

Bush Fire Service

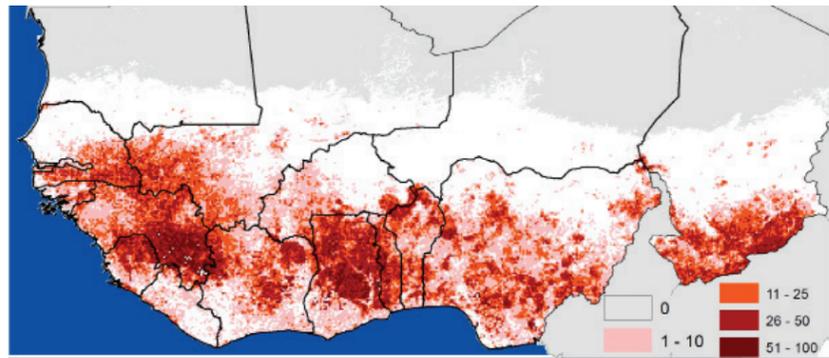
What is its use?

The Bush Fire Service provides information on fire risks (fire-risk zones before fire), active fire monitoring and burnt area assessments for better decision-making in the area of environmental management. Specifically, it permits the:

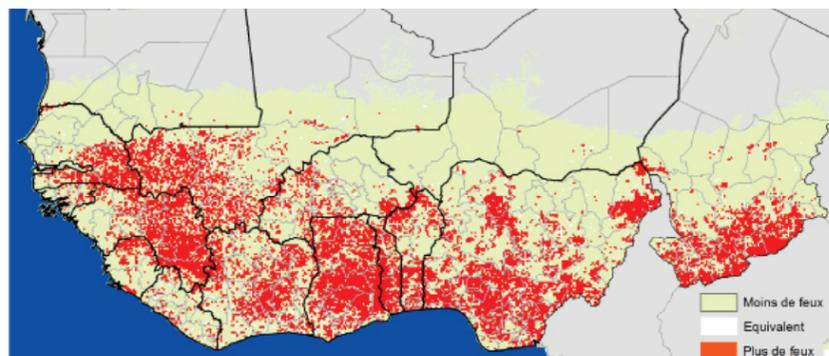
- monitoring of active fires
- Assessment of burned areas
- Identification of areas at risk of fire

Practical applications

The spatial comparison of average detections of active fires over the last 15 campaigns (2000-2015) with the current one shows a slight upward trend of occurrences of around 2% during this 2015-2016 season. Examination of the temporal distribution of fires indicates that 90% of occurrences appear from November to February. This trend differs little from that observed on the 2000 - 2015 series average. However, the occurrences observed in February 2016 remain well above those of the series. Areas formerly burnt in March are burned in January, February, causing a sharp decline in occurrences in March 2016. The high incidence of occurrences in the 17 countries of West Africa and their temporality permit to distinguish two large areas (I) countries with a significant forestry component: Liberia, Sierra Leone, Guinea Bissau, The Gambia, Guinea, Côte d'Ivoire, Nigeria, Ghana, Togo and Benin. (II) Countries with a larger Sahelian component: Senegal, Mauritania, Mali, Burkina Faso, Chad and Niger.



Average Density over 15 years



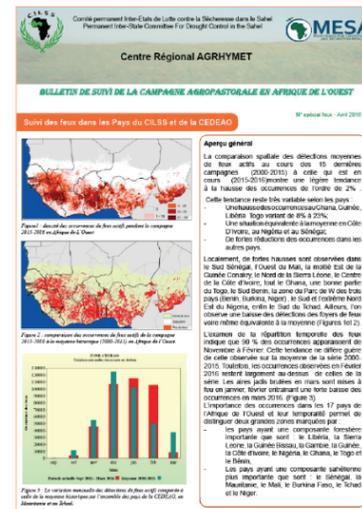
Comparison of the 2015-2016 seasons to the average of the last 15 seasons in West Africa

Who are the final beneficiaries of MESA Terrestrial Thema?

- Government technical services and national and regional institutions responsible for the environment monitoring of the ECOWAS and CILSS countries.
- The institutions of the region operating in the field of environmental monitoring
- African and international researchers
- The universities
- National and regional projects and NGOs

Information Product

- Bulletins
- Special notes
- Wall Charts



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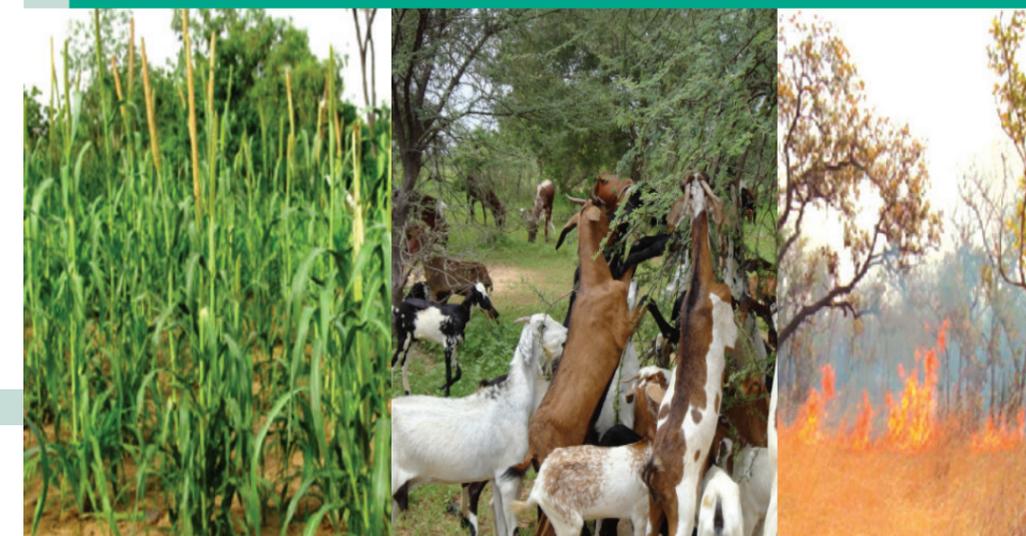


Monitoring for Environment and Security in Africa

Water Management for Cropland and Rangeland



Using satellite information to improve water control, management of agriculture and livestock



Pastoralism service

What is its use?

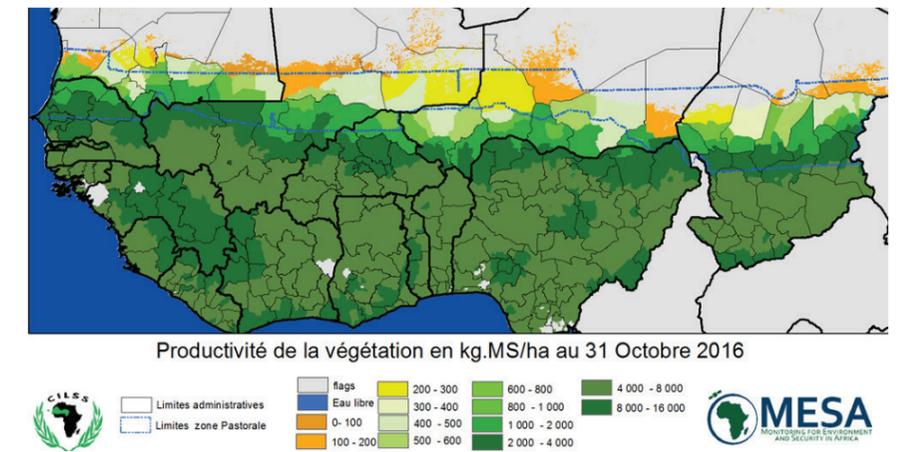
The pastoralism service permits to monitor the rangeland situation (vegetation front advance or delay compared to the average, potential production of fodder biomass), water bodies (start and end) in order to support decision-making, it permits the:

- Fodder biomass forecast
- establishing of a fodder balance sheet

Practical applications

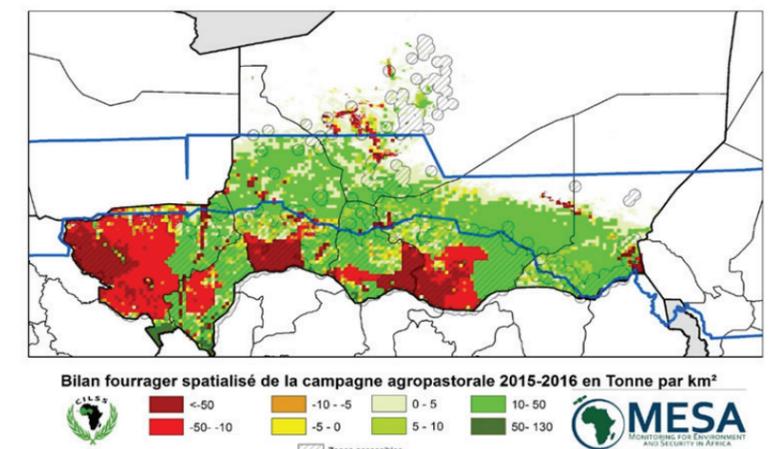
Monitoring the rangeland and surface water bodies

The MESA pastoral service has developed a method to monitor the rangeland situation and surface water bodies. The objective of that work is to help countries to have a method to establish the fodder balance sheet based on satellite images.



Establishing a fodder balance sheet: Case of Niger

The pastoralism service of the MESA project permits to calculate the total amount of dry matter produced by the natural vegetation (DMP) during the rainy season (May to October). It can also be used to identify the potential production of biomass in kg MS.ha-1.



Crop service

What is its use?

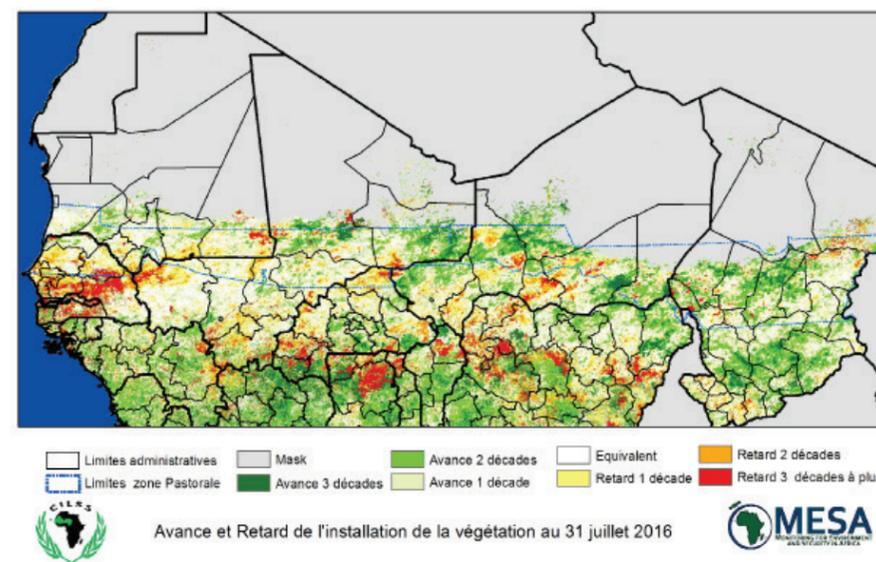
The crop service permits to monitor the crop status (advance or late onset conditions, water requirement satisfaction conditions) and provide yield prospects for early warning system for food security. It permits the:

- monitoring of crop status
- Crop yield forecast
- Crop production estimate

Practical applications

Monitoring of the cropping season

The MESA crop service activities are especially contribution to the decadal briefing of the cropping season monitoring and AGRHYMET information bulletin in their aspects related to crop status and harvest prospects. Products used in this case are on the one hand rainfall estimate images and anomalies coming from the e-station, and on the others from the SARRAH crop model outputs using remote sensing images.



Seasonal forecast

The RIC co-organizes every year climate seasonal forecast sessions in the Gulf of Guinea countries (PRESAGG) and in the Sudano-Saharan Africa (PRESASS).

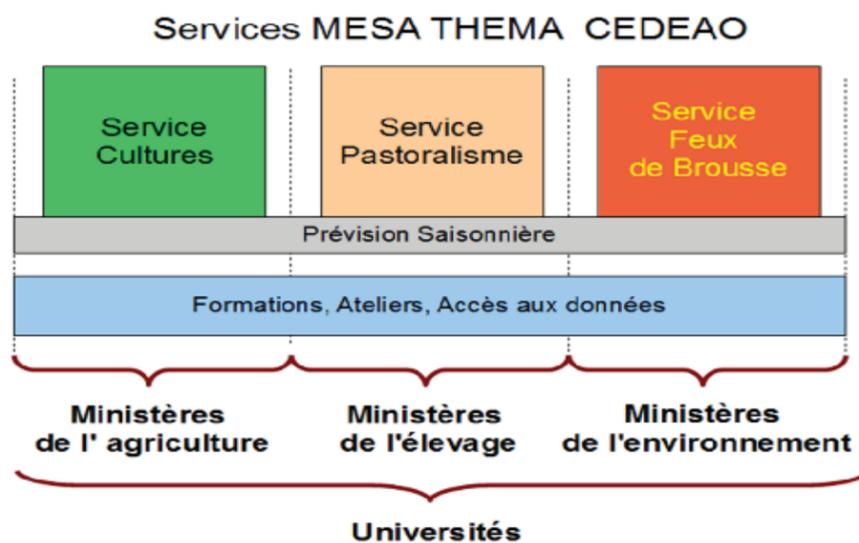
This consists in forecasting very likely the onset dates, the ending date and the longest dry spells dates of the season during the critical growth period of cereal crops (after the crop installation phase and during the flowering-maturation). In 2016, the PRESAGG took place from 14 to 18 March 2016 in Lomé Togo, and the PRESASS from 16 to 20 May 2016 in Ouagadougou in Burkina Faso.

What is the importance of the Monitoring for Environment and Security in Africa (MESA) program in the Sahel and West Africa?

Natural resources undergo severe animal and human pressure, accelerated by climate change effects. It is therefore relevant to assure their monitoring through tools like earth observation satellites. To address this issue,

The importance of the Monitoring for Environment and Security in Africa (MESA) with the theme "Water management for cropland and rangelands", is a response to that concern. The AGRHYMET Regional Centre, a specialized institution of CILSS, has got the mandate from ECOWAS for implementation of the MESA ECOWAS Land thema project which theme is "water management for croplands and rangelands". This project has put in place three main information services coming from earth observation, and this permits to policy-makers and other responsible of the sub-region to make more efficient decisions in order to improve natural resource management.

The 3 main services of the ECOWAS Thema Terrestrial within MESA



Country concerned

Fourteen ECOWAS member countries Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo ; plus Mauritania and Chad..