

Agricultural Insurance & Digital Payments

Challenges of payment digitalization in rural areas of Senegal



Study's Authors

This case study presents the lessons learned from a digital transformation project, undertaken by the National Agricultural Insurance Company of Senegal with the support of the World Food Programme and Sofrecom.



National Agricultural Insurance Company of Senegal

The National Agricultural Insurance Company of Senegal (CNAAS) is the result of a public-private partnership (PPP). It contributes to the agriculture modernization in Senegal, by offering products to agricultural players that cover the risks related to their activities. In addition to its “classic” insurance products, the CNAAS has been a leader in the development of so-called “index-based” insurance products.



World Food Programme

The World Food Programme (WFP) is one of the United Nations bodies that aims to eradicate global hunger and malnutrition. Nobel Peace Prize in 2020, the WFP is the world's leading humanitarian organization fighting hunger, providing food aid in emergencies, and working with communities to improve nutrition and build resilience.



Sofrecom

Sofrecom is a consulting and engineering firm, subsidiary of Orange Group, with a renowned expertise in telecommunications and digital financial services (DFS) sectors. Sofrecom supports multiple players, such as governments, international institutions, or financial institutions, in the implementation of their digital transformation projects.

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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 myself 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.



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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 operations¹

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

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

¹ In particular, the subscriptions, storage and archiving of data, as well as the production of a report



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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



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An approach to digitalizing payments



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

Ideation

New payment model: a « phygital » approach

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

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.

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 dissatisfaction, 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

Understanding expectations of stakeholders in rural areas

► 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)

less than 30%

of its insured producers are comfortable with a digital interface (CNAAS observations, 2020)

35%

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

It reveals strong disparities among the targeted users in terms of access to financial services and digital literacy.

Digitalizing the last mile can be challenging: only in exceptional cases do producers own bank accounts or accounts within microfinance institutions, making it impossible to make transfers. Furthermore, they tend not to use the internet and very rarely own a computer or a smartphone

► **A hybrid approach is recommended, in which the PO, a key player, maintains a pivotal role**

During the ideation workshops led by Sofrecom, the project's team creates a series of desired and high level payment journeys (details will be refined once the solution is selected).

These user journeys are designed accordingly with **4 main principles**, adopted by the team:

- **A “phygital” approach** (both physical and digital) is adopted to cope with producers' limited access to digital tools: in addition to the digital journey, the human interface (with the PO) will be maintained
- **The PO**, a trusted and close partner to producers, will keep a **pivotal role** in the digitalized process
- Ideally, **users** (producers and POs) should be able to **select their preferred payment method** (the one they usually use)
- Among these payment methods, **users shall be able to use payment services that rely on a network of local agents**: money transfers and mobile money in particular

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

Additional analyses carried out by Sofrecom show that digitalizing procedures can potentially neutralize the difficulties encountered by stakeholders. Overall, about 75% of stakeholders' “pain points” can be addressed and almost all of those directly related to payment can be solved.



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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

Digitalization Strategy

A “SaaS” model that ensures financial and operational agility

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

Historically, the CNAAS has adopted a pragmatic IT approach. It has made moderate investments and holds a limited number of technology assets, both software and hardware. While the CNAAS digital transformation project initially aims to acquire a solution, the project's team is exploring alternative approaches that would avoid excessive investment.

It also seeks to minimize the operational impact associated with the management of the future IT solution (possible need to set up a team to operate and maintain the solution).

According to comparative analyses, payment solution providers using a “SaaS” (software as a service) model are best poised to implement the desired customer journeys. In addition to enabling the use of digital payment tools, these solutions allow to digitalize procedures related to the payment of premiums and compensation. Thus, subscription, collection and storage of insured members' data, generation of reports, automated notifications and document signing are all functionalities offered by certain payment solution providers. Most importantly, in this “SaaS” model, the initial investment is minimal to nil.

Similarly, the solution does not have to be installed on the client company's servers. Also the provider remains responsible for operating it. This scenario, which offers the CNAAS the financial and operational flexibility desired, is favored by the team. The initial strategy, consisting in investing in a solution, is thus redefined: the aim is now to procure payment services and have access to a “SaaS” 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

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

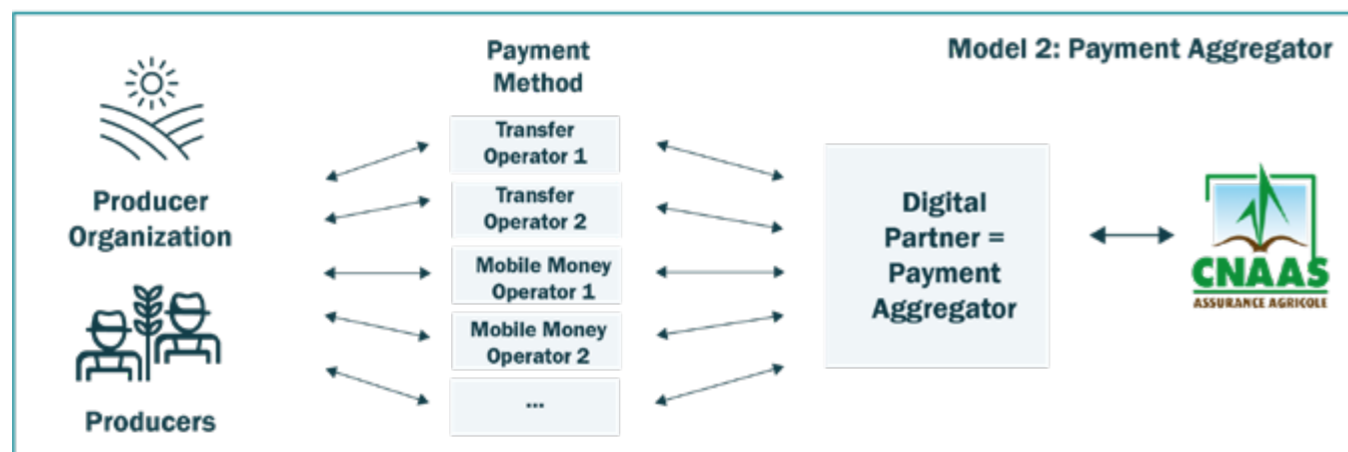
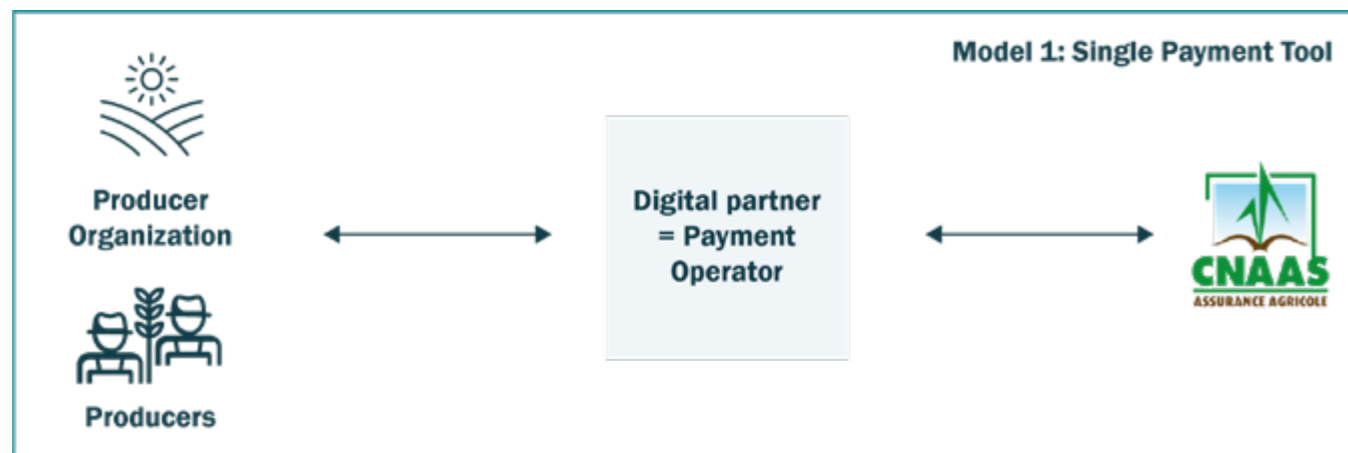
► **Two scenarios which respective advantages will be studied**

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.

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

Siré DABO, Program Policy Officer, PAM

Types of partners/providers



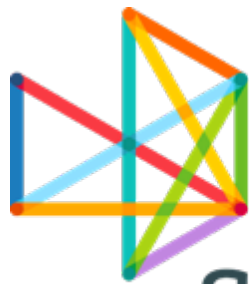
Conclusion

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.



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