Agricultural Insurance & Digital Payments

Challenges of payment digitalization in rural areas of Senegal
Historical Background

The CNAAS, at the core of farmers protection

► Pioneering index-based insurance program

Since its creation in 2009, the National Agricultural Insurance Company of Senegal (CNAAS) insures smallholder farmers against the risks inherent to their activity. In partnership with the World Food Programme (WFP), a United Nations agency and longtime partner of the CNAAS, it offers agricultural index-based insurance products to farmers.

Cheikh is the Head of one of the 6 regional agencies of the National Agricultural Insurance Company of Senegal based in Tambacounda. Every year in May, he spends long hours in the field to lead the annual awareness campaign towards corn farmers. Producers themselves are sometimes unaware of the benefits of index-based insurance products. Such campaigns, that play a fundamental role here, allow Cheikh to convince new producers’ organizations to join the CNAAS index insurance program and to extend coverage to several thousand farmers and their families.

He highlights the positive impact of such fieldwork: “this year, in a village, people were not eligible for this program, but they kept asking me if they would be able to join it.” However, in these remote rural areas, the challenges related to the program’s implementation are numerous.

Overview of CNAAS’s activities

Established in 2009 by the Senegalese state in partnership with private actors, the National Agricultural Insurance Company of Senegal offers insurance products to agricultural sector stakeholders (crop, livestock and equipment).

+ 280,000 producers insured by the CNAAS in 2020
+ 100 producers’ organizations partnered with the CNAAS in 2020
In remote rural areas, the program implementation is challenging

Subscription campaigns to index insurance policies remain highly dependent on paper-based procedures and subject to operational difficulties. Cheikh’s teams are forced to transport and deliver subscription forms in the field: “sometimes the agent is compelled to travel many kilometers for a single subscription.”

In addition to constraints related to the transportation and archiving of these forms, the follow-up of operations is difficult for agents: “a producer may tell me that he has subscribed and paid the insurance premium although in reality this is not the case.”

Premium and compensation payments in cash or by check are tedious and time-consuming...

Baldé is the chairman of a Producers Organization (PO) based in Kolda. As a partner of the CNAAS, the PO gathers more than 2000 farmers. Baldé as a producer himself for several years now, is committed to defend the interests of his colleagues, which made him the head of the PO. Supported by a 25-member board, he coordinates actions to support affiliated producers: negotiating input prices, finding commercial opportunities, and securing harvests.

On the field, the PO delegates a team of representatives, notably in charge of raising awareness on index-based insurance among farmers, collecting subscription forms, and collecting payments. Collecting premiums, paid in cash by farmers, is tedious and fraught with difficulties. While each village appoints a lead producer to centralize the collection of premiums, implementation is not always smooth. “Upon subscription, I have to go to the villages mysef by motorcycle to collect premiums from latecomers. The villages are far away, and I don’t have another way to get there quickly,” says Baldé.

While in Tambacounda, Cheikh, who receives the premiums collected by the POs at his CNAAS branch, is forced to store large amounts of cash. He is apprehensive about these periods and fears for the safety of his team.

Index-based insurance

In partnership with the WFP and other stakeholders, the CNAAS has been leading the development of index-based insurance in Senegal. This type of insurance program usually targets the agricultural sector. The compensation payment is linked to an index often correlated to climatic data (i.e.: humidity, rainfall, and temperature) generally collected by satellite images or meteorological stations.

More than 185,000 farmers were covered by the index-based insurance program offered by the CNAAS in 2020 (for an average premium of about 5,000 CFA francs paid by growers and approximately 200,000 CFA francs of insured capital per farmer).

R4 Initiative of the World Food Programme (WFP)

Agricultural production in the Sahel countries is highly affected by rainfall variations, which compromises the economic balance and food security of smallholder farmers. In many countries, including Senegal, the WFP deploys the “R4” program (“Rural Resilience Initiative”) that aims to increase the resilience of producers by protecting their environment and reducing risks related to climate change;

In Senegal, the WFP (through the Green Climate Fund (GCF)) and the Government collaborate to implement this integrated risk management approach which is based on 4 components:

• Risk Reduction (resource management and production improvement),
• Risk Transfer (index-based insurance),
• Risk Retention (access to savings),
• Calculated Risk (access to credit and revenue generation).

The “Risk Transfer” component allows Senegalese smallholder farmers to secure their agricultural investments in order to stabilize their revenues by offering them index-based agricultural insurance in partnership with the CNAAS.

...and expose program stakeholders to robberies

In case of drought, payment of compensations brings its own set of problems. POs strive to collect the compensation amount: cashing out bank checks provided to them take some time and is cumbersome. “It takes up to 2 weeks to process the compensation checks from the insurer to our microfinance institution”, estimates Baldé, who emphasizes the urgency of compensating producers for crop losses. The process is also problematic for Cheikh: when a check is rejected, a new one must be issued from Dakar, the Senegalese capital, and compensation delays are lengthened accordingly.

At the end of the chain, POs must organize the delivery of cash compensation to producers. Baldé explains that he fears his teams will be attacked on the road: “to compensate producers, we have to tour around villages on motorcycles, sometimes carrying more than 10 million CFA francs, which represents a great risk for us.” Moreover, producers’ communities are informed of the compensation payments by radio communication: “people can estimate the amount of money we’re carrying because we communicate the compensation amount per hectare in advance.”

The CNAAS has a unique experience and expertise in agricultural risk management in Senegal.

Omar SOW, Technical and Sales Director, CNAAS
Analysis

Towards an ambitious digital transformation

► Security, rapidity, and payment traceability among the multiple benefits of digitalization

In early 2020, the CNAAS was aware of the difficulties caused by cash payments and checks, and by the use of paper documents. For that reason, it has set up an ambitious transformation program, supported by the WFP, its longtime partner, which is very involved in the digitalization of index-based insurance programs for rural populations. This program aims to digitalize the insurance company’s model in depth. For CNAAS, but also for its partners – POs and producers – the challenges of such a transformation are strategically important.

Overview of the benefits associated with the digitalization of CNAAS payments and related operations

<table>
<thead>
<tr>
<th>Operational Benefits</th>
<th>Impact</th>
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<tbody>
<tr>
<td>Time Saving</td>
<td>CNAAS</td>
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<tr>
<td>Decreased time for payment processing, reduced number of trips, and decreased time for reporting.</td>
<td>++</td>
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<tr>
<td>Decrease of Operational Costs</td>
<td>+++</td>
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<tr>
<td>Decrease of costs related to travel and manual operations.</td>
<td>+++</td>
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<tr>
<td>Security Reinforcement</td>
<td>+++</td>
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<tr>
<td>Reduction of robbery and assault risks when carrying and holding cash or checks.</td>
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<tr>
<td>Traceability of Transactions</td>
<td>+++</td>
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<tr>
<td>Better accessibility and archiving of payment proofs.</td>
<td>+++</td>
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<tr>
<td>Optimization of Resources</td>
<td>+++</td>
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<tr>
<td>Decreased resources and time allocated to manual activities (collecting payments, filling out subscription forms, etc.).</td>
<td>+++</td>
</tr>
<tr>
<td>Improvement of customer experience and simplified interactions between CNAAS, producers and POs.</td>
<td>+++</td>
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This transformation contributes to:

- **Securing and accelerating payment flows** by avoiding the transportation and storage of cash and by guaranteeing payment traceability.
- **Improving user experience** by avoiding the numerous trips required in a non-digitalized model.
- **Increasing operational efficiency** by enabling faster and more reliable execution of operations.
- **Reducing operational costs of the index-based insurance program** by neutralizing transport expenses.

The CNAAS, assisted by the WFP, appoints a project team to lead the transformation process, which encompasses internal resources of the CNAAS and experts from the WFP. This team is joined by a team of consultants from Sofrecom, a consulting and engineering firm with a recognized expertise in digital financial services and digital transformation projects. The team is responsible for studying how to dematerialize the payments and procedures of the index-based insurance program: the CNAAS plans to eventually acquire a solution that will allow it to digitalize its activities.

As part of its efforts to implement innovative projects and empower its partners, the WFP promotes the use of operational money transfer tools.

Siré DABO, Program Policy Officer, WFP

Legend: +: moderate benefit, ++: significant benefit, +++: major benefit

In particular, the subscriptions, storage and archiving of data, as well as the production of a report

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A “user-centric” approach² to define optimized user journeys

Following a kick-off meeting, Sofrecom conducts a detailed analysis of the CNAAS’ activities. That will allow the project’s team to fully engage in the operational context of the program and to adopt a “user-centric” approach, which will best meet user expectations.

Hence, an empathy study (analysis of problems encountered by users) and a complete mapping of the user experience (analysis of user journeys and interactions with other actors) are conducted along with a major survey of users’ “pain points”³.

75% of the CNAAS’ insured producers own a mobile phone and less than half have a smartphone (CNAAS observations, 2020)

35% of Senegalese in rural areas received or made a digital payment in 2017 (World Bank)

This work enables the team to draw key lessons that are critical in defining the transformation strategy:

- The PO plays a major hub role in the payment process (centralization of flows, collection of premiums, individual settlement of compensations to producers)
- There are numerous “pain points” related to the program’s payment procedures which are sometimes acute (security risks, additional costs, delays mainly)
- The weak digitalization of payment-related information flows is the source of significant difficulties (loss of information, data reliability problems, delays, etc.)
- Among all program stakeholders, the CNAAS and POs are the most exposed to the difficulties of a non-digitalized model
- Although check payments facilitate the partial dematerialization of payment procedures, they also have multiple disadvantages: they cannot constitute a satisfactory alternative to cash payments

In the second phase, the project team strives to design the ideal experience for the users of the forthcoming solution, being producers, POs, and CNAAS team. Prior to this, Sofrecom creates several personae⁴: these fictional characters are at the heart of the design thinking methodology⁵. They represent users of the solution and help the project’s team to develop the best suited user journeys.

This groundwork is based on the “pain points” analysis performed in the first phase as well as on the profiling of the different user groups.

**Understanding expectations of stakeholders in rural areas**

An approach to digitalizing payments

1. Operational Study
   - Experience Mapping
2. Empathy Study
3. User Journey Design
4. Solution Strategy Definition
5. Ideation

**New payment model: a “phygital” approach**

► At the end of the chain, the digitalization of payments to/from producers raises many challenges

² A method of designing a product whose development is guided primarily by the needs, expectations, and characteristics of the users. Users are the individuals who the company or organization seeks to address their needs by providing a product or service. For the CNAAS, these are external users (producer organization, producer, etc.) and internal users (agent, technical manager, reporting officer, etc.)

³ A point of unsatisfaction, also known as friction, which a user encounters in the experience provided by a company or an organization

⁴ A fictional character created from scratch whose attributes, described in detail, express the characteristics of a target user group (e.g. a farmer in the Kolda region of Senegal)

⁵ User-centric innovation method aimed at creating or improving a product or service

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Digitalization Strategy

A “SaaS” model that ensures financial and operational agility

► Control budget impact by avoiding upfront and heavy investment in a solution

By relying on the digital facilities offered by payment service providers, the CNAAS can digitalize a certain number of operations without having to acquire a solution.

Sylvain MORLIERE, Principal, Sofrecom

Digitalization should make it possible to address three quarters of the “pain points” that program stakeholders experience

Standard characteristics of a “SaaS” solution

1. The provider owns the solution
2. The solution already exists and is not developed specifically for the customer
3. The provider is responsible for hosting the solution
4. The provider operates and maintains the solution
5. The customer pays for the use of the solution and not for the acquisition of the solution

Digitalization Strategy

Agricultural Insurance & Digital Payments

Premium collection and compensation disbursement must be made as simple as possible to be efficient and secure. Digital tools open up new perspectives, even if they must be adapted to rural contexts.

Mathieu DUBREUIL, Senior Insurance Advisor, PAM

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A business model that integrates multiple payment tools may facilitate greater adoption, especially in the most remote areas.

Siré DABO, Program Policy Officer, PAM

Within the scope of the project, two main types of models for the digitalization of payment tools in SaaS can be considered. This involves the digital payment tools themselves on the one hand and the solutions provided by payment aggregators on the other. In the first case – the single payment tool model – the digital partner is a mobile money or money transfer operator that provides users with its own payment tool (mobile money or money transfer). In the second case – the multi-payment tool model – the digital partner is a payment aggregator. It gathers and offers a multitude of payment tools from different providers (mobile money, money transfer, bank transfer, “over the counter” transfer) to its users.

Types of partners/providers

**Model 1: Single Payment Tool**

- Producer Organization
- Digital partner = Payment Operator
- Producers

**Model 2: Payment Aggregator**

- Producer Organization
- Payment Method
  - Transfer Operator 1
  - Transfer Operator 2
  - Mobile Money Operator 1
  - Mobile Money Operator 2
- Digital Partner = Payment Aggregator
- Producers

Conclusion

Digital payment solutions, especially those offered by mobile money and money transfer operators, play a major role in the development and success of agricultural insurance products.

In fact, the digitalization of payments provides abundant benefits to stakeholders offering this type of products: security and facilitation of payment procedures, operational savings, and even time savings are among the major advantages of such transformation programs.

The success of digital solutions in rural areas largely depends on the ability of the designed models, to meet the needs of stakeholders in the agricultural world and to adapt to their constraints. “User-centric approaches” and more particularly the Design Thinking method, provides powerful tools to address these challenges.

While Sofrecom will be working on documenting all the requirements that will be presented to the different solutions providers, the CNAAS will be preparing to select the partner that will enable the success of its digital transformation.