Background Paper: Regional and National Experience with inventory credit

I Early inventory credit initiatives in Senegal

There were four small inventory credit initiatives during the latter 1990s, three with millet and one with maize during the latter 1990s[1].

In the case of CMS, it authorised its local *caisses* (cash points) in the *Sine Saloum* and *Tambacounda* regions to store the crop and lend against it, with a view to preventing its members over-selling their millet at low prices before the harvest. Loans reached up to FCFA 50,000 per member. The grain of each member was stored on an identify-preserved (IP) basis by the *caisse* managers under a dual key arrangement. This means that the padlock that secures the stored grain has two keys of which one is given to the farmer and one to a representative of the local authority. The initiative reportedly worked successfully for two years but was then suspended after an unsuccessful year in 1998/99 when it generated significant losses. The main problems were that prices had fallen heavily, the high loan-to-value rate and poor handling of grain and storage: grain was accepted on the basis of the member's declaration, not weighed, and pest control was inadequate, leading to losses. Originally only 75% of the crop value was advanced, but this was increased to 100% in the last year, leaving no margin to cover the speculative price risk.

It can thus be resumed, that the scheme generally benefited the farmers but failed due to do poor organization.

Producer-oriented schemes have advantages over schemes working with traders and processers - having a better market information network it was formerly assumed that these would work better – including:

- Better organisation.
- More attention paid to storage management, pest control and price risks.
- Farmers valued these schemes in part because of their forced savings aspects.
- Even if farmers didn't enjoy large price gains, they valued the inventory credit schemes because they put the crop beyond family and social pressures and ensured a ready supply of grain, for consumption or transactional purposes, in the lean season.
- High level of loan repayment, approaching 100% in most schemes.

II Village inventory credit scheme around Medina Sabakh (south of Kaolack, adjacent to Gambia)

In their traditional arrangements, farmers normally store millet either unthreshed in the field, using a mud granary, or in threshed form in sacks at

1 CMS could not provide a written report on its inventory credit initiative, but verbal reports are generally adverse.

home. They normally sell it in small volumes between 20 and 100 kg at a time to meet a variety of expenditures. They often run out of grain by May/June due to consumption requirements, as they need to pay for school expenses earlier in the year and meet a range of social commitments. Therefore a consortium of organisations was founded and led by GRET, the French NGO/consulting company, to organise and promote an inventory credit initiative following closely on the lines of that implemented in Niger under the FAO Projets Intrants.

Under this scheme a MFI called U-IMCEC provided inventory credit loans to farmers from two villages after the 2010/11 crop and three villages after 2011/12 crop, for millet and maize (mainly millet). In principle stocks should be stored as early as November, then put under loan and held for a period of 6-8 months before loans are repaid and the store is opened. Unlike the case in Niger, farmers take loans from the *caisse* individually, rather than through their producer organisation. As in Niger each farmer may dispose of his crop individually (for home consumption or for sale) after repaying the loans, or they may sell collectively.

By taking advantage of prior experiences, the consortium was able to implement the project in a fairly thorough manner and avoid problems that occurred with earlier Senegalese initiatives. Stocks are held under a dual padlock arrangement, with the local PO and the MFI both holding a key to the locks. Following the example of projects in Burkina Faso, the PO collects a fee of F 100 per month for each for each 100 kg bag stored, to be used to cover storage costs, warehouse maintenance and other expenses. Notably, there was careful (visual) quality control before grains were put in storage, and the contents of sacks were emptied on tarpaulins prior to storage.

The volumes of grain stored in the three villages increased from 34 to 45 tons between the two project years. However, the volume fell in the first two villages, this being attributed to the very poor harvest of 2011/12.

	Taïef	Diaglè	Loyène	Total
# stockeurs 2011-2012	11	21	59	91
Mil (kg)	5 626	6 444	22 167	34 237
Maïs (kg)	514	2 824	6 346	9 684
Kg/producteur	558	441	483	483
# stockeurs 2010-2011	24	44	0	68
Mil & Maïs (kg)	18 000	20 000	-	38 000
Kg/producteur	750	455	-	559
Evolution 2012/2011				
# stockeurs	-13	-23	59	23
Quantité stockée	- 11 860	- 10 732	28 513	5 921
Kg/producteur	- 192	- 13	-	- 76

Table 1: Volumes of grain stored under GRET-led inventory credit scheme in villages of Medina Sabakh

An interview with Ousman Thiam revealed that farmers were reluctant to participate at the outset but over time more and more joined. However, it

was important to have a facilitator on-site to make the project work. He also mentioned the need for a system of mutual guarantees among POs belonging to the same union. All this implies cost in getting the system up and running and considerable recurrent costs thereafter.

This scheme involved considerable project-subsidized supervision that could not be borne by the MFI over the longer term: their staff had to make monthly visits from Kaolack (some 80 km away) along with staff of cooperative partners. Moreover the interest rate of 12% per annum does not leave a significant margin on the cost of funds used – 8% to the Union, 11% to the *caisse* – although the project is reported to have helped the MFI develop local clientele for their programme *crédit de campagne*. Two of the three warehouses were remains of previous development projects, and were rehabilitated by the project, while one of them at Loyène was built by the project itself. Many of the U-IMCEC *caisses* have been built with donor support.

It has proved difficult to get products into storage on time, and farmers had to wait until February to get their loans - often forcing them to sell their products earlier for quick cash. This is partly due to the lack of mechanical threshing capacity for coarse grains, much needed in the peanut basin, given the demand for labour to handle the peanut harvest. Moreover, stocks are released from storage too late for some farmers. There are also unresolved issues about the responsibility of the different parties involved, notably between the local PO and the union, ADAK, who covers the cost of the pallets and scales. Reportedly, one group of farmers had complained about a defective spray gun for insecticide treatment and about their having to cover the cost of storage insecticide. However caution is recommended when interpreting these complaints. Furthermore, lack of financial education caused mistakes in the bookkeeping of the storage.

All in all, the activity required quite intensive project support in the early stages, and may or may not become sustainable in the medium term, depending on the commitment of farmers to making it work without a continuation of external support. Varied longer term outcomes are evident in Niger, the best being the Alhéri Union of Konkorido, where by 2008/09 about 2,000 members were storing some 960 tons of commodities, i.e. an average of 480 kg of commodities each, in 35 small village stores, and borrowings had reached F 112.6 million. In Niger, interest rates were much higher than in Senegal, around 2.25% per month.

III Planned CLUSA scheme

The Cooperative League of the United States (CLUSA) is offering longer term institutional support to small farmers producing millet in the peanut basin, in a project involving 24 farmer Unions. CLUSA started by promoting the POs in the region, including 24 farmer Unions, each composed of 10 GIEs. It then enabled them to access *crédit de campagne* from U-IMCEC, and is now identifying suitable warehouses to rehabilitate for storage and inventory credit. The Unions will use this to buy the millet from the farmers, after mechanical threshing. Significantly, CLUSA is seeking to link

production and marketing credit, such that farmers depositing in village warehouses can convert their *crédit de campagne* into inventory credit without selling the crop - a move that potentially has important synergies through cutting costs of loan collection, increasing profitability and providing farmer families with more timely cash. It is estimated that each union will need an average of F 10-12 million of financing, i.e. a total of F 250 million.

CLUSA's current contract ends in 2013, but is expected to be extended to 2015. This would allow for enough time to train farmers and get the scheme off the ground.

This scheme has a stronger focus on group marketing than the current GRET-led inventory credit initiative. It might be significant in view of the supply problems experienced by milling companies, seeking to develop markets for millet-based products. According to GRET, several companies are selling around 30 tons of millet-based products for domestic consumption, largely through supermarkets, and for exports, notably Thiaré (used to make couscous), Thiakré and Arraw (products to which people add hot water and yoghurt - *lait caillé*), Sonkhal (similar to Arraw in the form of flour), and chilled yoghurts containing the millet ingredient. According to GRET, however, the companies are facing problems in obtaining a consistent supply of raw materials, for instance they sometimes get millet containing up to 15% sand and other impurities.

This suggests that there are policy constraints through taxes and import tariffs that favour the imported rice over locally produced traditional cereals and thus make them less competitive.

IV The PCE maize marketing scheme

PCE has been seeking to develop the value chain for maize, linking producers in central and southern Senegal and processors (mainly poultry feed compounders but also manufacturers of food products) concentrated around Dakar, and substituting circa 100,000 tons per annum imports. PCE's key challenge has been to convince the processors that Senegalese farmers can competitively supply domestic industry in the face of international competition.

The original scheme, starting in 2010/11, involved companies called *Consolidators* that would contract farmers to produce the maize that they would deliver to the end-users. The financiers, notably the Government agricultural bank (CNCAS) and CMS, participated in MoUs (*protocoles d'accord*), providing farmers with *crédit de campagne* to cover the cost of seed and fertiliser. Farmers would in turn need to deliver their products to the consolidators at pre-determined prices, and these would pay the proceeds into the farmers' accounts net of sums advanced. The consolidators would then sell the maize to the processors on the basis of forward contracts.

The largest of the consolidators was the cotton company SODITEFEX that has been assisting cotton producers with maize production for many years. Additionally, a range of other players, particularly fertilizer suppliers

SOENA and SEDABB, joined the list. 361 tons were reported to be marketed through this scheme in 2009/10 and 5,550 tons in 2010/11. They forecasted 9,050 tons for 2011/12, but then the operation proved problematic, with contractual disputes and some payment defaults.

There are some key issues that lead to the downfall [2]:

- **Contracting is greatly complicated by Government fertilizer subsidies, particularly prevalent in pre-electoral periods. SODITEFEX reportedly abated prices in favour of farmers - assuming that it would get the subsidy, but when the Government failed to deliver as foreseen, it (allegedly) did not make this clear to farmers, only revealing the fact when they were recovering the output[3]. Many of the farmers then opted not to deliver to SODITEFEX but to repay directly to CMS.**
- **In 2011/12, many farmers did not deliver to consolidators because of a major rise in the market price. The original price of F 125 per kg, nearly $250 per ton was considered very favourable but as market prices rose as high as F 180 per kg, farmers increasingly opted to sell on the open markets and reimburse CMS directly.**
- **SOENA simply received the output but defaulted on its contractual commitment, failing to deposit the net proceeds at CMS, leaving F 7 millions outstanding.**

CMS has not continued with the scheme in 2012/13, but has notwithstanding continued providing *crédit de campagne* for maize, some F 219 million out of a total loan portfolio of approximately F3.5 billion in the Kaolac region (most of it for production of groundnuts and fattening livestock). Indeed regional staff took the view that, with repayment of *crédit de campagne* being in the range 94-98% by due date, and 98-99% overall, it is unnecessary for farmers to forward contract for maize.

In early 2012, the partners in the maize scheme have moreover decided to try a new marketing formula for the upcoming harvest. Some of the details have still to be worked out, but according to PCE it will work along the following lines:

The central player will be a relatively new producer organization called FEPROMAS that has about 1,800 members and is based in Paoskoto, a strong maize-producing area in the department of Nioro. Early in the marketing season, members of FEPROMAS will constitute their own stock of 1,000 to 1,500 tons of maize in a warehouse in the port of Kaolac. The stock will be collaterally managed, probably by SDV. FEPROMAS-affiliated Groupements d'Intérêt Economiques (GIEs) will then obtain inventory credit secured by the stock they have deposited, and they will use this to buy further stock and deliver it to the processors. At the end of the marketing season, FEPROMAS will sell the collaterally managed stock, probably to a single buyer, with a view to obtaining a premium price, and liquidate outstanding loans. The collateral manager, SDV, will be

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[2] Based on statements by CMS and PCE staff during interviews.

3 This version of events has not been confirmed by SODITEFEX.

remunerated at a rate of F 3-4 per kg of maize handled. PCE hopes that the volume stored will rise to 2,000 tons within a year or two, as this volume will justify shipping the maize to Dakar at low-cost by boat (as for example groundnut cake).

Poor rainfall in 2011/12, after five "good years", has highlighted the risks of low precipitation. Weather index insurance is being put in place for this reason, to be paid for by the banks. CIRAD has been working out a formula together with the national meteorological office, and ACEP has signed up 100 farmers during this season – CMS has not yet signed up.

V Rice scheme in the Senegal River Valley

The background to this scheme is one of rapidly growing Senegalese demand for rice which has long been predominantly supplied by Far Eastern countries, while domestic producers only supplied a diminishingly small portion of the demand. The annually imported volume amounts to 1 million tons, while Senegal has struggled to produce as much as 300,000 tons in a year. The imported produce is mainly broken rice, but it is clean and well-graded whereas domestic rice has been heterogeneous and contained a lot of impurities. Most domestic rice is processed by small one-pass mills (*décortiqueuses*) which lack cleaning and grading equipment – as of 2008, these were accounted for 70% of the milled crop. A number of more modern mills with a capacity of 3 to 5 tons of milled rice have been built, but most are heavily indebted and, consequently, their capacity utilisation is low.

Up to the middle of the last decade, the rice industry was hampered by a production-driven approach with CNCAS providing a large amount of *crédit de campagne*, a high percentage of which was not repaid. CNCAS then tightened up their lending conditions; however this caused a major drop in the number of farmers receiving financing. Coumba Nor Thiam, SPCRI and some other players have moved into the gap, providing inputs to delinquent debtors under contract farming terms. There has also been a major increase in double cropping, with a *contre-saison* taking place in the dry early months of the year before the main *saison d'invernage* between June and November. Credit had to be available for the *contre-saison* by February, what has proved to be quite a challenge, since first it is necessary to certify reimbursement of the main season credit by January of the same year.

The organisation at the centre of agricultural development in Senegal is the SAED[4]. It is responsible for the development of irrigation schemes, where it channels support from a range of donors, and is the key Government institution coordinating efforts to develop value chains. Large scale works like channels, dams and retention walls are 100% funded by public money. The World Bank is itself financing rehabilitation in two projects, the PDMAS

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[4] Société National d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal et de la Falémé

project at the Saint Louis, and another project in the departments Podor and Matam.

SAED estimates an annual demand for seasonal agricultural credit in the Senegal River Valley (all crops) of about F 15 billion of which about F 6 billion (40%) is met by the CNCAS, and the rest is met by a combination of other lenders including mutual institutions like PAMECAS, CMS and FEPRODES and private entrepreneurs like Coumba Nor Thiam. In fact, Coumba Nor Thiam alone provides approximately F 2 billion of inputs to farmers under contract. Further, there is SPCRI, a company promoted by the Government with shareholders that include some leading traders in the rice import business. They have contracts with farmers and with large scale buyers, and have the rice tolled, milled and packed, using their own capital to finance all transactions. The Regional office of CMS had an agricultural loan portfolio of F 2.5 billion as of 31/10/12, including *crédit de campagne* for rice, horticulture, and for livestock fattening *(embouche)*. However, the statistical information on CMS lending is scarce, thus a breakdown between these categories cannot be provided.

Vital, a rice mill that is different of those described above, is at the centre of a scheme coordinated by SAED, with the involvement of the regional agricultural authorities (DRDR) and technical support of PCE, and involving a large number of POs (Groupements d'Intérêt Economiques, GIEs) federated into Unions. Through this scheme the partners seek to develop a more integrated value chain by marketing milled rice on terms that are competitive with the imported product, and ensure payment of user fees (*redevances*) and full reimbursement of *crédit de campagne* in both harvests.

Two banks are involved in this scheme: CNCAS that lends to the POs, and the Banque Régionale du Marché, that has set up a credit line of F 1.3 billion (US$2.5 million) for Vital. A similar scheme is being established with a Belgian company called Teral: There is a tripartite agreement between CNCAS, the miller and the PO. CNCAS provides the POs with *crédit de campagne*, fixing them a credit limit for the season, while the miller supplies the inputs. The agreement provides a contract forward to sell the crop to Vital, and Vital likewise contracts a range of rice distributors – some of the same companies that handle the importation of milled rice - for the sale of their (branded) product. The price structure is negotiated in advance in a meeting convened by SAED, who also provide necessary agronomic support.

At the time of harvest the amount of crop corresponding to the reimbursement and the *redevences* must be deposited in the Union warehouses, where quality control is applied. Unions run these warehouses themselves while the bank carries out direct surveillance, also relying on SAED officials for information on deposits and stocks held. The Unions appear to be carrying out an informal collateral management role, while CNCAS monitors the stock. SAED requires the Unions to follow good storage practices and have management committees that levy F 100 per bag and month to cover expenses. Once POs have deposited the stocks,

CNCAS consigns the stocks to repayment, crediting the PO's corresponding loan account and debiting Vital, who is then free to collect the stock, ship it to their mill and process it. Vital in turn reimburses CNCA. Thus, the GIEs clear the debts to CNCA who can now provide fresh production credit for the new season[5].

The Banque Régionale de Marché has Audit, Control & Expertise (ACE) on Vital's site to carry out stock monitoring. Every time Vital constitutes F 50 million (about $100,000) in stock, ACE issues a *bon de tirage* enabling Vital to obtain further funding against a pledge to the Bank. Vital sells to existing milled rice distributors, the same ones who handle imports, on an ex-factory basis and on cash terms. Some distributors pay in advance, others provide certified bank drafts (*traites avalisés*) that are then rediscounted by Vital. Medium-sized markets are deliberately targeted at the moment rather than Dakar. The volumes of paddy handled under this scheme have increased exponentially:

2011/12	**campagne invernage**	**2,800 tons**
2012	**contre-saison**	**20,000 tons**
2012/13	**campagne invernage (forecast)**	**35,000 tons**

Only 11,000 of the 20,000 tons from the 2012 *contre-saison* were used for repayment of loans, the remaining 9,000 tons being outright purchase by Vital. Vital now has financing of a second production line for 50,000 tons at 5 tons milled rice/hour working 23 hours/day in peak season.

Quality control is asserted to be effective, giving rise to a uniform product which competes effectively with imported rice[6]. However, there have been problems with too much moisture in *contre-saison* rice that is harvested at the beginning of the rainy season (that was particularly heavy in 2012), leading project partners to supply the GIEs with moisture meters. Suggestions have then been made that donors should provide transit warehouses (possibly mobile structures like WFP's Rub Halls) to be located close to the paddy fields. Mini-mills have also been supplied in order to test for the milling yield.

On the *legal aspects of inventory credit systems* the following information could be obtained:

The legal status of warehouse receipts in the UEMOA zone is reviewed in a paper "Aspects Juridiques de la Tierce Détention." The main legal text of relevance is the OHADA 1997 "Loi sur les Suretés" that allows lenders to hold a lien over stocks held on their behalf by collateral managers, and to pledge the goods held by the borrower, without dispossession by a collateral manager – often associated with Stock Monitoring Agreements (SMA). Operations of the latter kind are supposed to be registered to

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5 This is a new initiative; a significant part of CNCAS lending is to individual farmers and POs that are not contracting with Vital

6 This fact could not be proved.

protect the lender's security. There is no legal provision in the UEMOA zone for public warehouses issuing negotiable warehouse receipts; earlier French laws for magasins généraux issuing récépicées-warrants have become defunct. However, the authors argue strongly for the development of this system:

> **la création d'un statut juridique des magasins généraux devrait bénéficier en priorité aux petits producteurs qui verraient s'ouvrir à eux les circuits financiers et bancaires auxquels ils ont rarement accès. En effet, les centres de collecte et établissements d'entreposage situés à l'intérieur du pays pourraient parfaitement être agréés et faire fonction de magasins généraux bord-champs, où seraient entreposées leurs productions qui pourraient alors être gagées au profit des banques et autres intervenants dans la filière. Enfin, l'existence d'un réseau de magasins généraux disséminés à l'intérieur du pays et dans les ports d'exportation aurait un effet de centralisation et la constitution d'un véritable réseau de collecte permettant à l'Etat d'assurer le contrôle de la qualité et de normes diverses, par l'intermédiaire de professionnels de la Tierce Détention, sans aucune incidence financière pour le budget de l'Etat.**

The key concepts here are that such a system can democratise access to commodity-collateralised finance, as lenders focus on the warehouse receipt as a security rather than the credentials of the borrower, and bring about quality standardisation in the supply chain.

There have not been significant legal issues with village inventory credit schemes in the Sahel, as lenders' security stems not from the law but from farmers' strong interest in maintaining their access to credit. However, Coulter reported an issue with CMS's scheme in the late 1990s. A legal interpretation of the OHADA 1997 Loi sur les Suretés had been provided, according to which the operation could be challenged on the grounds of no collateral manager in place and no insurance cover. CMS had responded by self-insuring the operation based on a charge of 5% of the value of loan, and required that there be two literate witnesses to the transaction. In any case, with schemes like the one led by GRET, it could be construed that the PO is collaterally managing goods in store.

It is possible that banks financing against stocks held by a multitude of farmer-depositors but managed by collateral managers will encounter legal issues that do not affect the collateral management operations in the ports. There may also be difficulties with the registration requirements due to the *nantissement sans dépossession.* PCE reported that the West African Central Bank (BCEAO) has not adjusted prudential ratios (*accords de classement*) to reflect reduced risk with collaterally managed stock, resulting in the restriction on funds that can be lent as well as ceilings on borrowings. The disposition is more restrictive for smaller financial institutions, given the importance that individual borrowers can represent in their overall portfolio.