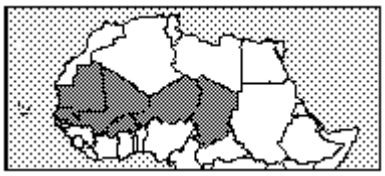


SAHEL WEATHER AND CROP SITUATION 1999

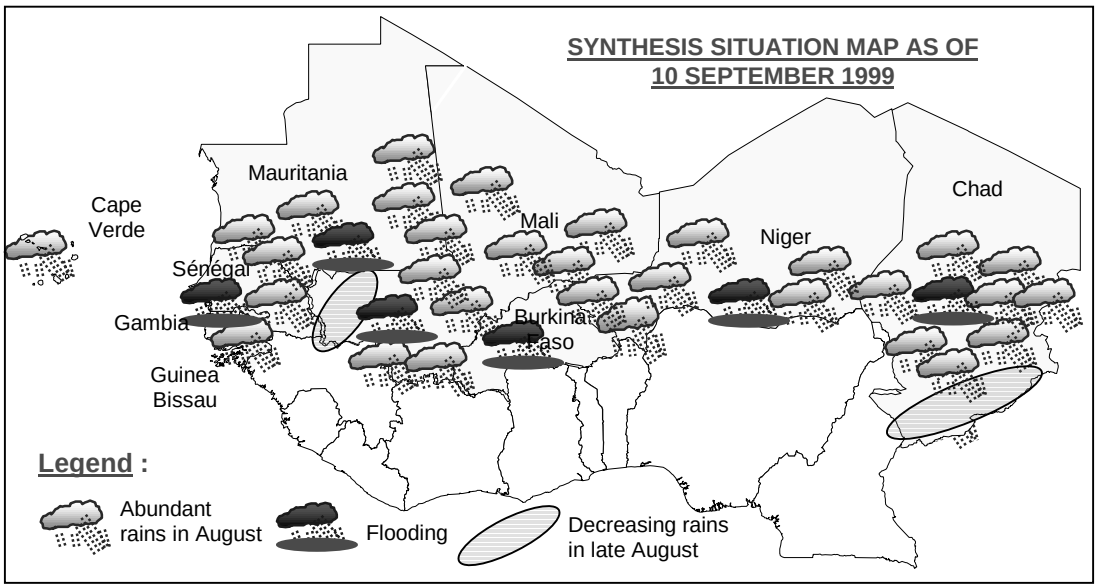
Report No.4 - 10 September 1999

HARVEST PROSPECTS ARE GENERALLY FAVOURABLE FOLLOWING SATISFACTORY GROWING CONDITIONS SINCE JULY

SUMMARY

Following generally above normal rains in July over most agricultural zones, growing conditions remained favourable in August in the Sahelian countries. During the three dekads of August, rainfall was generally above normal and cumulative rainfall in August exceeds 100 mm everywhere in the main producing zones of the Sahel and in most cases in northern desert areas (*see map on page 4*). Unusually heavy rains were registered in Burkina Faso, Chad, Gambia, Mali, Mauritania, Niger and Senegal, causing substantial flooding. These abundant rains benefited crop and pasture development particularly in Mauritania, northern Senegal and Mali, although excess water may reduce yield potential in flooded fields in low-lying areas. Crop prospects are generally favourable. However, the outcome for long cycle varieties in the Sudanian zones (Burkina Faso, Niger and Chad) will depend on the continuation of the rains in September. Pastures are abundant in the region. Satellite imagery for the first days of September indicates that precipitation decreased somewhat over the Sahel but remained widespread and still above average over most parts of Burkina Faso and Chad.

Pest infestations (mostly grasshoppers and army worms) are reported in Cape Verde, Niger and Senegal, and treatments have been undertaken in some areas. Stemborers caused damage on millet in northern Burkina Faso. Although no Desert Locusts have been reported from any country in the region, small-scale breeding may occur. No significant developments are expected.



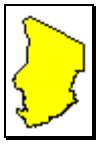
SITUATION BY COUNTRY

BURKINA FASO: Widespread and regular rains in August permitted satisfactory crop development. Following good growing conditions in July, rains were abundant and well distributed countrywide in August. They were particularly important and above normal from the second dekad except in the north-east. Rainfall started to decrease in the third dekad but remained widespread. However, late-planted crops in the south-west will need continuation of the rains through September. By contrast, flooding delayed crop development in low-lying areas. Elsewhere, soil moisture reserves are generally adequate in maintaining satisfactory crop development. Millet and sorghum are generally in the heading and early maturation stages.

Pastures are abundant. The overall pest situation is calm. Substantial infestations of stemborers are reported in the North.

CAPE VERDE: Continuing and regular rains in August favoured maize development. During the first dekad of August, regular rains were registered in Santiago and Fogo islands. From the second dekad, all agricultural islands received substantial rains (149 mm in São Nicolau and 145mm in Santo Antão). Rains remained abundant and well distributed over the whole country during the third dekad. Soil moisture reserves are adequate in most areas. Maize is elongating in humid zones of Santiago and Fogo islands while it is emerging in the arid zones.

Following increasing grasshopper and army worm infestations in Santiago (Tarrafal) and Fogo islands, treatments against larva infestations have been undertaken in several areas. Pastures have developed in highland zones but remain insufficient in coastal areas.



CHAD: Growing conditions remained mostly favourable despite excessive rains in August in some areas. Rains in August were abundant and widespread. Unusually heavy rains were registered notably during the two first dekads (for instance 146 mm in 8 hours on 5/8/99 or 400,8 mm for the month in 10 days in Ati, in Batha province) causing flooding and crop damage. Soil moisture reserves are excessive in some areas, but so far overall crop development is satisfactory. Early plantings of cereals are maturing while late plantings are at flowering stage. However, continuation of rainfall is needed up to mid-September to allow late-planted crops to mature in the Sudanian zone.

Pastures are abundant countrywide. The overall pest situation is calm.

THE GAMBIA: Rainstorms and floods were experienced in mid-August in the west. During the first dekad of August, rains increased steadily and became unusually abundant in Jambajali in the Western Division. From the second dekad, rainstorms and floods caused crop damage in N'Jau and Sare Sofi. In the other Divisions, well distributed and above normal rains benefited crop development. Weeding is the major on-farm activity in August.

No significant pest infestation has been reported so far.

GUINEA-BISSAU: Widespread and above normal rains favoured crop development. Rains remained abundant and well distributed in August. They were particularly abundant during the second and the third dekads. Growing conditions are satisfactory and rice transplanting in swamp fields progressed notably.

MALI: Harvest prospects are generally favourable reflecting abundant and widespread rains in August. The first dekad of August registered unusually heavy rains, resulting in flooding and crop damage in Bamako region. During the second dekad, precipitation was well above average in the west and the centre. During the third dekad, rains decreased in the west but remained important in the south and above normal in the north and the centre. Millet and sorghum are developing satisfactorily, benefiting from adequate soil moisture reserves but excess of water may reduce yield potential in some areas. Due to late plantings, continuation of the rains up to the end of September is needed to improve crop prospects in Sudanian zones.

Pastures are abundant countrywide and the pest situation is calm.

MAURITANIA: Growing conditions are favourable so far and harvest prospects for rainfed crops are good. Rains resumed in the south in the second dekad of August. They were above normal and widespread during the third dekad. Unusually heavy rains were recorded at Aïoun El Atrouss, causing significant losses in Tchitt. Early millet and sorghum are developing satisfactorily.

Pastures are in good condition. Low numbers of Desert Locust adults are likely to be present in central and southern areas where they could lay eggs now with the improvement of breeding conditions. No significant developments are likely.

NIGER: Harvest prospects are generally favourable. During the first dekad of August, rainstorms covered the south of Tahoua, Maradi and Diffa. However, no damage has been reported in these areas. Rainfall remained abundant during the second dekad in the south of Dosso, south-west of Tillabery, Tahoua, Maradi and Zinder. Soil moisture is adequate so far, benefiting crop and pasture development.

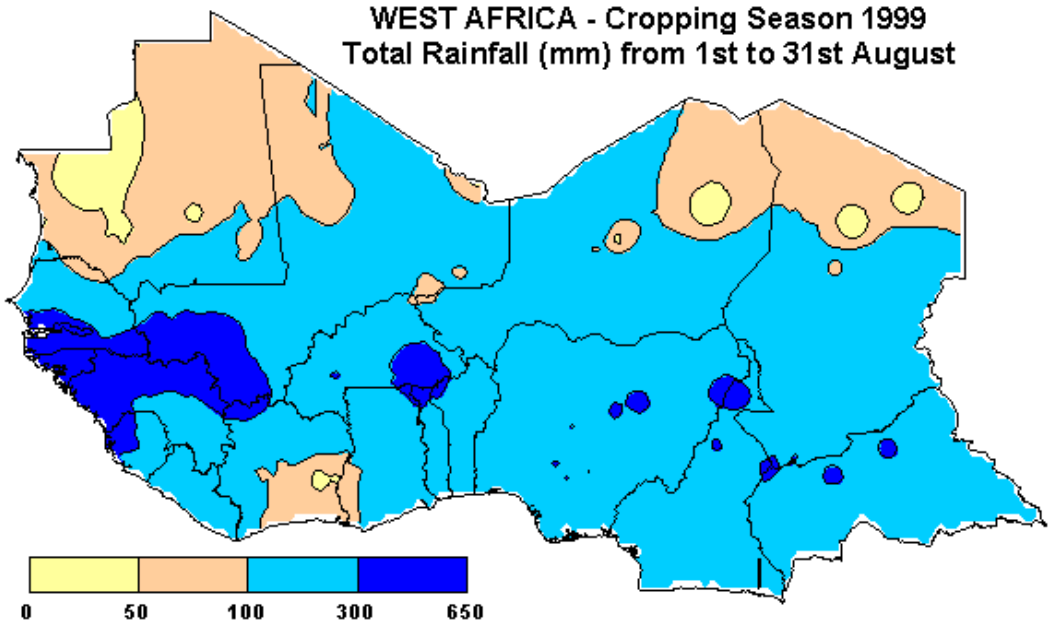
Persisting pest infestations might hamper crop development. Grasshopper and army worm infestations were reported in Zinder department. Isolated Desert Locusts are likely to be present in Aïr and increase slightly in Tamesna as a result of small scale breeding.

SENEGAL: Significant rainfall in August improved crop prospects. Rains were generally abundant and above normal in August. During the first dekad, the south-west registered substantial rains. Rains progressed to the centre and the west during the second dekad. In mid-August, rainstorms covered southern and western regions, flooding many areas (Joal and Kaolack in particular). Rains increased notably in the eastern regions during the third dekad. So far, overall crop development is satisfactory and soil moisture reserves are sufficient. Millet and sorghum are generally heading in the south and the centre.

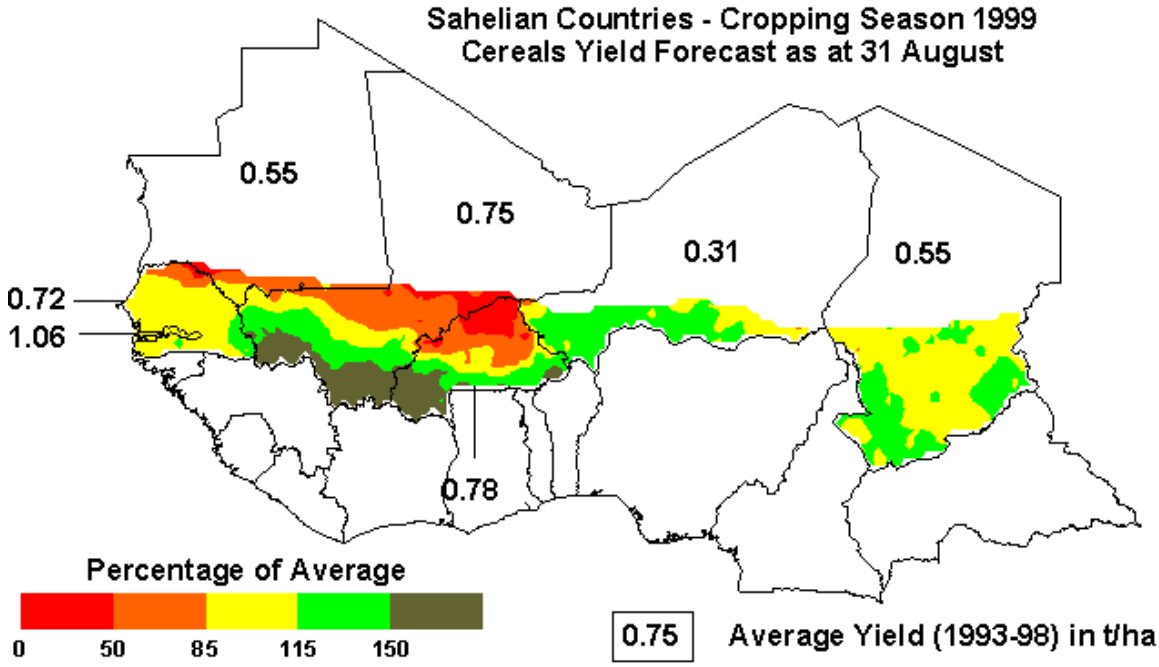
Pastures are abundant countrywide. Grasshopper and army worm infestations are reported in several areas. No significant developments are likely as regards Desert Locusts.

TOTAL RAINFALL AND PLANTING OPPORTUNITY MAPS

The first map indicates the total rainfall amount from 1st to 31st August. Data is extracted from FAO field reports and the RainFall Estimate (RFE) Satellite Imagery as produced by NOAA/USGS/FEWS/USAID project. The RFE images are obtained by interpolating various parameters recorded on the ground and obtained through remote sensing measurements such as: rainfall, relative humidity, wind speed, elevation, cold cloud temperatures.



The map below shows the forecast yield of cereals (maize, millet, sorghum) for the Sahelian countries for the 1999 cropping season, as percent of the average yield in the period 1993-98. The map is obtained by applying to each country a yield function which relates, in statistical terms for the period 1982-98, the output parameters from the FAO crop specific water balance model to the crop yield. For 1999, the water balance model uses average rainfall from 31st August to the end of the crop cycle.



Data source: NOAA, FAO - Prepared by: FAO, SDRN, Agrometeorology Group

*This is the **fourth GIEWS report of the 1999 season on weather and crop conditions in the Sahelian countries of western Africa**. Geographical coverage of these reports include the nine CILSS (Permanent Inter-State Committee for Drought Control in the Sahel) member states: Burkina Faso, Cape Verde, Chad, Gambia, Guinea-Bissau, Mali, Mauritania, Niger and Senegal. Reports will be issued each month from June to November. The final report for 1999 with the first production estimates will be issued in late-November*

These reports are prepared with data from, and in close collaboration with, out-posted FAO Representatives, the Agro-Meteorology Group and the Environmental Monitoring Group (SDRN), the Emergency Centre for Locust Operations (ECLO), the Special Relief Operations Service (TCOR), the World Food Programme (WFP), as well as various Non-Governmental Organizations (NGO's). In this report, FAO/ARTEMIS rainfall estimates, field data on rainfall, FAO agro-meteorological crop monitoring field reports and information provided by FAO Representatives up to 31 August have been utilized. The satellite images of the first days of September have also been utilized for final updating.

*In these reports, reference will be made to four different **eco-climatic zones** based on the average annual precipitation and agricultural features, i.e. Sahelian zone, Sudano-Sahelian zone, Sudanian zone and Guinean zone. They are described below:*

***Sahelian zone**: Where average annual precipitation ranges between 250 and 500 mm. This zone is at the limit of perennial vegetation. In parts where precipitation is less than 350 mm, only pastures and occasional short-cycle drought-resistant cereal crops are grown; all cropping in this zone is subject to high risk.*

***Sudano-Sahelian zone**: Where average annual precipitation ranges from 500 to 900 mm. In those parts of this zone where precipitation is less than 700 mm, mostly crops with a short growing cycle of 90 days are generally cultivated predominantly sorghum and millet.*

***Sudanian zone**: Where average annual precipitation ranges from 900 to 1 100 mm. In this zone, most cereal crops have a growing cycle of 120 days or more. Most cereals, notably maize, root and cash crops are grown in this zone.*

***Guinean zone**: Where average annual precipitation exceeds 1 100 mm. Guinea-Bissau and a small area of southern Burkina Faso belong to this zone, more suited to root crop cultivation.*

*Reference will also be made to the **Intertropical Convergence Zone (ITCZ)**, also known by its trace on the earth's surface, called the **Intertropical Front**. The ITCZ is a quasi-permanent zone between two air masses separating the northern and southern hemisphere trade winds. The ITCZ moves north and south of the equator and usually reaches its most northerly position in July. Its position defines the northern limits of possible precipitation in the Sahel; rain-bearing clouds are generally situated 150-200 km south of the Intertropical Front.*

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