

## SIG SAHEL • MONITORING AND EARLY WARNING SYSTEM FOR PASTORALISM

**ACTION AGAINST HUNGER INNOVATES IN EARLY WARNING AND MONITORING SYSTEMS: INTEGRATING REMOTE SENSING AND COMMUNITY MANAGEMENT METHODS TO IMPROVE PASTORALISM IN THE SAHEL REGION**

### WHAT THE EARLY WARNING AND MONITORING SYSTEM FOR PASTORALISM OF ACTION AGAINST HUNGER LOOKS LIKE

*SIG Sahel* is an advanced monitoring and early warning system for pastoralism that Action Against Hunger has been developing and implementing in the Sahel region of West Africa since 2007. This region relies heavily on pastoralism and the mobility of pastoralists for its economic and environmental resilience.

The main objective of *GIS Sahel* is to monitor grazing land using a combination of satellite imagery and field data. The system is based on two pillars: early warning and surveillance. Early warning assesses the

production of biomass during the rainy season, allowing pre-viewing of pasture availability for the next dry season.

On the other hand, monitoring involves real-time monitoring of the state of vegetation, both green and dry, by remote sensing, complemented by a network of local informants called *pastoral sentinels*, who provide frequent updates on pasture conditions at the local level.

The information generated by *GIS Sahel* is used to anticipate the needs of agropastoral communities during lean periods and to mobilise resources to meet the most urgent demands. In addition, this information is valuable for pastoralist networks, who use it to adapt their pastoralist practices at local, national and regional levels.

### OPERATION OF THIS SYSTEM

#### 1 ANALYSIS OF REMOTELY SENSED DATA

Action Against Hunger develops data processing chains for estimating the availability of pasture in the Sahel throughout the year. These analyses provide crucial indicators for planning humanitarian responses.

#### 4 DISSEMINATION OF INFORMATION

Information and analysis is shared with pastoralists to strengthen their capacity to respond to crises. Regularly updated messages are disseminated to pastoralists in the local languages to provide pastoralist communities with information and good husbandry practices. It is also disseminated to national coordinating authorities and at regional level during regional coordination meetings.

#### 2 COLLABORATION WITH PASTORAL COMMUNITIES

The active participation of pastoral communities is a key part of the project. Technical cooperation with the Réseau Billital Maroobé (RBM), an international association of Sahel pastoralists, is a key element of the project.

It has facilitated the development of monitoring and evaluation tools and promotion adapted to the needs of these communities, especially in the diagnosis of risks and vulnerability to disasters. Action Against Hunger implements an assessment method that uses a variety of participatory qualitative tools to involve local stakeholders.

#### 3 REAL-TIME FIELD DATA COLLECTION

In order to streamline and improve the efficiency of information collection, Action Against Hunger focuses on collecting remote data on pastoral resources through a network of sentinels. This information is collected and validated together with national agents of the Ministry of Livestock and uses low-cost tools, such as mobile phones, to create detailed and accurate maps of the pastoral situation.



For more information:

 <https://sigsahel.info/en/>

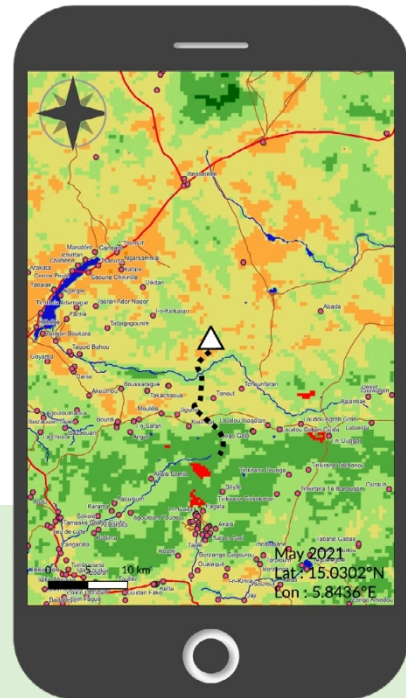
 Sahel Early Warning System - YouTube

## WHO BENEFITS FROM THE SIG SAHEL SYSTEM

- **DIRECT BENEFICIARIES:** Regional and national partners, including pastoralist organisations and animal resource ministries in the 5 intervention countries, pastoralists in the areas covered by the local radio programmes.
- **INDIRECT BENEFICIARIES AND OTHERS USERS:** Food and nutrition crisis prevention network, governments, UN agencies, donors, technical working groups and *clusters* at regional and national levels, academics interested in pastoralism and animal resources.

## FUTURE TECHNICAL DEVELOPMENTS AND COLLABORATIVE SPACES

- **MONITORING OF WATER AND INLAND WATER POINTS AND FOREST FIRES.** The use of technology products provided by the European Copernicus Global Earth Service will allow real-time visualisation of surface water and forest fires. In addition, a seasonal forecasting model is being developed by the University of Maryland and NASA. This model will forecast the filling rate of ponds and waterholes important for grazing, helping to anticipate the availability of water for animals.
- **IMPROVEMENT OF THE EARLY WARNING SYSTEM.** In collaboration with the University of Granada, the GIS4Tech Lab and Action Against Hunger, an advanced system is being developed to monitor and predict the humanitarian vulnerability of pastoral and agro-pastoral populations in the Western Sahel. This system will integrate Geographic Information Systems (GIS) analysis and Artificial Intelligence to provide more accurate and useful predictions.



- **PASTONAVIGATOR.** This *smart phone* app will provide access to real-time, geolocated and updated information on the presence of vegetation, surface water and fires. It will also include vital information provided by grassland sentinels, such as market prices, water accessibility, presence of diseases or conflicts. This digital tool will be a valuable resource for herders, enabling them to make informed decisions based on accurate and up-to-date data on grazing conditions.

**We need to join forces and capacities, building alliances that are committed to a different way of dealing with malnutrition, and with whom we can work together.**

