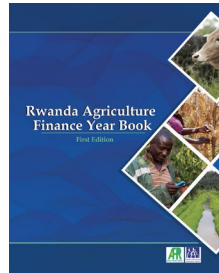


Rwanda Agriculture Finance Year Book

First Edition

Problem solving: Post harvesting Financing





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Disclaimer

The views expressed in this book don't necessarily represent the views of IPAR-Rwanda and AFR about Agriculture Financing in Rwanda.

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The Institute of Policy Analysis and Research (IPAR-Rwanda)

Kimihurura, KG 627St | P. O. Box 6005 Kigali - Rwanda | Tel: +250 789 099 704

Email: info@ipar-rwanda.org | Twitter: @iparrwanda | Facebook: IPAR Rwanda

www.ipar-rwanda.org

Access to Finance Rwanda (AFR)

KG 5 Avenue

P.O Box 1599 Kigali-Rwanda

www.afr.rw

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Foreword



Agriculture is essential for the Rwandan economy as it contributes to a third of the GDP. The sector employs more than two thirds of the workforce and agriculture led growth is expected to play a key role in reducing poverty and eradicating extreme poverty.

The Government of Rwanda is committed to transforming agriculture from subsistence to a productive, high value, market oriented farming sector which has an impact on other sectors. This will be achieved through several programs implemented through the Ministry of Agriculture and Animal Resources (MINAGRI) and its agencies but also with the help of the private sector, development partners and other key stakeholders.

To sustain growth, there is need for farmers to move from subsistence farming to commercial farming, which is possible when they have adequate access to financial services. Finance is needed along the whole production value chain such as purchase of quality seeds and adequate fertilizers, payment of labor, harvesting and transportation of produce as well as post-harvest handling.

However, even though access to finance is important for agriculture sector development in Rwanda, credit to the sector remains outstandingly small at only 6% of total commercial lending. This limits the sector's growth potential.

Recognizing that the agriculture sector faces critical challenges such as access to credit and having in mind efforts by different actors both private and public, led by the Government of Rwanda, Access to Finance Rwanda (AFR) and the Institute of Policy Analysis and Research (IPAR) Rwanda partnered to put together the Agriculture Finance book. The book, the first of its kind in Rwanda, is a great source of information on financing, innovations, challenges and learnings with regard to agriculture financing in Rwanda.

We believe the Agriculture Finance book will add great value to existing initiatives geared towards improving the agriculture sector. It is our sincere hope that the information contained in this book will particularly be useful to farmers, financial institutions and policy-makers.

We thank everyone who contributed their time and effort in one way or another, leading to the successful compilation of the book.

Thank you and enjoy reading!



Ms. Eugenia Kayitesi

Executive Director
Institute of Policy Analysis and Research
(IPAR-Rwanda)



Ms. Waringa Kibe

Country Director
Access to Finance
Rwanda (AFR)

Problem solving: Post harvesting Financing



Background

Agriculture is the most important sector of the economy of Rwanda. Eighty-six percent (86%) of the adult population is involved in agriculture whether as its main source of income or employment. Since 2014 agriculture has a growth of six percent (6%) and in the last quarter of 2018, it contributed twenty-seven percent (27%) to Rwandan GDP. The agriculture sector growth is hence essential if Rwanda wants to achieve its target set in NST 1 and national development programs. The development strategy of the country acknowledges that together with the creation of off-farm jobs, agriculture will play a key role in reducing poverty and eradicating extreme poverty. Improved productivity along the value chain in agriculture directly benefit the poor. It is a pathway out of poverty. This is supported by the findings of a survey conducted by the International Food Policy Research Institute (IFPRI),

which states that: "economy wide growth led by the agriculture sector has a greater effect on poverty reduction than does the same level of growth driven by the non-agricultural sector".

One constraint to the agriculture sector growth is the access to financial services. Financing Agricultural limits come from both demand and supply factors. On the supply side, lending to farmers or agri-business shares similarities to lending to other sectors. However, given its nature of agriculture it has some differences and lenders often do not understand these differences. For example, as agriculture is seasonal and deals with nature, loan repayment conditions need to take into account that cash flows are linked to the agriculture production cycle. Lenders must hence structure their products to meet the production cycle of the activity they finance. On the demand side, smallholders may not be aware of the financing possibilities or may not



provide the adequate guarantee. A big number of the farmers work in subsistence Agriculture and they are necessity entrepreneurs. If they want to become sale oriented and to grow, they have to borrow but they also have to save. Lack of information related to environmental risks, business capability of farmers, value chains, price risks, yields risks etc. creates market failures, which result in insufficient credit, low levels of investment and low productivity of agriculture.

The above is illustrated by the low level of loans to the Agriculture which account for only an average of 6.15 %¹ of the total loans in the country (from September 2014 to march 2018) (BNR, 2018). Agriculture finance is a key challenge to enhance productivity in the sector and to reach the Rwanda targets in terms of growth, poverty reduction etc.

While various agriculture initiatives have been implemented by the Rwandan government, financial institutions, international development partners, non-governmental organizations and other associations, there is a need for a deep analysis and documentation of such initiatives. It is against this background that Access to Finance Rwanda (AFR) and the Institute of Policy Analysis Research (IPAR-Rwanda) collected and analysed agriculture financing initiatives in Rwanda which are compiled in the first edition of the Agricultural finance book. The have supported the Ministry of Agriculture and Animal Resources in collecting and sharing agriculture initiatives in Rwanda, through an agriculture finance book. The book has been compiled and produced with collaboration of different agencies that are involved in the financing of different activities across the agricultural value chain. Organizations that have provided valuable inputs in terms of quantitative figures on access to finance and the amount of

¹⁰ From both the banking sector and microfinance sector (MFIs and SACCOs).



agricultural credit that has gone to the different actors in the value chain include the National Bank of Rwanda (BNR), Rwanda Development Bank (BRD), and the National Institute of Statistics of Rwanda (NISR). Other organizations that have provided the case study experiences include Diary cooperatives such COOIAB and National Agricultural Exports Board (NAEB), Bank of Kigali Techouse in collaboration with the Rwanda Agricultural Board (RAB) have provided useful insights on the functioning of the “Smart Nkuganire platform” which will go a long way in de-risking agriculture in Rwanda and improving efficiencies in the distribution of inputs like seed and fertilizers in Rwanda. Although the information has been collected from different actors in agriculture financing chain, the experiences and lessons provided in this book will go a long way in improving the functioning and performance of the agriculture sector in Rwanda. This is because agriculture is a critical sector where all activities such land preparation, planting,

agronomic practices, harvesting, post-harvest handling, market and export are all interlinked. Improved access to finance and credit drives all the above activities and cuts across all the activities in agricultural value chains. It is for this reason that the Ministry of Agriculture and Natural resources has endorsed the initiative and publication of the Agriculture Finance book.

The book with financial availability is planned to be published every year to ensure robust market engagement, continuous knowledge sharing and learning. This is intended to increase knowledge and good practices implemented in Rwanda in the area of agriculture financing.

The book provides a repertory of the past and expected trends in agriculture financing in Rwanda, and hence shows the actual priorities of the sector. The book also provides experiences and practical examples put in



place by different types of actors in the sector. These experiences are actions taken by farmers, cooperatives, banks, private investors, public sector development partners. They showcase the environment of agriculture financing in Rwanda.

The Agriculture Finance book hence aims at sharing knowledge of existing trends and practices in Agriculture finance through a description of Agriculture financing trends and activities. The book therefore aims at informing all readers with interest in Agriculture Financing including decision makers, farmers, investors, consumers and development partners.

From the first section we saw that post-harvest financing remains a key challenge in Rwanda. Financing post-harvest stages is as important as financing other production stages as most of the time farmers will pay back their loans with the money earned from their

produce. This section presents the solution provided by the East African Exchange to address this challenge.²

5.1. About EAX

The East Africa Exchange (EAX) is a regional commodity marketplace created in 2013 to service about 173 million consumers in Rwanda and in the East Africa Community (EAC). The idea of having a commodities exchange and creating EAX was birthed in 2013 during the World Economic Forum in Davos, Switzerland. Its purpose would be to catalyze regional integration, capital market development and agricultural transformation in Africa. Eventually, EAX was officially launched by EAC Heads of State in July 2014, and is headquartered in Kigali. EAX is a Public-Private Partnership (PPP) between the Government of Rwanda (GoR) and private investors

¹¹ This section was written in collaboration with EAX



from Nigeria³ and the United States⁴.

Through its operations, EAX aims to:

- Increase liquidity in commodity markets and enhance price discovery;
- Improve existing value chains by linking production to high value markets;
- Increase the farmers' bargaining power and share of created value;
- Ensure integrity and transparency of trade and reduce default risk.

The EAX's vision is to create lasting institutions that will catalyze Africa's agricultural potential, support African farmers, achieve food security, and improve Africa's overall global trade competitiveness. EAX has the capacity to trade in auctions, spot contracts, forwards and futures. Its currently traded commodities are maize, beans, soya, sorghum, wheat and paddy rice. Feasibility and market studies are underway for minerals, tea and coffee auctions.

5.2. Problem statement and solution

At its inception, EAX was thought of as a typical commodity exchange where buyers and sellers interact to buy and sell through a technological platform. Unlike trading stocks, commodities are about preserving and guaranteeing the quality and quantity of what the buyer will receive at the end of a transaction. Hence, it was sensible for EAX to focus more on trading high quality commodities. To do so, EAX had to adopt a backward

¹² Tony Elumelu through Heirs Holdings

¹³ Nicolas Berggruen through Berggruen Holdings and Jendayi Frazer through 50 Ventures

integrated holistic approach with farmers, who constitute the supply side of the market, to address four major problems: post-harvest loss, limited access to financing, limited access to markets and limited access to information.

5.3. Post-harvest losses

Post-harvest loss is defined as a degradation of both quantity and quality of food from the harvesting period in the field to the consumption (ACF, 2014). In Africa, estimates show that 40% of the harvested production is lost during the processing of the harvest, storage and transport from the field to the homes of the farmers and the market (GWPG, 2016; APHILIS, 2018). This results in the loss of calorific and nutritive value, loss of acceptability by consumers, damage of edibility of agriculture harvest and quantity reduction (Kader, 2005; WFP, 2017).

In Rwanda, it is estimated that over 25% of all grains produced are lost during post-harvest processes, and between 18% and 25.7% of maize harvest is lost each year from 2006. The identified causes of this problem include farmer's knowledge gap, transition from a humanitarian to a commercial approach, lack of adequate extension services in certain areas, lack of ample storage and packing technologies, lack of on-farm drying and storage facilities and poor market access and linkages (GWPG, 2016; USAID, 2012; APHILIS, 2018; GWPG; 2016).

EAX's solution



Source: EAX (2018)



EAX has developed an integrated commodity warehouse infrastructure composed of 11 certified⁵ warehouses and silos with a total capacity of about 20,000 metric tons (MTs) spread around the country. Through these, EAX is able to guarantee the quality, quantity, ownership, security and insurance of the stored grains through world-class Collateral Management Services (CMS)⁶. By grading products and assaying quality standards, higher-quality products command better prices on the market, creating an incentive for better post-harvest crop management.

In order to ensure that the quality of the grains is sustained throughout the value chain, from planting to harvest, EAX has put together a team of agronomists

and agriculture technicians that engage with farmers on a daily basis. The team trains smallholder farmers grouped in cooperatives on proper grain handling and on best practices in agriculture, business planning, transport and logistics among others.

Key highlights

Total volumes gone through EAX warehouses to date	31,500 MT
Electronic warehouse receipts issued to date	602
Value of the receipts issued to date	4.9 million USD

As of end September 2018

¹⁴ Certification means these facilities meet international standards in grain handling and storage

¹⁵ These include grading, weighing, cleaning, drying, stacking and fumigation of stored grains



5.4. Limited access to financing

The second major challenge that farmers in Rwanda have been facing is limited access to finance, caused by the following factors:


First, farmers have understandably got very high – sometimes unrealistic– expectations in terms of cash at harvest: indeed, there is typically about 4 to 5 months between planting and harvesting, during which farmers invest a lot of resources, energy and time. However, prices usually go down at harvest because of excess supply. Additionally, a readily available market offering rewarding prices for their crops is not always guaranteed, as middlemen habitually distort the market to rip farmers off.

Second, on the offtake side, agriculture commodity buyers (traders, off takers, agro-processors, etc.) often do not have all the required financial resources to purchase the needed raw materials to cover the whole season. Thus they tend to lower prices to maximize their profits, at the expense of farmers.

Lastly, commercial banks perceive the agriculture sector as particularly risky, and smallholder farmers more so. It is estimated that less than 10% of all loans go to the agriculture sector, yet it constitutes more than 3/4 of the country's workforce and about 1/3 of the country's GDP. The lending requirements such as audited financial statements, sound governance structures, provision of collateral, securities and guarantees can be quite difficult for farmers to fulfill and/or access (CGAP, 2017).



EAX's solution

EAX EAST AFRICA EXCHANGE		COPY OF ELECTRONIC WAREHOUSE RECEIPT 40000206	
Issued by Collateral Manager: Citi In respect of Storage Facility: Nyanza In respect of EAX Member: KGAINYA COOPERATIVE Received from: East Africa Exchange		Quantity: 2 Metric Tons Maturity Date: 23 March 2014 Date Issued: 23 December 2014, 10:36 AM Issued at: Nyanza	
PRODUCT DESCRIPTION Product: WM Grade: EAX1 Origin: Rwanda		 Terms and Conditions	

Source: EAX (2018)

Electronic warehouse receipt (eWR) as a financial instrument: in partnership with 7 commercial banks⁷ in Rwanda, a segment of the market that had been previously considered as very risky to lend to can now access short term loan using their electronic warehouse receipts as sole collateral.

The guarantees that the warehouse receipts carry are the backbone of the trust which the banks have in the instrument. At disbursement, the value of a financed receipt is typically discounted by 30% as a cushion for recovery in case the market price depresses.

Revolving fund: in an attempt to resolve the existing gap between the demand and supply, EAX has created a revolving fund in partnership with two financial banks (BRD and KCB). On the one hand, this has enabled EAX to provide a readily available market to farmers at harvest and, on the other hand, it has helped EAX to provide an assured supply of raw quality materials to off-takers to cover their needs for later in the season. This explains the 31% increase in volumes and revenues between 2016 and 2017.

¹⁵ These banks are: Rwanda Development Bank (BRD), Guarantee Trust Bank (GT Bank), Equity Bank, Banque Populaire du Rwanda (BPR), Urwego Opportunity Bank, Ecobank and KCB Bank

Key highlights

Number of financial institutions that have participated in the warehouse receipt financing program to date	7
Value of loans disbursed under warehouse receipt financing to date	3,660,000 USD
Number of loan defaults to date	0
Average loan period	5 months

As of end September 2018

5.5. Limited access to markets

The third major challenge that farmers in Rwanda have been facing is limited access to commodity markets, caused by the following factors: First, access to markets

which requires a certain level of organizational capacity, the ability to negotiate with market players, the ability to follow price and market trends, and the capacity to structurally organize the required logistics, all in the best interest of the members. Second, middlemen and buyers tend to distort the market price at the expense of farmers, as has been indicated earlier.

EAX's solution

Electronic warehouse receipt as a tradable instrument: one of EAX's mandates is to drive the structured trading of commodities in Rwanda and in the region. Thus, EAX has made trading of commodities transparent, equitable, easy and convenient, thanks to the electronic warehouse receipts. The seller does not need to carry the sample to potential buyers looking for a market since commodities are graded based on standards. The traded receipts have got guarantees on quality and



quantity, which means that the buyers receive exactly what they bought. Finally, the settlement of trade does not exceed 2 days (T+2).

The NASDAQ Trading Platform: this world-class state of the art technology is capable of handling auctions, spot trading, forwards and futures. It is a robust system that has proved to be reliable and used on world-renown exchanges worldwide. This technology has empowered owners of the receipt to expand their market reach in an unprecedented way, as the platform can be reached from anywhere remotely.

Key highlights

Total volumes traded through EAX warehouses to date	25,500 MT
Number of trades that have taken place to date	256
Number of auctions that have taken place to date	52
Number of settlement defaults to date	0

As of end September 2018

5.6. Limited access to information

Information asymmetry is a major ingredient to the distortion of unstructured commodity markets and, most of the time, at the expense of rural farmers. One of the fundamental principles of an exchange is that

information should be provided equally and equitably to all players in the marketplace so that they can make informed decision.

Price discovery: In playing the role of one central pricing reference point, EAX strives to transform agriculture and commodity trading by increasing the bargaining power of all players (from the demand, supply and financing sides) in general and that of small holder farmers in particular, through providing accurate and reliable information. This information is sent out via SMS, email and other online platforms.

5.7. Challenges

Although EAX has had some significant success, below are some challenges that still need to be addressed:

- **Knowledge gap by farmers:** Farmers still have a mindset of waiting for support for their daily living. Thus, a process of mind shifting for farmers is underway, from humanitarian, development and aid programs to running a business commercially.
- **Distress sales:** subsistence farmers sell only their surplus to meet their household immediate financial needs. The informal unstructured trading largely dominated by middlemen offers relatively little yet quick money and thus becomes attractive to farmers. However, this quick money does not necessarily cover the cost of production or give any profit to the farmers. On the other hand, EAX operates within a structured framework that farmers might not have the necessary patience to go through, even though it may offer delayed financial benefits.



- **Fragmented supply from farmers:** farmer cooperatives are mostly loose structures. Therefore, it is difficult to collect significant volumes from cooperatives of which member farmers cultivate on small bits of land, and where the harvest is collected in small and scattered volumes. To address this problem, EAX has had to invest in transportation and logistics of commodities to speed up the harvest collection process, and thus minimize post-harvest losses.
- **Low risk appetite by banks:** banks largely remain very cautious with regards to lending to the agricultural sector, and more so when dealing with rural farmers.
- **The East Africa Community regional integration:** Rwanda is now competing with bigger economies such as Uganda, Kenya and Tanzania. For instance, Uganda produces 4 million tons of maize yearly,

while Rwanda produces only 300,000 MT. It is for this reason that through EAX, Rwanda has decided to compete on quality.

- **Seasonality of the business and cash flow constraints:** EAX goes through tides of activities and cash flows because of the seasonal nature of the business: most warehouse activities and expenses take place within the first half of the year, whilst most of the revenues are generated within the second half of the year.

5.8. Future outlook

EAX has got strategic plans aimed at increasing penetration, nationally and regionally by acquiring more warehouses especially in strategic areas such as Kigali, as well as increasing its grain handling capacity through the acquisition of more equipment such as dryers and cleaners.



In addition to increasing ongoing operations, EAX plans to increase its products and service diversification: in addition to maize, beans, soya, wheat and sorghum, EAX is working on automating tea auction in partnership with NAEB. Market studies are also underway for pyrethrum and minerals. Developing the secondary market and futures is also another strategic objective for the Exchange.

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