

Implementation of information, reservation and online food purchase systems livestock in Niger, Mali and Burkina Faso



1. Executive Summary

Livestock is a pillar of the economy in Niger, Mali and Burkina Faso, but access to livestock feed is often limited by logistical, information and availability issues. The availability of fodder for livestock in West Africa, especially for transhumant pastoralists, has always been erratic due to climate variability, and this uncertainty is tending to increase due to climate change. This implies, increasingly, that it is necessary to supplement the fodder-based feed with concentrates or agro-industrial by-products. However, the livestock feed market in West Africa suffers from restrictions on its availability and access by pastoralists, especially during the pastoral lean season.

The implementation of a digital system for the online reservation and purchase of livestock feed aims to facilitate the supply of livestock farmers, stabilize prices and improve the resilience of the sub-sector.

This system would allow for better coordination of actors, reduce transaction costs and limit the risk of shortages during the lean season.

2. Background and rationale

Livestock is a major source of income for millions of rural families in West Africa. Current issues facing this subsector include: shortages and seasonal price variations; the lack of information on available stocks; dependence on physical markets, making supply difficult; the low level of banking and the difficulty of accessing modern means of payment. Agropastoralists and pastoralists/transhumant herders have tried to solve this problem by creating animal feed banks (BABs), with the aim of managing cyclical shortages. The mechanism consists of accumulating and storing reserves of livestock feed before the lean season and selling them during the lean season to local agro-pastoralists and transhumant pastoralists. BABs remain the first line of defense for communities to protect themselves during the lean season and especially during crises. They represent a successful solution, however they face many challenges such as stock management, competition on organic farming with speculative traders, the need to adapt to the security context (especially in the event of relocation), the difficult access of transhumant herders to the services provided by the BABs, the high prices during the lean season as well as the non-compliance of commitments on the part of some pastoralists. These difficulties in accessing organic farming make farmers even more vulnerable to the climatic, economic and social crises.

To this end, booking feed in November would allow for better purchase prices. But factories often do not respect these reserves, and when they have to deliver the product in February, they cite the lack of availability.

In response to this situation, actions are taken to ensure affordable prices, continuous availability and compliance with contracts through the exchange of key information (location, volume of stocks, types of food, price and security situation) to facilitate pastoralists' decision-making and the establishment of a reserve and pre-purchase mechanism that can ensure the availability of organic food during their

displacement. In addition, the opportunities offered by digital technology can be explored, in particular, the increasing digitalization of economic transactions in West Africa, increased access to the internet and smartphones, even in rural areas, and successful experiences in other sectors (agriculture, mobile banking).

3. Objectives of the digital system

The main objective pursued through the implementation of online feed information, reservation and purchase systems for livestock feed is to strengthen the availability and accessibility of livestock feed for livestock farmers/transhumant herders.

Specifically, it will involve:

- facilitate access to livestock feed by reducing intermediaries and improving transparency of stocks and prices;
- reduce transaction costs for farmers and suppliers;
- set up an integrated regional platform linking producers, distributors and breeders;
- Encourage the adoption of mobile and electronic payments to secure transactions.

4. Policy Options

Four policy options are proposed to operationalize this approach:

Option 1: National platform in each country

- Each country is developing its own platform for access to the updated status of BABs (Google Looker business panel, newsletters, etc.) which facilitates strategic decision-making, booking and online purchase of organic farming (development of an application at the end of the pastoral innovation challenge);
- Minimal coordination between countries (exceptional import procedures for organic farming during pastoral crises);
- Less complex to set up, but limited in regional scope.

Option 2: Single regional platform (recommended)

- A centralized system covering Niger, Mali and Burkina Faso;
- Integration of key players: suppliers, transporters, BAB managers, breeders' cooperatives;
- Facilitation of cross-border transactions and optimization of feed flows (comprehensive understanding of the supply chain, contingency plans, improved communication and coordination between food security structures and key actors; stockpile operating mechanisms such as the feed component of the RRSA);
- Cost reduction through economies of scale.

Option 3: Public-Private Partnership (PPP) for a Hybrid Model

- Development of the platform by a public-private consortium (contract models guaranteeing sustainability, IDAN, Modhem and Garbal information services);
- The State sets the regulatory framework, while private companies provide operational management;
- Requires a clear legal framework and regulation of the digital market (agricultural e-commerce, protection of online transactions, etc.).

5. Recommendations

To successfully implement an effective digitalized system for the supply of livestock feed in these three countries, it is recommended to:

1. the adoption of option 2: a single regional platform to harmonize supply and demand in a wider market;

- the establishment of a regulatory framework promoting agricultural e-commerce and the protection of online transactions;
- raising awareness and training of livestock farmers in the use of digital technologies;
- the development of a partnership with mobile money operators to secure payments;
- the deployment of digital infrastructure in rural areas to ensure stable internet coverage.

6. Implementation and key players

An inventory of the Livestock Feed Banks (BABs) is available for the organizations managing BABs and for their users. This inventory makes it possible to establish an up-to-date status of BABs through information systems that facilitate strategic decision-making, adaptation to risks and coordination with institutional actors to prevent crises. A database and mapping of BABs will be developed in collaboration with local organizations, ensuring a continuous information channel to support management during the pastoral lean season.

Information related to BABs will be regularly shared with farmers via existing platforms. To this end, a comprehensive information system will be developed to monitor stocks and prices of organic farming, ensure access to safe food by monitoring the evolution of the security context in the areas of intervention of the BABs, as well as access and supply routes. This system will combine the collection of key data, including geospatial information and information on the management committees and their dissemination through the POs' own systems, the Modhem, Garbal and IDAN information systems, the feed reservation and purchase platform developed as a result of the Innovation Challenge and publication in the Pastoral Watch newsletters, ensuring a continuous information channel and the proper management of sensitive data in an environment of insecurity and adapted to the Sahelian context.

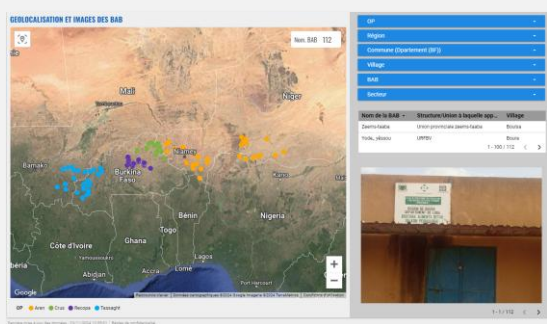


Figure 1. Spatial distribution of BABs by POs and by country



Figure 2. Mapping of the security status of the 112 BABs geolocated in the 03 countries

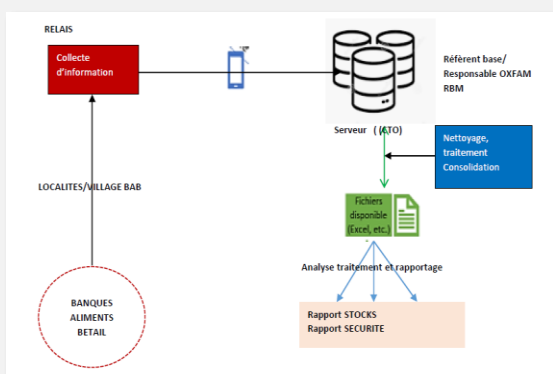


Figure 3. Data collection and analysis device

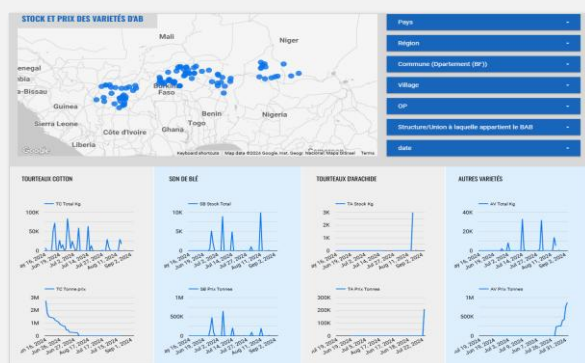


Figure 4. Google Looker Business Panel on Follow-up Survey and Secure Access to BABs

Mechanisms guaranteeing the reservation and purchase of organic resources for lean periods are put in place. An application is developed to facilitate the booking and purchase of organic food online following an innovation challenge, new contract models are developed to take into account technological and

economic feasibility and a reservation and purchase test is carried out with 200 tons of feed to test the effectiveness of the system.

Exceptional import procedures for organic farming are effective during pastoral crises. They ensure the availability of livestock feed during pastoral crises through a comprehensive understanding of the supply chain, the development of contingency plans, and improved communication and coordination between food security structures and key actors such as producers. The mechanisms of operation of the reserves and their relationship with the Billital Marobé Network (RBM) will be identified, and spaces for communication and advocacy will be established. In these spaces, RBM will represent local organizations to collaborate with ARAA through RRSA to improve pastoral crisis management.

In order to set up this system, which integrates a digitalized system for an efficient supply of livestock feed in these three countries, a number of key players must be involved, each in their role. These are:

- **Governments and Ministries of Livestock** : Project management and regulatory framework.
- **Economic Operators and Livestock Feed Suppliers** : Integration into the platform and logistics management.
- **Regional Organizations (ECOWAS, UEMOA)**: Policy harmonization and institutional support.
- **Telecom and fintech operators** : Development of mobile payment and Internet access solutions.

7. Monitoring and evaluation indicators

The indicators for monitoring and evaluating the implementation of online feed information, reservation and purchasing systems for livestock feed in Niger, Mali and Burkina Faso are mainly:

- Number of farmers using the platform.
- Volume of transactions carried out online.
- Reduction of lead times and costs.
- Improvement of the availability of livestock feed during the lean season.

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