

## TECHNICAL SUMMARY



### Input Supply Finance

by Nina Holle. Working paper, 2017

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## Introduction

Agricultural production depends on inputs including seeds, pesticides, fertilizer, and labor. However, the upfront investment required incurs significant cost long before any proceeds from the sale of production is realized; this is especially challenging for cash-poor smallholder farmers. Without access to finance, smallholders risk underinvesting in their production, thereby receiving sub-optimal yields and subpar incomes. Input supply finance can address this challenge and facilitate smallholder farmers in driving up their production and incomes. This brief considers the challenges faced by commercial banks in providing smallholder farmers with seasonal input financing, a range of potential approaches to overcoming such challenges, and showcases successful examples from around the world.

### What is input supply finance?

Global population growth and changing diets are increasing demand for food. By 2050, the world will need to increase production by around 70% to feed an estimated 9 billion people. However, farmers are struggling to keep up. Access to loans is essential to ensure sufficient levels of agricultural production, representing a significant opportunity for financial institutions.

However, financing the agricultural value chain is a challenge. Unlike other short-term credit products, loans must account for the unique characteristics of agricultural production. Services must cater to seasonal production with long and varied gestation periods. Lenders are challenged by irregular payments, slow rotation of investment, and the need for complex liquidity management. Additionally, many banks lack sufficient knowledge of local agricultural and environmental characteristics, further complicating the picture.

While agricultural production itself poses many unique risks to lenders, agricultural finance also involves high transaction costs due to low population densities in rural areas, poor quality infrastructure, and distant locations. Remoteness only increases information asymmetries between lender and borrower, where collateral is already scarce.

Financing input supplies is particularly challenging. Farmers and agribusinesses depend on readily available inputs such as seeds and equipment to start

the production process. However, upfront investments impose substantial costs long before any proceeds from outputs are made. Small farmers especially can rarely afford full packages of seasonal inputs on a 'cash' basis.

### Input finance provided by value chain actors (input suppliers)

Input supply finance in its simplest form involves the financing of agricultural activity by other value chain actors, such as input supply companies and other agro-dealer networks who access financing from banks for working capital to finance farmer customers.

For example, an input supplier advances agricultural inputs to a farmer for repayment at harvest or another agreed time when cash is available. The cost of credit (interest) is embedded in the price. Input supplier credit enables farmers to access essential inputs while increasing supplier sales. Input suppliers often face liquidity constraints, so banks might fill this gap by lending to the input supplier (and hence indirectly to farmers and agribusinesses).

As the defining flow of funds takes place within the value chain between input supplier and customer (farmers and agribusinesses), input supply finance is considered a financing instrument in the broader category of value chain finance. In this case, financial institutions which fund farmers indirectly via input suppliers are also relying on underlying value chain links and the information they provide.

Most commercial banks have limited branch networks outside of major cities and generally no branch presence in fully rural areas. Banks interested in financing smallholder farmers and agri-SMEs may choose to lend to local agricultural input suppliers, but leave provision of loans to individual farmers exclusively in the hands of the agro-dealers themselves.

Input suppliers engage directly with farmers and agri-SMEs on a regular basis – they have a strong knowledge of local agricultural characteristics and of the reliable producers in the community. They are often better suited than banks to screen borrowers and serve as conduits for loans, particularly in financing inputs and equipment.

Lending through agro-dealers leverages the benefits of farmer-facing trusted parties. Lending decisions are made with local knowledge of farmer capacity and commitment, and overall transaction costs are reduced.

The interlocking of input and output transactions is commonly used to raise repayment rates, but needs to be combined with competition among traders to maintain attractive output prices. Sharing information on previous defaults is key, as is building relationships based on trust.

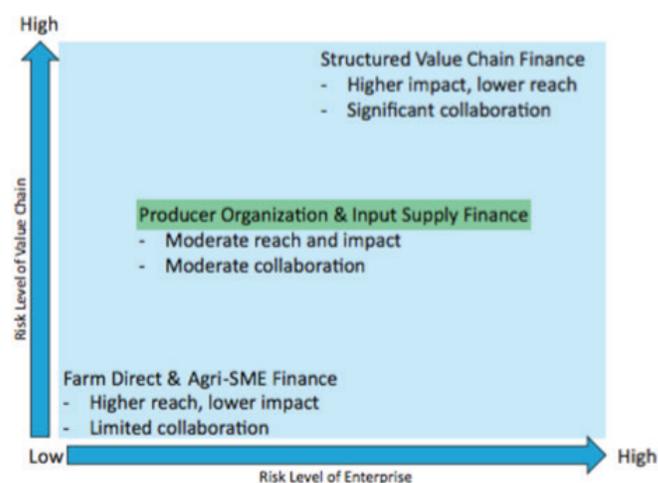
Traders' incentives to develop these transactions stem from the desire to increase market share.

## The role of banks in supporting input dealer financing for farmers

Value chain finance with input dealers means the lender assumes the agro-dealer risk. Over time, the bank may start lending to individual farmers, while still using the agro-dealer to support borrower screening – addressing 'Know Your Customer' concerns and reducing distribution costs. This enables the bank to provide non-credit services to farmers using agro-dealers as agents in the village.

Some agro-dealers are part of a network established by input supply companies, associations, or other initiatives providing technical assistance, which play proactive roles in combining finance with other services. Here, the bank can utilize the combination of inputs and advice to provide finance that enables farmers to increase productivity and earnings. In most cases, these agro-dealer arrangements do not involve buy back deals with farmers, so they do not address access to markets.

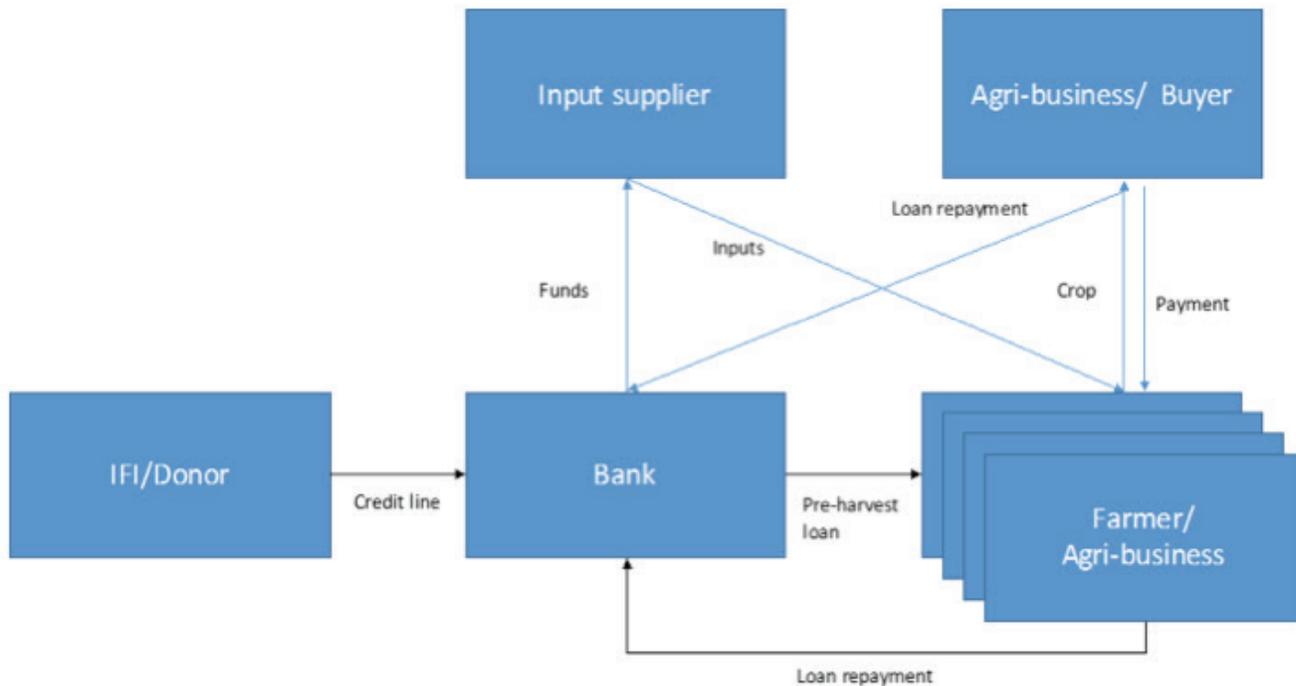
Input supply finance is a hybrid between direct farm and agri-SME financing at one end of the spectrum and structured value chain finance (VCF) at the other.



**Figure 0:** Input supply finance risk levels

While direct financing of farms and agri-SMEs is usually applied when levels of risk are low (regarding the enterprise as well as the value chain), input supply finance is an appropriate model for higher levels of risk with moderate need for collaboration between the parties involved.

In Kenya, for example, local banks cooperate with a large drip irrigation manufacturer to provide affordable financing to purchase equipment along with technical assistance to ensure proper use. Financial institutions use the value chain to offer customized services to help increase production.



## Approaches to providing input supply finance

The generic model can involve up to five main players: the farmer, the input supplier, an agribusiness or buyer, a financial institution, and an international finance institution (IFI) or donor.

The bank extends funds to the input supplier who, in return, provides inputs to farmers. Alternatively, the bank provides pre-harvest loans directly to farmers based on its relationship with the input supplier. The bank itself might be backed by a credit line provided by a donor or an international finance institution (IFI) such as the IFC.

At harvest time, the farmer sells the crop to an agribusiness or buyer and receives payment. Depending on the arrangement, the repayment will either be made by the farmer or the agribusiness/buyer directly.

The provision of input supplies can be further divided into three approaches:

- 1) **Agro-dealer approach.** Under this approach – implemented in Zimbabwe, Zambia, and Ghana – input provision is driven by profit-seeking agro-dealers. Agro-dealers must serve a minimum number of farmers with a certain amount of buying power, while providing a stable supply of inputs on reasonable terms.

Additional revenue streams, such as output marketing, transport, selling solar panels, cement, and animal feed, strengthen the business case of the agro-dealers and complement the sale of inputs. Agro-dealers often give technical advice to clients. However, additional services are usually required to maximize the farmers' returns, including lead-farmers, demo plots, and government extension.

To promote uptake of inputs, credit can be provided at farmer and agro-dealer levels. Consignment stock, combined with stock insurance, is useful in the start-

up-phase, establishing trust between agro-dealers and input wholesalers. Weather and crop insurance are options for a later stage.

2) **Chain leader approach.** This approach is implemented in Uganda and Tanzania and typically focuses on only one commodity and a value chain organized around a powerful actor – a ‘chain leader’. Input supply is driven by a remunerative market for farmers, while the chain leader guarantees the product is bought. The leader works with agro-dealers to provide inputs directly or indirectly to farmers.

This type of arrangement can be attractive to financial institutions – through the buyer they can lend to different segments of the value chain. Typically, farmers get inputs on credit, the buyer deducts the cost when purchasing, and the agro-dealer is paid by the buyer.

This makes this approach the most suitable for ‘modern’ value chains. It does not work well for highly competitive open markets (‘spot markets’). The more buyers are operating in such markets, the higher the risk of side-selling.

Long-term relationships develop when the buyer has established strong market presence and regularly engages with farmers. Risk of side-selling is limited because of the buyer’s dominance in the chain. Extension services are important for the buyer who seeks increased turnover through higher production volumes by increased yields and improved quality.

3) **Local traders approach.** In this approach, there is no ‘chain leader’. It is instead characterized by many buyers, low value addition, large transaction costs, high demand, and an unregulated market – the reality in many agro-chains. Investment from buyers into input provision for farmers is too risky because of side-selling. Buyers are hesitant to finance technical support to optimize input use, as they are not sure the produce is sold to them. These buyers – small-scale processors or retailers – work through local traders, the main players in the value chain, to secure supply.

In this approach the business case is at the trader level. Buyers shift transaction costs and coordination to the traders. When buyers pre-finance inputs for farmers, it’s likely they will not get their money back because of side-selling. Local traders, however, are rooted in communities and have connections with farmers, making cost recovery more likely.

Where necessary, local traders provide flexible credit, largely based on trust. Buyers need to develop networks of local traders, providing them with incentives while accounting for the negative impact of side-selling.

## Challenges of input supply finance

Access to sufficient and affordable financing depends upon the financial services available, as well as the strength of the value chain. Even though countries might have strong agro-industries, their role in financing down the value chain is constrained by these factors. In Africa, Eastern Europe, and Central Asia, where fertilizer is a critical input, few fertilizer wholesalers have sufficient conventional collateral to pledge against repayment of working capital loans. Additionally, banks often do not accept fertilizer as collateral for lending.

Without financial links to importers or foreign exporters who can pass input supply credit on to wholesalers, the latter are prevented from operating on a large scale and reducing transport and storage costs through economies of scale. For fertilizer retailers farther up the value chain, the major challenges involve not only improving access to credit, but also developing the capacity to manage input sales on credit without high risks of default.

Another challenge in some regions is a lack of input suppliers – critical to value chain development. In Africa, for example, development of agro-dealers is essential for accelerating smallholders’ access to quality agricultural inputs. BRAC has developed an interesting approach – forming supplier businesses and links

with external suppliers to provide the necessary input services, and then advancing loans to farmers.

Unlike BRAC, many input suppliers are small enterprises with limited funds and capacity. Their ability to provide and receive finance depends largely on the strength of the value chain and its links. If strong links are present, opportunities exist to reduce default risk by direct repayment arrangements with buyers and to borrow against the strength of the receivables.

## How to finance input suppliers

Banks should look for the following qualities when identifying potential input supply partners:

- A strong track record of providing a range of value added inputs to small and medium sized farmers, normally combining seeds, fertilizer, and plant protection products.
- Strong relationships with local farmers based on solid value added and integrity of the dealer and, if relevant, the brand of the network.
- Strong knowledge of the technicalities of farming in key commodity groups – ideally graduates with agronomy training to help screen agro-loans and participate in disbursements and collections.
- Profitable operations where agricultural finance can contribute incrementally to the profitability of the dealer through fees and increased input sales.
- Ideally, value proposition that includes technical and information services to farmers, enabling the farmer to receive inputs, technical support, and finance from the dealer.
- Adequate in-house capacity to handle agro-loan screening in the season prior to planning and growing, when most agricultural loans need to be made.
- Location in an area where the financial institution intends to concentrate agricultural finance operations.

## ICT in input supply finance

Agricultural input supply companies use ICT applications in various ways to improve the products, services, and support they provide to farmers. Mobile phones and SMS, for example, expand distribution channels to remote rural areas – enabling product and service offerings to farmers which were previously not available. Software applications allow companies to establish and manage rural agent networks, facilitating farmer access to products, services, and technical support.

Mobile banking applications and pre-paid vouchers help farmers and agribusinesses place orders and pay for inputs and services without traveling long distances. This enables payment for inputs during periods when they have cash on hand, such as after harvest, and ensures inputs will be there when they need them. Companies are also offering promotional coupons, tracked and managed by computer database systems, to provide farmers with incentives to try out new and improved products – potentially increasing productivity.

The following section highlights three ICT applications found in Kenya and Zambia, and their impact on both farmers and the provider.

### **Electronic prepaid vouchers for input purchases.**

MRI Agro in Zambia uses an electronic voucher system developed by a company called Zoona. It enables farmers to pre-pay for inputs. Thanks to this system, MRI is able to increase pre-orders of inputs by selling prepaid cards to farmers. Farmers are offered a 10% discount on input purchases and each prepaid card has a code that is electronically registered at the point of purchase, together with the farmer's unique national identification and mobile phone number. Prepaid vouchers help farmers purchase inputs at times of the year when they have resources available.

**ICT to facilitate crop insurance.** Kilimo Salama is an index-based micro-insurance program designed specifically for Kenyan maize and wheat farmers to insure farm inputs against severe weather (rain

and drought). A partnership between the Syngenta Foundation for Sustainable Agriculture, UAP Insurance, and Safaricom, Kilimo Salama distributes insurance policies via local stockists, agro-vets, and microcredit officers. Farmers pay for the insurance using M-PESA and then access information about policies by sending SMS messages to an automated system. Solar-powered weather stations collect meteorological data.

Each growing season is automatically compared to an index based on historical weather data. If the season's rainfall is 15% above or below the average, the insurance payout is calculated and sent via automated mobile payment. There is no 'claims' process or need to send agents to visit client farms.

#### **Mobile banking to facilitate payments for inputs.**

Mobile phone-based payment systems, such as M-PESA, can be used to facilitate input payments. In the case of M-PESA, customers can use the system's broad network of retailers across Kenya to deposit funds and withdraw from their accounts to purchase items such as agricultural inputs, pay bills, receive salary payments, or purchase mobile phone credit. In exchange, retailers receive a commission – a significant source of income.

Input supply companies, agro-dealers, distributors, and farmers all benefit from electronic transactions which are more convenient, time efficient, and less risky (compared to handling cash). Users, especially in rural areas, save significant time and money by not having to travel to the next city to get cash or perform transactions at a brick and mortar location. Agricultural input supply companies enjoy similar benefits – not having to physically get payment from farmers in person or deal with the paper trail and potential issues that arise when using a cash payment system.

## **Case studies**

### **NMB, Tanzania — Agro-dealer scheme**

NMB (National Microfinance Bank) has become Tanzania's largest financial services provider, with a customer base of 1.4 million and growing. It serves a wide range of customers in rural and urban areas, including SME's, small-scale farmers, microfinance institutions, and retail clients.

In 2005, Rabobank acquired a 35% stake in NMB, when the bank was partially privatized by the Tanzanian government. From March 2008 to February 2011, NMB worked with the Financial Sector Deepening Trust Tanzania (FSDT) and the Alliance for Green Revolution (AGRA) to facilitate credit access to agricultural input agro-dealers ('the Agro-dealers Guarantee Scheme Project'). The total guarantee fund stood at USD 2,100,000 for NMB to lend up to TZS 9.5 billion to various agro-dealers for the three years of the project. FSDT contributed USD 1,100,000 and AGRA USD 1,000,000.

The main objective of the project was to ensure timely cash flow to agro-dealers to enable sufficient stocking of supplies of inputs to serve the needs of smallholder farmers in Tanzania.

NMB looked to extend credit facilities to agro-dealers based on the bank's lending policies and procedures for overdraft facilities. Eligible agro-dealers were required to pledge collateral covering the overdraft facility to at least 62.5% of forced sale value. All agro-dealers operating in approved districts participated in compulsory training on business management.

The guarantee scheme helped agro-dealers overcome collateral requirements and access finance in the form of a favorable overdraft facility. Combined with the voucher scheme (input subsidy from the government), this enabled farmers to access inputs on a wider scale than before. The guarantee scheme (and resulting credit facilities) allowed dealers to stock up on inputs, while the voucher scheme enabled farmers to buy them at a reduced price.

Between 2008 and 2011, the project was implemented in twelve regions covering 38 districts – a total of 966 new agro-dealers benefited from the scheme with a total cumulative approved loan amount of TZS 13.27 billion.

The project helped agro-dealers to increase sales and stock levels. It enabled farmers to access seeds and fertilizer in larger quantities (and in some cases better quality) more quickly than before the scheme. In addition, it allowed the bank to strengthen its position in the agribusiness sector.

#### **Bayer, Raiffeisen Aval Bank, Ukraine — SME farmer input credit**

Raiffeisen Bank Aval (RBA), established in 1992, is a wholly owned subsidiary of Raiffeisen Bank International, Austria. RBA is the fourth largest bank in Ukraine and has a 30% share of the agri-lending sector. RBA has 930 outlets across the country, of which 280 are dedicated to agricultural clients. Bayer Ltd. is a Ukrainian entity and the main supplier of plant protection products in the country, with revenues of USD 138 million (2010). Bayer Ltd. is wholly owned by Bayer AG, a Germany-based pharmaceuticals, polymers, and agrochemicals conglomerate. Bayer CropScience manufactures herbicides, insecticides, fungicides, seed treatment, and seeds.

Raiffeisen Aval provides a guarantee to farmers, allowing them to buy inputs on credit from Bayer. Raiffeisen Aval is comfortable taking on small farmer risk thanks to a risk sharing facility (RSF) with IFC on a portfolio of receivables generated by Bayer in connection with sales of crop-protection products to private sector farmers in Ukraine.

The RSF covers a portfolio of seasonal receivables (with maturities less than one year) in which IFC shares 50% of credit losses in the local currency. In addition, IFC enters into a first-loss compensation agreement whereby Bayer guarantees the first 10% of IFC's

losses. Bayer is willing to take first loss risk, as it has both a business incentive to increase sales of inputs and purchase history information on the farmers to gauge creditworthiness. The combination of the RSF, the first loss, and the 'Know Your Customer' (KYC) link via Bayer together support RBA's entry into financing smaller farmers than otherwise would be accepted.

In 2011, Bayer Ltd. reached about 750 farms, mostly medium-sized by Ukrainian standards, with an average of 4,000 hectares under operation. A task force of 24 company agronomists visits the farmers on a regular basis, advising on the use of Bayer products. IFC supported the facility to finance Bayer crop protection products for 27,750 farmers by the end of 2014.

#### **ITC and State Bank of India (SBI) — Smallholder input finance**

ITC Ltd is a leading private sector company in India, with market capitalization of more than USD 33 billion and a turnover of USD 7 billion. ITC is a market leader in cigarettes, hotels, packaging, paperboard, and agricultural exports. State Bank of India (SBI) is the country's largest and oldest bank, with 13,500 branches. The Reserve Bank of India (central bank) owns 60% of SBI.

SBI partnered with ITC to make affordable loans available to farmers for input purchases. Under the arrangement, ITC facilitates all documentation and verification procedures, reducing associated costs, and allowing the bank to offer more favorable terms to more farmers. ITC also allows SBI to effectively manage and monitor credit risk through local knowledge and support of platform operators, and ITC data on farmer transactions.

ITC was one of the first Indian companies to enter into large-scale, direct procurement arrangements with smallholder farmers. Today, the company has the capacity to source produce from more than 4 million farmers across India via an extensive network of 6,500

rural community platforms known as e-Choupals. Led by a host farmer, each e-Choupal is equipped with a computer and Internet connection that facilitates dissemination of local and global price trends and provides direct connection to ITC services.

Farmers may sell produce to ITC, order agricultural inputs, or receive valuable weather forecasting and market information, while eliminating inefficiencies of middle traders. ITC benefits from reduced procurement costs as farmers realize higher farm gate prices. ITC has the capacity to engage more than 50,000 villages through their platform. For providing this service, the company receives a nominal commission at loan disbursement to help defray the administrative costs incurred. Since the program was launched in 2008, ITC has helped to facilitate nearly USD 65 million in credit to more than 70,000 of its suppliers.