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The U.S. Government's Global Hunger & Food Security Initiative



NAATAL MBAY AND THE INTEGRATED FINANCE MODEL IN SENEGAL

SUMMARY OF KEY FINDINGS FROM AN EX-POST ASSESSMENT

Photo credit: MarketShare Associates

The market systems development (MSD) approach has significant potential to foster sustainable and inclusive economic growth. Yet monitoring and assessing contribution to systemic change is complicated and ex-post studies are infrequent. This has limited the availability of formal evidence on the longer-term impacts created by market-driven programming. To expand the evidence base, USAID is supporting a global series of ex-post evaluations to ask:

What happens to the sustainability and scalability of (i) systems changes and (ii) the resulting outcomes, years after a program that adopted elements of the MSD approach ends?

This brief captures highlights from the first study, conducted in 2023, three and a half years after the closure of USAID's Feed the Future Senegal Naatal Mbay Activity. Using USAID's Disrupting System Dynamics (DSD) framework as an analytical tool for understanding systems change, the researched examined the scale and sustainability of changes resulting from Naatal Mbay's **introduction of an integrated finance model in the domestic rice sector in Senegal**. The findings, summarized in this brief, show a relatively positive evolution since project closure, with three of the four intended systemic changes enduring over time. The full report will be available at www.agrilinks.org/msp in Sept 2023.



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BACKGROUND

Despite the presence of a dynamic banking sector, access to credit was one of the biggest impediments to rice production in the Senegal River Valley (SRV) prior to Naatal Mbay, which operated from 2015 to 2019 at budget of \$24 million. **The lack of transparency in the informal sector, coupled with climate variability, the absence of loan guarantees and a history of loan defaults in the SRV** deterred financial institutions from lending to farmers. A vicious cycle ensued whereby farmers had insufficient incomes to invest in rice production and purchase quality agricultural inputs, resulting in lower yields which prevented them from turning a profit and re-investing in production the following season.

Similarly, rice processors struggled to access commercial credit to purchase paddy rice as their **borrowing capacity was limited by the value of equity guarantees they could offer**. This affected their ability to source sufficient quantities of product to meet processing needs, thereby reducing their presence in the market and their ability to compete with rice imports.



Photo credit: MarketShare Associates

NAATAL MBAY AND THE INTEGRATED FINANCE MODEL

Naatal Mbay worked with relevant market actors to broker an alternative contracting arrangement to address the challenges faced by financial institutions. Under this system, known as the *integrated finance model (IFM)*, **financial institutions act as ‘trade facilitators’ and accept paddy rice from farmer groups as loan collateral**. Financial institutions also extend lines of credit to rice millers who purchase the paddy rice from farmer groups, process it and sell it to buyers who supply domestic markets. A collateral management system (e.g. third-party holding system), mandated by the financial institutions and paid by millers, tracks stocks of paddy and processed rice. Through this innovative mechanism, loans are secured by the value of stocks as they are transferred from one market actor to another.



LEGACY OF CHANGE

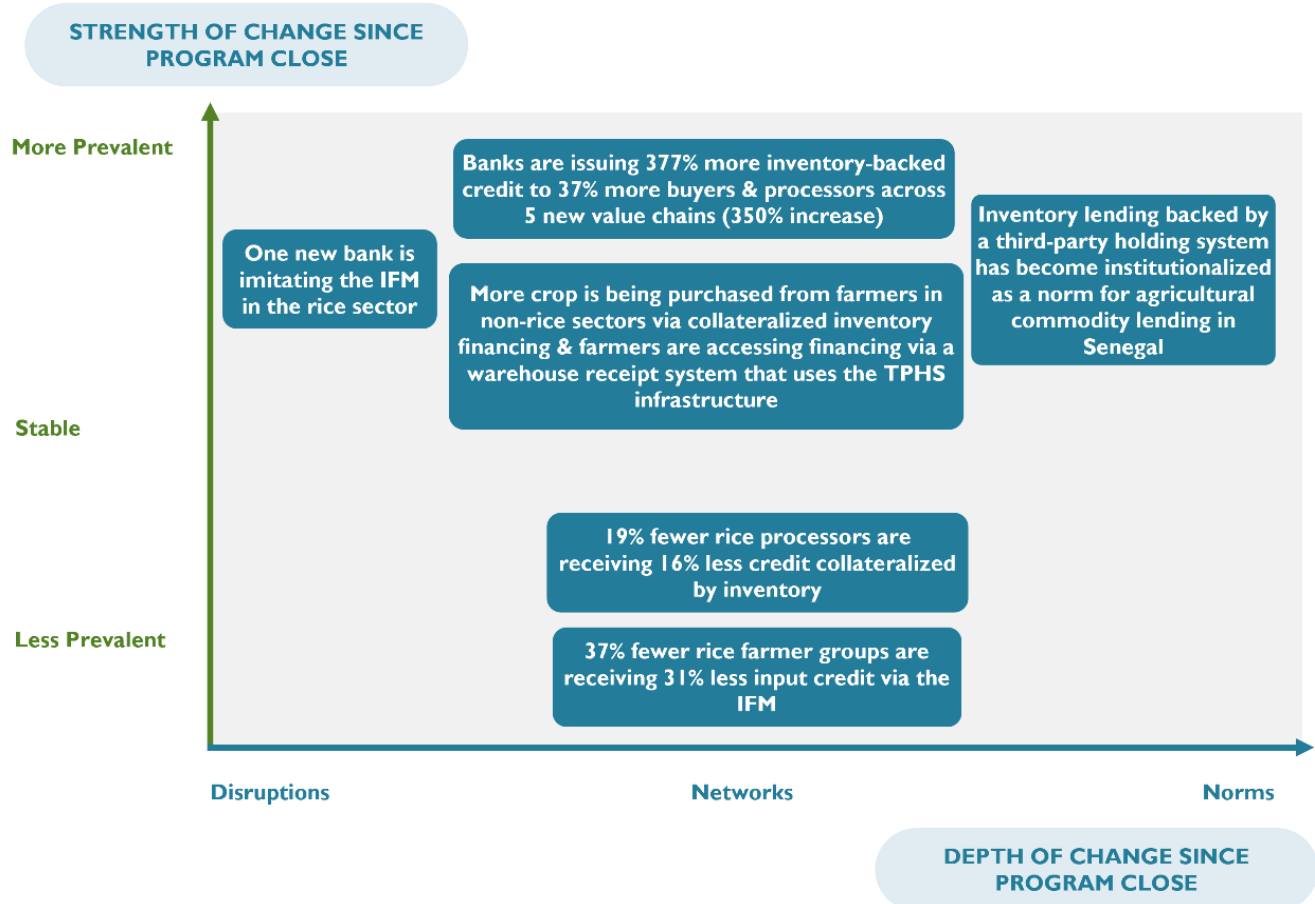
The study examined four areas that demonstrated potential for systemic change at the end of Naatal Mbay. Three and a half years later, **three systemic changes had endured and thrived, while one did not.**

Systemic Change #1: Market actors accept signed contracts and secured crop as collateral on which to provide increased amounts of credit at reduced risk.

- Since program closure, **the number of financial institutions offering inventory lending to processors/buyers remains stable with some** imitation in IFM lending to farmers.
- **Access to commercial lines of credit for rice processors and seasonal credit for rice farmers decreased**, both in terms of total value of credit granted and in number of farmer groups/processors accessing credit. This was a direct consequence of poor productivity driven by climatic and other COVID-19 related shocks in recent years.

- **The integrated finance model has spread beyond the rice sector.** The provision of commercial credit to buyers and processors, backed by the third-party holding system, has spread to other five value chains. Hence, across the entire agricultural sector, 37% more companies are accessing 377% more inventory-backed lending than at the close of Naatal Mbay.
- The third-party holding system has become **institutionalized as a requirement for agricultural commodity lending**, reflecting a strong sense of buy-in among key market actors.
- The integrated financial model has influenced **the development of a new collateral-based lending system** in which farmers can borrow up to 80% of the value of several different crops following harvest. It uses the same third-party holding system infrastructure that Naatal Mbay introduced.

This figure summarizes how aspects of this systemic change— widespread acceptance of contracts and crop as collateral for credit at reduced risk— evolved between the end of Naatal Mbay and the ex-post evaluation. More in the full report.



Systemic Change #2: Contracting between producers and processors continues to be a widespread practice in the rice sector.

- **Formal contracting remains an established and widespread practice for the sale of rice.** The majority of rice processors source paddy rice through formal contracts.
- **Contracting has contributed to substantial investment in rice processing**, as shown through the emergence of 60 new rice millers in the SRV by project closure. As of early 2023, investments in new rice processing plants and upgrading existing plants continue to grow, with new entrants establishing themselves.
- **There is stronger trust and cooperation between market actors**, as demonstrated through greater investments by processors to establish and retain commercial relationships with efficient producer groups.

Systemic Change #3: Senegalese rice effectively competes in higher value local markets.

- **Quality standards continue to be applied in the rice sector** at similar levels to program

closure and have become a standard component of processor contracts with farmers.

- **Processors continue to invest in systems that enable them to maintain and further improve the quality of both paddy and processed rice.** Many processors have invested in setting up their own field extension systems through which they provide agronomic support to contracted producers to ensure quality.
- **The competitiveness of Senegalese rice in high value urban markets has endured since program closure.** Despite the lack of quantitative data available in Senegal on the penetration of local white rice in higher value urban markets, there is a clear increase in consumption of rice from the SRV.

Systemic Change #4: The enhancement and digitalization of information management systems among unions of farmer cooperatives was not sustained.

- Despite significant investments by Naatal Mbay to support the development and adoption of data management systems across the value chain, the use of **many of these systems does not appear to have been sustained** beyond the lifetime of the program, largely due to cost.



GAINS FOR TARGET POPULATIONS: SMALLHOLDER FARMERS IN THE SRV



Income gains were sustained by rice farmers since program close. This was driven by the increase in the sale price of rice, which has balanced a reduction in productivity due to COVID-19 and climate-related shocks.



Double cropping of rice, which Naatal Mbay had hoped would increase incomes, continues to not be widely practiced. The comparatively higher returns of growing horticulture in the winter season, delays in credit approval and disbursement, and shortages of harvest mechanization services at peak times all have impeded this. However, **the shift to mostly growing rice during the summer season when farmers can obtain double the yields of the rainy winter season**, which the integrated



finance model had enabled via better access to finance and had occurred by the end of Naatal Mbay, continues to this day.

Farmers' access to finance remains strong.

COVID-19 and climate-related shocks caused some farmers to be unable to repay the loans they acquired through the IFM, and thus lose access to IFM credit in subsequent seasons. This resulted in a reduction in the number of farmers accessing seasonal credit directly through the IFM. Nevertheless, most farmers no longer eligible for loans with IFM-affiliated financial institutions were able to access credit through other alternatives, including via processors directly providing input credit to farmers and accepting repayment in paddy.

IMPLICATIONS FOR PROGRAMMING

Implications for Programming in Senegal

- A predominant focus on farmer productivity will rarely create necessary changes on its own.
- Donor-financed infrastructure investments are better dedicated to more slowly depreciating assets.
- Working with government-led institutions adds new layers of complexity but also can provide more security around financing.
- Private capital – including from smaller and informal businesses – will invest in agriculture when opportunities exist.
- Other sectors, such as the seed sector, can benefit from finance models like the IFM.

Implications for Broader MSD and Economic Development Programming

- Work with partners that have the right incentives for change.

- Small-sized and mid-sized firms in the informal sector are oft-overlooked change agents.
- Successful models often build on a series of earlier successes and pre-conditions.
- Existing, successful models are often good candidates to be adapted.
- Co-development of initiatives builds strong ownership.
- Agricultural commodities have the potential to be a powerful source of collateral.
- Models like the IFM envision credit as a tool for trade facilitation.
- Commoditizing agricultural products requires a supportive legal framework.
- Markets will commonly right-size development initiatives.
- Change often spreads within a system by people bringing ideas with them.

Access the full report, *Lasting Roots: Naatal Mbay and the Integrated Finance Model in Senegal*, at www.agrilinks.org/msp.

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