results presented in this paper have to be considered as experimental products, derived from innovative procedures and algorithms, that need to be further validated and improved.  
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