

Agricultural value chain finance innovations and lessons

Case studies in Africa

Food and Agriculture Organization of the United Nations (FAO)
and
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Contents

Foreword	ix
Preface	xi
Acknowledgements	xii
Abbreviations and acronyms	xiv
Executive summary	xvi
I. Introduction	1
A. Research purpose and methodology	2
a. Purpose	2
b. Case study selection and methodology	3
c. Key design issues in agricultural value chain financing	3
B. Organization of case information	4
II. Synthesis of case study innovations and experiences	7
A. Business models and facilitation	8
a. Afriland First Bank - Plantations model – Cameroon	8
b. Farm Concern Commercial Villages – Kenya	9
c. MADE Agribusiness - Outgrower VC model – Ghana	9
d. Facilitated farmers’ union value chain partnership	10
e. KCB MobiGrow – Kenya	10
f. NAERLS research approach – Nigeria	11
g. SNV value chain approach – Rwanda	11
h. Buy-in and change is a slow process – Rwanda	11
B. Risk mitigation and reduction	12
a. ACRE Africa – Kenya and Rwanda	12
b. Nyala Insurance – Ethiopia	12
c. ACEP credit guarantees – Senegal	12
d. Incentive-based risk sharing systems for agricultural lending in Africa	13
e. EAX Commodity Exchange – Rwanda	14
f. ECX Commodity Exchange – Ethiopia	14
C. Application of technologies	14
a. Tulaa – Kenya and Ghana	15
b. M-Birr - Ethiopia	15
D. Women and youth	15
a. Women’s informal huckleberry value chain financing – Cameroon	16
b. Youth in agribusiness forum – Rwanda	16
E. Financing needs and investment funds	16
a. SCL agribusiness financing – Nigeria	17
b. Vintage Farms – Ghana	17
c. Metemamen MFI smallholder financing – Ethiopia	17
d. Agricultural value chain financing with impact investment funds – Africa	17

III.	Analysis, learning and recommendations	19
	A. Comparative assessment	20
	B. Lessons learned	24
	a. Considerations for design and adaptation	25
	b. Recommendations and next steps.....	25
IV.	References.....	27
V.	Highlight case studies	31
	Annex 1: Partnering for success in smallholder oil palm and rubber plantation financing: The case of Afriland First Bank in Cameroon	32
	References	48
	Annex 2: Catalyzing financial inclusion through smallholder farmers' collective marketing based on the Commercial Village Model	50
	References	56
	Annex 3: Tulaa integrated ICT solutions for value chains and financing.....	58
	References	65
	Annex 4: Informal value chain financing of huckleberries: the case of rural women in Cameroon.....	67
	References	76
VI.	Short case studies.....	79
	Annex 5: MADE agribusiness development value chain model.....	80
	References	83
	Annex 6: Facilitated Farmers' Union value chain partnership.....	84
	References	87
	Annex 7: MobiGrow smallholder financial inclusion through value chain financing	88
	References	91
	Annex 8: Facilitating producer organizations to finance improvements in rice and maize	92
	References	98
	Annex 9: SNV value chain approach to development in Rwanda.....	100
	References	103
	Annex 10: ACRE Africa – promoting insurance risk coverage for value chain partners and financiers	104
	References	110
	Annex 11: Nyala small farmer insurance in Ethiopia.....	112
	Annex 12: Portfolio guarantee as an instrument for agricultural value chain financing in Senegal.....	116
	References	120
	Annex 13: Incentive-based risk sharing facilities for agricultural lending in Africa	122
	References	129
	Annex 14: Facilitating agricultural value chain finance and price discovery through the Ethiopia Commodity Exchange (ECX) and warehouse systems	131
	References	133

Annex 15: SCL agribusiness financing dilemma	136
References	139
Annex 16: Vintage Farms pineapple.....	141
References	143
Annex 17: Agricultural value chain financing with investment funds	144
References	153
VII. Case examples	155
Annex 18: Buy-In and change is a slow process	156
Annex 19: Connecting markets, growing trade and facilitating financing through the East Africa Exchange (EAX)	157
Annex 20: M-Birr mobile platform for financial institutions.....	159
Annex 21: Value chain financing for youth in Rwanda.....	160
Annex 22: From microfinance to agricultural finance for smallholders	161
VIII. Comparative table of case study innovations and learning	162
Tables	165
Boxes	165
Figures.....	165

Tables

Table 1: Case study descriptions	xv
Table 2: Typical steps in agricultural value chain financing design.....	4
Table 1.1: Financial model descriptions	40
Table 1.2: Afriland First Bank smallholder plantation financing summary table.....	49
Table 2.1: Commercial Villages model summary table.....	57
Table 3.1 Tulaa integrated ICT solutions for value chains and financing summary table.....	66
Table 4.1: Huckleberry value addition per VC segment	72
Table 4.2: Huckleberry informal value chain summary table	77
Table 5.1: MADE summary table	83
Table 6.1: Facilitated Farmers' Union value chain partnership summary table.....	87
Table 7.1: MobiGrow smallholder financial inclusion through value chain financing summary table.....	91
Table 8.1: NAERLS case summary table	99
Table 9.1: SNV program value chain approach to development in Rwanda summary table	103
Table 10.1: ACRE Africa partners in Kenya, Rwanda and United Republic of Tanzania	106
Table 10.2: ACRE case study summary table.....	111
Table 11.1: Nyala case study summary table	115
Table 12.1: ACEP portfolio guarantee summary table	121
Table 13.1: Summary comparison of incentive-based risk-sharing systems for agricultural lending in Africa	130
Table 14.1: Facilitating agricultural value chain finance and price discovery through the Ethiopia Commodity Exchange (ECX) and warehouse systems summary table	135
Table 15.1 SCL agribusiness financing dilemma case study summary table	140
Table 16.1: Vintage Farms pineapple case study summary table.....	143
Table 17.1: Investment funds case study summary table	154

Boxes

Box 1: Excel BitCom Limited description using the MADE agribusiness development value chain model.....	81
Box 2.1: Product – Replanting Guarantee Product (RPG)	107
Box 2.2: Key lessons and observations made by ACRE Africa	110
Box 3.1: DCA fee on portfolio	117
Box 3.2: White rice value chain	118
Box 4.1: Fairtrade access fund	145
Box 4.2: Partner investee assessment.....	146
Box 4.3: Pearl capital investment criteria	146
Box 4.4: Small enterprise assistance fund.....	147
Box 4.5: Triodos agricultural value chain investment approach.....	149
Box 4.6: Root capital finance-plus model	150
Box 4.7: African Agriculture Fund (AAF)	150

Figures

Figure 1.1: Value chain map of the SOCAPALM oil palm plantation.....	37
Figure 1.2: Financial model of scheme showing outflows and inflows of financial transactions.....	39
Figure 1.3: Value chain map of HEVECAM smallholder rubber plantations	44
Figure 1.4: HEVECAM smallholder rubber plantation finance model	45
Figure 2.1: TAV commercialisation processes (from weed to cash crop)	50
Figure 2.2: Savings trends per farmer (USD) and place of saving for four years (2012-2015)	52
Figure 2.3: Catalysing financial inclusion through smallholder farmers' collective marketing.....	53
Figure 3.1: Integrated mobile platform.....	58
Figure 3.2: Farmer journey.....	60
Figure 3.3: How Tulaa works.....	61
Figure 3.4: Credit assessment	63
Figure 4.1: Njamajama value chain map.....	70
Figure 5.1 Yield potential.....	82
Figure 7.1: Value chain analysis	89
Figure 7.2: Closed circuit value chain financing of maize	89
Figure 7.3: Value delivery through MobiGrow eco-system.....	90
Figure 8.1: Facilitator-led financing of rice and maize, stage 1	94
Figure 8.2: Facilitator-led financing of rice and maize, stage 2.....	96
Figure 9.1: Unguka Bank financing approach	101
Figure 9.2: Unguka Bank tripartite agreement	102
Figure 10.1: ACRE Africa agricultural insurance for risk mitigation.....	105
Figure 10.2: Credit-linked agricultural insurance.....	108
Figure 10.3: Value proposition of agricultural insurance with loans	109
Figure 12.1: Key actors in AVCF process	119
Figure 13.1: NIRSAL risk sharing facility in Nigeria	123
Figure 13.2: NIRSAL approach to implementation.....	123
Figure 13.3: GIRSAL risk sharing pillars.....	125
Figure 13.4: African Finance Corporation steps in risk profiling.....	126
Figure 13.5: PROFIT risk sharing facility in Kenya	127
Figure 13.6: Five pillars of RARSFF	127
Figure 14.1: The ECX WHR financing flow chart	134
Figure 15.1: SCL soybean agribusiness value chain	137
Figure 17.1: Assessing the VC for strategic selection for delivery of financing and support	147

Foreword

Today, global food production is facing significant challenges, threatening the achievement of the Sustainable Development Goals (SDGs). Despite technological advancements, food production is struggling to keep up with increasing demand and improved nutrition requirements owing to a growing world population, rising urbanisation, changing diets and greater purchasing power in emerging economies, and a heightened attention to health and nutritional outcomes, among other factors. Meanwhile, growing pressure on natural resources and the rapidly changing climate represent formidable constraints to the expansion of the food supply in the future. In addition to the need to produce enough and more nutritious food to feed the world, and transitioning to environmentally sustainable business models, today's food systems should also become more inclusive, contributing to the livelihood security and stability of all actors.

Moving forward, addressing the above challenges will require significant investments in the agrifood sector. Access to finance will be critical in enabling these investments.

Despite its significant role, the agrifood sector remains largely underserved by the formal financial sector and reliant on informal sources of finance to support economic activity. This is true for a range of critical financial products and services, including loans, savings and insurance, which can contribute to building resilience, smoothing consumption and cashflows, managing risks and facilitating investments. The lending gap in agri-SMEs is estimated to be USD 100 billion per year in Sub-Saharan Africa alone. This gap is particularly stark for long-term finance with about 98% of demand remaining unmet.

Value chain finance arrangements and related innovations hold great potential for financial inclusion in agriculture and food systems, particularly in the context of tight value chains and for addressing the short-term financial needs of the various actors. These can also contribute to linking financially excluded actors with financial institutions in the formal sector.

Value chain arrangements can facilitate the development of specific financial products which are tailored to the needs of the chain and its actors. Importantly, value chain actors have considerable information advantages over formal financial institutions, including an understanding of the production cycles, market linkages, financial needs, asset base, payment capacity and overall creditworthiness of individual participants. These information advantages lower servicing costs and risks associated with financing, and strengthen impacts of finance. Financial institutions can build on the strengths of relationships within value chains to profitably deliver financial services to farmers and other actors by leveraging the knowledge and relationships of more informed agents.

Against this backdrop, the present publication has been developed by the FAO and the African Rural and Agricultural Credit Association (AFRACA) under the umbrella of the "Strengthening Capacity Building for Rural Financial Inclusion" (CABFIN) project. CABFIN is a partnership of experts from development agencies that are active in the area of rural and agricultural finance, with the aim of harnessing knowledge and networks for capacity building in inclusive rural finance. At present, the participating agencies are CGAP, FAO, GIZ, IFAD, UNCDF, WB and WFP.

This publication makes an important contribution to the expanding literature on agricultural value chain financing approaches by providing an overview of innovations and best practices from across Sub-Saharan Africa through 22 case studies. The chosen cases are of varying length and complexity.

The emphasis is on learning from the practices which are presented. The synthesis document included within the publication is designed to introduce the cases, provide comparisons and discuss lessons learned. The cases are available individually or with the combined synthesis document.

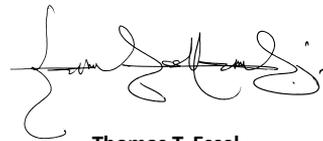
It is hoped that this publication will become a useful reference material for trainers and practitioners interested in the diverse experiences and latest innovations in business models, approaches, instruments and arrangements that contribute to improving access to finance for a host of agrifood value chain actors including small farmers, women and youths in Africa.



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Preface

The 22 case studies and examples presented in the document represent a diversity of approaches, tools, contexts and target groups to highlight agricultural value chain finance (AVCF) in Sub-Saharan Africa. The objective was to develop teaching cases for use in training workshops and university studies, as well as for readers interested in learning more about the diverse experiences of applying AVCF in Africa.

The authors identified and selected case studies with input from key contacts and a lead informant workshop organized by AFRACA. Less than half of the cases identified and researched were selected for inclusion in the document.

The chosen cases are of varying length and complexity. The majority are summarised briefly as this is most effective in time-constrained workshop settings. Four long, highlight cases deal with the examples that are most complex and appropriate for university training. Training facilitators can draw information from these cases, even if sufficient time is not available during breakout sessions. In some instances during the period of research there was an important learning point to highlight but neither the need nor sufficient information for a full case study; this led to the development of five short case examples. The heterogeneity of case length and distinct models and tools is, therefore intentional. All cases were tested in one or more AVCF training venues in Africa in order to gauge their relevance and application, as well as to determine where information was unclear to allow for revisions.

Each case study and the case examples are followed by three to five questions. These have been designed to guide the facilitator in their work and to stimulate the reader/participant to consider the key lessons and implications of the case. It is important that those discussing a case are able to propose lessons learned, and for this reason the case study descriptions deliberately do not include analysis, but rather aim to provoke contemplation and discussion.

Sometimes the case studies are referred to as best practice cases, which is subjective, and while most do focus on best or better practices, the emphasis is on learning from the practices rather than rating them. In addition, two cases focus on the demand constraints featuring agribusiness small and medium enterprises (SMEs) that cannot secure sufficient financing for their VC operations and VC partners. These cases tend to generate lively breakout group discussions as it is a topic to which all participants can relate, and as such they provoke numerous recommendations.

The cases are available individually and/or with the combined synthesis document. The synthesis is designed to introduce the cases, group them and provide comparisons and lessons learned. Chapter III of the synthesis provides an overview of each case and highlights to help trainers quickly grasp the essence of each case to be used in training, and for readers to quickly learn the topics and cases to allow for further study in the annexes. The cases contain a one-page summary table and these tables highlight the key aspects of the case and help to build a summary comparison table, which follows the synthesis document. The short case examples do not have summary tables but their information is included in the Summary Comparison.

The document is designed to function as a “living document” with cases that are updated regularly, replaced or revised by practitioners working in AVCF. The document and case studies compliment the ten-module (plus the 11th Islamic VCF module) AVCF training course published by FAO, which is available at <http://www.ruralfinanceandinvestment.org/training/guides-for-trainers/agricultural-value-chain-finance>.

Acknowledgements

Agricultural value chain finance is a broad term used to describe varying aspects of the approach and its supporting tools. Therefore, a nuanced understanding of value chain finance is best understood from the study of innovations and best practices from implementing experts and their experiences.

This volume brings together the experience and contributions of a multitude of practitioners and their institutions and businesses. The authors were:

Calvin Miller, a well-known expert and author in the field of agricultural and rural finance and investment with extensive practical experience and research on agricultural value chain finance in all parts of the world, and

John Amimo, Head of Programmes at AFRACA, is a rural finance and agricultural value chain practitioner and trainer with extensive experience in African agricultural finance practices.

It is not always feasible to thank all those involved, but the authors especially wish to acknowledge the main contributors indicated below; the cases and document would not have been possible without their support.

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It is also important to thank the many training course participants who have used the case studies in training workshops and have helped to improve the clarity of the cases. I must also thank those who will update them over time and add new cases, thereby contributing to the ongoing learning and sharing process on this important topic.

Finally, it is important to thank the many smallholder farmers, agribusiness leaders, service providers and financial institutions who work in the field of agricultural value chain development and financing, and create new insight through their daily struggles and successes.



Calvin Miller

Abbreviations and acronyms

ABU	Ahmadu Bello University
ACEP	Alliance de Crédit et d'Épargne pour la Production (Credit and Savings Alliance for Production)
ACRE Africa	Agriculture and Climate Risk Enterprise Ltd for Africa
AAF	African Agricultural Fund
AFC	Agricultural Finance Corporation
ADAF	Appropriate Development for Africa Foundation
Afma-x	African Farms and integrated Market Exchange platform
AFRACA	African Rural and Agricultural Credit Association
AFR	Access for Finance Rwanda
AGRA	Alliance for a Green Revolution in Africa
AIF	Agricultural investment fund
AVC	Agricultural value chain
AVCF	Agricultural value chain finance
AYII	Area yield index insurance
BRC	Bonzali Rural Bank
CAM	Credit Agricole du Maroc
CFA	Central African Franc
CGAP	Consultative Group to Assist the Poor
CGER	Centre for Management and Rural Economy
CNCAS	Caisse Nationale de Crédit Agricole du Sénégal
CSAF	Council on Smallholder Agricultural Finance
DCA	Development Credit Association, USAID
DEG	Specialised subsidiary of KfW development bank
DFI	Development finance institution
DFID	United Kingdom's Department for International Development
EAX	East African Commodity Exchange
ECA	Economic Commission for Africa (UN)
ECX	Ethiopian Commodity Exchange
EPDRA	Evangelical Presbyterian Development and Relief Agency
ESOKO	Esoko Networks Holding Company
FAO	Food and Agriculture Organization of the United Nations
FC	Farmer cooperative
FBO	Farmer-based organizations
FCI	Farm Concern International
FU	Farmers Union
FSP	Financial service partners
GAP	Good agriculture practices
GIE	Economic interest group
GIIF	Global Index Insurance Facility
GIRSAL	Ghana Incentive-based Risk Sharing System for Agricultural Lending
GIS	Geographic information system

GPS	Global positioning system
HEVECAM	Hevea Cameroun Rubber Company
IFAD	International Fund for Agricultural Development
ICT	Information and Communication Technology
INSYT	A Ghanaian data collection and information company
KCB	Kenya Commercial Bank
MADE	Market Development Programme for Northern Ghana
MC ²	Mutual savings and credit microbank
MFI	Microfinance institution
MITFUND	Micro Trust Fund
MoF	Ministry of Finance
MPCI	Multi-Peril Crop Insurance
MSE	Micro and small enterprise
M4p	Making Markets Work for the Poor
NAERLS	National Agricultural Extension, Research, and Liaison Services Institute
NGN	Nigerian Naira
NGO	Non-governmental organization
NIRSAL	Nigeria Incentive-based Risk Sharing System for Agricultural Lending
OVCF	Outgrowers Value Chain Fund
PAR	Portfolio at risk
PO	Producer organization
PPP	Public-private partnership
PROFIT	Kenyan Programme for Rural Outreach of Financial Innovations and Technologies
RYAF	Rwanda Youth Agribusiness Forum
RB	Rural bank
SACCO	Saving and credit cooperatives
SCL	A specialised agribusiness company in Nigeria
SEAF	Small Enterprise Assistance Fund
SME	Small and medium enterprise
SMS	Short message service
SNV	Not for profit Dutch development agency
SOCAPALM	La Société Camerounaise des Palmeraies
TAF	Technical assistance fund (or facility)
TAV	Traditional African vegetables
TEF	Tamwil El Fellah
VCF	Value chain finance
USAID	United States Agency for International Development
UTZ	Sustainable farming certified label
WII	Weather index insurance
WFP	World Food Program
WRS	Warehouse receipt system

Executive summary

Agricultural value chain (AVC) financing innovations and lessons: Case studies in Africa presents a series of different case studies and examples of agricultural VC finance (AVCF) in sub-Saharan Africa. Agricultural VCs and AVCF have become commonly used terms but often without a basic understanding of their roles. An effective learning method is to study experience-based examples, review the results and consider how to apply the concepts in a local context. The African cases have therefore been designed as training tools to inform and stimulate innovation and application for readers and participants.

The case studies are descriptive and highlight real-life scenarios, rather than present an in-depth analysis. This is because they are intended to facilitate training on the subject as well as to inform readers interested in innovative applications of diverse models and tools of AVCF as well as related issues and challenges. Taken together, the case studies span the whole VC. They highlight, among other aspects, distinct business models, financial instruments, partnership arrangements, technology applications and risk mitigation strategies.

The document is based on first hand research prepared for the African Rural and Agricultural Credit Association (AFRACA) and the Food and Agriculture Organization of the United Nations (FAO) in late 2017 to early 2018, and updated throughout 2018. The document includes 22 case experiences. These include four in-depth highlight case studies on more complex models of AVCF. Thirteen shorter cases studies are presented to depict different innovative and best-practice applications and approaches to addressing key areas affecting agricultural VCs and financing. Five short case examples are also included, each of which illustrates at least one important model and finance issue. Questions follow each of the 22 cases and examples, and these are intended to facilitate workshop or classroom discussion, and/or to stimulate reader reflection. Choosing cases of different types and lengths facilitates their use in diverse training and learning contexts. For example, depending on the topic, a trainer can select from the 13 short cases for breakout group discussions, and case examples can be used to highlight a presentation. The highlight cases, while quite long for a workshop, can be used in academic settings and in workshops where there is sufficient time for pre-discussion preparation.

The case studies are grouped according to their focus. The agricultural VC business model and strategy are fundamentally important to financial sustainability and profitability in all AVCF applications and therefore over one third of the cases focus on this topic. The business model case studies were selected owing to their levels of innovation and lessons learned. All of these business model examples involved partnerships and linkages and many of the interventions required some support to help build capacity or provide financial or risk-sharing incentives to facilitate the inception of the innovation or reach new target groups. Most of these cases have contractual agreements between two or more parties, although some of these are informal working agreements. Cashless financial transactions between some of the VC parties are used to varying degrees in the cases documented. The use of in-kind loans, triangular arrangements of buyers, producers and sellers, mobile money for transfers, point of sale payments and cashless transactions are common. In many cases, mobile-based communication is used to facilitate finance, input purchasing and marketing

Some of the case studies and examples have been chosen to depict various AVCF instruments, including those designed to mitigate risks. These include private- and public-implemented as well as policy-led initiatives. Among the instruments highlighted in the cases are applications of trader finance, input supply finance, contract farming, warehouse receipt financing, insurance, guarantee funds and forward contracts. Two of the case studies portray innovative new technologies that offer high benefits to VC partners and financing organizations.

One case focuses on a women-producer driven agricultural VC and cashless financing. One example describes agribusiness micro- and small-business finance and development for youth. Two cases highlight the challenges small agribusinesses face in securing financing for their operations and their VC partners. One example shows the challenges facing a microfinance institution (MFI) expanding into agricultural finance as it works to adjust its mode of operation to introduce an AVCF approach for its smallholder clients' needs. Finally, another case looks at the successes and challenges of seven leading agricultural impact investment funds as they strive to provide financing to African agricultural VCs.

The case studies provide lessons on the design, innovation, successes and challenges of a variety of agricultural VC models and financing tools, and in doing so highlight the importance of sound business strategies, mutually beneficial partnerships and the use of innovation and technology.

The following table provides a brief description of the case studies presented in the document.

Table 1: Case study descriptions

#	Case study	Research category	Description
Long cases highlight			
1.	Partnering for success in smallholder farmer (hereinafter referred to as "smallholders") oil palm and rubber plantation investment schemes: the case of Afriland First Bank in Cameroon	Multi-partnership AVCF business model for long- and short-term investment	Long-term investment model of small farmer plantation renovation and land purchase and involving agribusinesses, multiple finance institutions, a capacity development agency and a development facilitator
2.	Farm Concern commercial villages in Kenya	Facilitates market driven business model with AVCF	Sustainable model for building capacity and linkages for small farmers to move into commercial value chains
3.	Tulaa integrated ICT solutions for AVCs and financing in Kenya	Mobile platform for small farmer commerce, finance and extension	A for-profit company providing services of extension messaging, mobile money, mobile commerce and a data platform for small farmers
4.	Women's informal huckleberry value chain financing system in Cameroon	Women-producer driven VC system of internal trust-based financing	A women's trust system of inter-regional value chain operations and financial flows with multiple partners, leading to formal financial opportunities to upgrade investments
Short case studies			
5.	MADE agribusiness and outgrower VC development in Ghana	Facilitated buyer driven model	Capacity building and linking of agribusiness firms and organization of small farmers for commercial farming with financing and markets

#	Case study	Research category	Description
6.	Facilitated Farmers' Union and Rural Bank value chain partnership in Ghana	Producer-driven business model with bank financing	First and second tier farmers cooperatives and union arrangement with rural bank and buyer linkages
7.	MobiGrow smallholder financial inclusion through AVCF in Kenya	Bank-led buyer linkage and mobile model	A partnership with a development partner and commercial bank to reach unconnected small farmers with markets and financing
8.	Facilitating producer organizations for financing improvements in rice and maize in Nigeria	Capacity development and linkage case for small farmers	A unique initiative led by a research center to organize and build the capacity of small farmers to farm commercially, with market linkages and financing and by transitioning to mainstreaming financing and market options
9.	SNV value chain facilitation approach to smallholder development in Rwanda	Sustainable facilitation model for development actors	SNV business approach for capacity development for sustainable market and financing linkages provides an example for other development programs to follow.
10.	ACRE – promoting insurance risk coverage for AVC partners and financial institutions in Kenya and Rwanda	Small farmer risk management facilitation for AVCF	An insurance facilitator working with financial organizations and insurers for innovative insurance options for small farmers
11.	Nyala Company agricultural insurance for smallholders in Ethiopia	Risk mitigation for smallholders using micro-insurance	A commercial-level smallholder indexed insurance program working with microfinance institutions and banks
12.	Use of a portfolio guarantee as an instrument to increase AVCF in Senegal	Risk reduction using guarantee instruments	ACEP mutual savings and loan institution uses loan guarantees to reduce risk and promote increased AVCF to smallholders
13.	Incentive-based risk sharing systems for agricultural lending in Africa	Case on risk reduction through comprehensive policy design mechanisms for risk sharing and incentives	Highlights of five country policy approaches of the multiple-pronged VC policy response to address agricultural risk to promote increased lending, in Ghana, Kenya, Morocco, Nigeria and Rwanda
14.	Ethiopian Commodity Exchange (ECX)	Case on risk reduction through commodity futures trading, price information and warehousing	ECX provides price hedging of international commodities and warehouse management and price discovery, facilitating financing and showing success in some commodities and lack of interest in others

#	Case study	Research category	Description
15.	SCL soybean agribusiness finance in Nigeria	Learning case for agri-SME financing and capacity issues	A case that illustrates the financing and capacity issues of new agribusinesses and their effects on business operations and producers
16.	Vintage Farm pineapple agribusiness in Ghana	Learning case on small agribusiness financing and the related capacity issues	The case illustrates issues of financing and capacity of agri-entrepreneurs and their effects on the business and smallholder producers
17.	Agricultural value chain financing with investment funds	Learning examples of impact-focused AVCF investment funds	The case illustrates the strategies of seven distinct agricultural impact investment funds and the results of investment funding for agricultural VCs
Case examples			
18.	Access for Finance Rwanda (AFR) change process	Mini case on the slow process of “buy-in” and change in development	AFR provides competitive grants and technical assistance to spur innovation and growth. Yet, despite success, finds that change is slow and complicated
19.	East African Commodity Exchange (EAX) in Rwanda	Mini case on risk reduction through hedging and price discovery	EAX provides price hedging for risk reduction and warehouse receipt financing, which helps reduce volatility and improve AVCF financing
20.	M-Birr ITC platform for mobile banking in Ethiopia	Mini case on mobile banking for multiple MFIs	A multi-user mobile platform that works with multiple, large-scale banking and credit union systems
21.	Rwanda Youth in Agribusiness Forum (RYAF)	Mini case on developing youth entrepreneurship	A youth-led government-innovation program to promote and incubate rural youth agribusinesses
22.	Microfinance adaptation into agricultural finance in Ethiopia	Learning mini-case of changes needed for AVCF	Case illustrates that simply moving from traditional microfinance to agricultural VC finance is more than simply financing agriculture; it requires additional adaptation to make use of the VC relationships and transactions

As noted, a range of cases and examples are presented in order to demonstrate different aspects of applying AVCF, and as such it is not possible to have in-depth lessons that align with the comprehensive nature of AVCs and AVCF. Nevertheless, a number of overarching lessons are highlighted below. Contact information is given after each case study to allow for direct contact with project or business leaders in each case for further information.

- Agricultural VC financing comprises both internal flows of financing between participants directly within the VC as well as those who use a VC approach to determine how to best lend or invest in the VC to reduce risk and cost. Under both internal and external VC financing, it is important to understand the AVC, the transactions and its participants' strengths weaknesses and opportunities, make use of the relationships and make financing decisions accordingly.
 - **For producers**, AVCF offers a mechanism to obtain finance that may otherwise not be available owing to a lack of collateral or high transaction costs.
 - **For agribusiness suppliers, buyers and processors**, it offers a way to build stronger buying and selling relationships and market growth.
 - **For bankers and investors**, AVCF offers a way to reduce the costs and risks of financing by having more informed and accurate tailored financing. It also provides opportunities for third-party financial arrangements to reduce transaction costs and improve repayment.
- As exemplified in the numerous case studies, AVCF is not a recipe nor is it a financial tool; rather **it is an informed assessment based on information from sources across the AVC. One or more of the most appropriate financial and non-financial tools and technologies are then applied.** The informed assessment is needed to determine the applications and the strategy to be employed.
- Financial institutions are lacking in many rural areas despite governments' efforts to promote rural finance, often even when there is a heavy subsidy component. The costs and risks of agricultural lending to rural enterprises are too high to interest these FIs to lend or invest. However, **the opportunity for FIs to collaborate in VC finance initiatives in which they can deal with companies further along the chain**, rather than directly with farmers, offers one of the solutions to address these costs and risks.
- Even so, **AVCF cannot address all financial services needed in rural areas.** Most AVCF is shorter-term and linked with specific VCs. It can, however, open avenues for access to other financial services, such as savings and checking accounts from financial institutions and for additional agribusiness relationships in other VCs.
- **Risk mitigation and cost efficiency are critical elements of AVCF success.** Insurance, guarantee mechanisms, price hedging and storage, and ICT are important tools that are increasingly being used in agricultural VC finance. The cases demonstrate that partner collaboration within the VC can also help address not only production and market risks, but also the technical, organizational and management capacity risks of VC partners. What's more, it can help ensure opportunities for competitive and profitable end markets.
- **The role of the public sector is important.** In the majority of successful cases detailed, the public sector was supportive, especially during the start up phase. Some of this support came from governments but many of the innovations were at least partly funded by donor agencies.
- **Change should be expected and embraced.** A VC approach is fundamental, but the implementation and adaptation of the services needed to most appropriately fit the VC partners is and should be ever changing and evolving. While this is most evident in the IT field, the evolution of VCs and VC financing is continual, to address both changing risks and needs as well as to continue to reach higher service efficiencies. Therefore, the cases studied should continually be updated and new ones added.
- **Facilitation and incentives can lead to innovation.** Many of the case studies benefitted from support and/or were facilitated by a change agent. This was found to be significant but the cases also demonstrated that fundamental change can be a slow process to build the capacity, trust and true "ownership" of the VC relationships and innovations.



An agricultural extension officer in Kenya ©AFRACA

I. Introduction

The rapid adoption of an agricultural value chain approach for agricultural development has provided an opportunity to innovate and adapt business models and products to address the financing needs of the participants involved through value chains.

I. Introduction

“Our position as the Ministry of Agricultural Development and Food Security, Botswana is that the adoption of value chain approach to developing the agriculture sector is no longer an option but an imperative”. Gaborone, Botswana, 21 November 2017 (ECA).¹

The rapid adoption of an agricultural VC approach for agricultural development has provided an opportunity to innovate and adapt business models and products to address the financing needs of the participants involved through VCs. This document details the various types of such innovations found in Africa through 22 case studies and examples on agricultural VC finance prepared for the African Rural and Agricultural Credit Association (AFRACA) and the Food and Agriculture Organization of the United Nations (FAO) in late 2017 and 2018. The research comprised country visits by a lead consultant expert to seven countries and received input and support from ten key informants from various African countries. This included a workshop to discuss the research and select the cases. Additional desk research and networking by AFRACA and the consultant was also used to complement the research and uncover additional information.

The case studies presented in the document include four more comprehensive cases and 13 shorter case studies, which are useful for workshop training. Five mini-case examples are also included to illustrate additional approaches and experiences in order to enrich learning and discussions. These cases, presented in full in the annexes, are each accompanied by discussion questions to facilitate their use as workshop or university cases studies. Each case study in the annexes ends with a case summary table of key information from the case. The final annex contains a comparative summary table of all of the cases to facilitate cross-comparison.

A. Research purpose and methodology

a. Purpose

Learning is best done with real-life examples, which is why the case study research and documentation provide updated lessons on the application of AVCF in Africa. It gives readers the chance to learn from the proven experiences of financial and non-financial institutions in providing or facilitating financial services, especially to lower income farmers and agribusinesses. It provides lessons on the successes, challenges and specific issues that need to be considered when adopting an AVCF approach to design or use an array of financial instruments to meet VC actors’ needs. It is important to consider how these approaches and financial instruments were adapted to the context of the sector and setting. The case studies will help assess the potential of these approaches and instruments to benefit poorer sectors of rural populations and provide examples of outreach, benefits to the intended target groups, and successes and limitations experienced along the way.

¹ Economic Commission for Africa (ECA), <https://www.uneca.org/stories/adopting-agricultural-value-chains-no-longer-option-botswana-official>

b. Case study selection and methodology

The case study methodology used to assess potential cases looked at their VC models and financial instruments and how they work, as well as their potential for replication and learning. This helped to understand the nature of AVCF applications and usage and guide the interview information during the case study site visits and interviews with key stakeholders and informants. Secondly, an overview mapping of the sectors and regions where innovations are being applied provided a basis for cost-effectively selecting strong cases to study covering a variety of applications and contexts in order to provide a broad set of lessons to be drawn.

Two main sources of information were used in the appraisal of the VCF cases:

Background information and data

- A review of innovative VCF approaches (business models and drivers) and innovative VCF instrument applications in the country or region.
- Preliminary assessment of the models, instruments and technologies to be considered for selection based on their importance, innovative nature and the need for a deeper understanding of them.

Field visits and key informant interviews with leaders or designers of the innovative models

- Stakeholder dialogue and analysis with leaders at various levels and other VC participants involved in the VC activities.
- Dialogue with other relevant stakeholders, including in some cases participants in VCF training programs.
- Follow-up correspondence to ensure validity of data.

A conscious effort was made to focus on a variety of distinct types of innovations from different countries and environments and it was also important that innovations had a sufficient track record of experience (two years or more). However, innovative programs are never static and continue to evolve and adapt in order to be continually improved.

c. Key design issues in agricultural value chain financing

Innovations in AVCF are integral to VC development and as such the design research involved developing an understand the context, the VC processes, the business models and the financial, technological and application innovations. Some cases focus on the issues confronting agribusiness SMEs that led to financing shortages despite their agribusiness entrepreneurship capacity. Two case studies focused specifically on innovative and scalable information and communication technologies (ICTs); these mobile innovations and/or information platforms work across VCs and facilitate communication and money flows among VC partners. In addition to efficiency, risk management is a central aspect of VC strengthening and financing. Owing to the many types and aspects of risk in agricultural financing, six cases or examples specifically highlight learning experiences in this area.

Innovations in VC financing involve creative visioning followed by a concerted effort of dialogue, work and piloting. The case study innovations were not conceived by accident, rather their design and development involved considerable research, testing and modifying. The following table shows the typical steps involved in this research process.

Table 2: Typical steps in agricultural value chain financing design

Typical steps in agricultural value chain financing design				
Steps	Phase 1	Phase 2	Phase 3	Phase 4
	Conduct an AVC analysis	Analyze the interests and capacities of VC participants and stakeholders	Design a financing strategy	Implement the AVCF and monitor the strategy and delivery
Step 1	Map the AVCs in the sector/subsector	Diagnose the interests and capacities of the AVC participants	Design alternative mechanisms of financing the AVCs	Develop a VC upgrading capacity development plan
Step 2	Analyze the AVCs and their strategies	Diagnose the interests and capacities of the financial service providers	Identify existing or potential technologies and delivery models	Formalize working agreements
Step 3	Map the flows of internal and external finance to the AVCs	Identify the interests of non-financial service providers	Identify support stakeholders and potential partners	Design action plans (activities, responsibilities, targets, timeline)
Step 4	Identify and prioritize AVCs and their critical gaps in financing flows	Identify constraints to financing the participants	Design a financing strategy and model	Evaluate the implementation and AVCF strategy and model

B. Organization of case information

The document is organised as follows: the introductory chapter describes the research methodology and main issues relating to agricultural VC financing. Particular attention is given to the development approach, business and facilitation models, and different financial instruments that provide or promote such financing. Chapter II provides a brief synthesis of the 22 case studies and examples, drawn from the case studies presented in full in the annexes. These are organised in the following five categories:

1. Innovative VC and VCF business models, including facilitation approaches used to help develop them.
2. Innovations in risk reduction and mitigation for VC partners and financing.
3. Innovative application of new or adaptive technologies which make VCF more efficient and inclusive.
4. Innovations addressing VC development and financing for women and youth.
5. Financing needs facing agribusiness SMEs and producers and applications of investment funds for agricultural VC financing.

The final chapter draws lessons from the cases and synthesis, as well as general considerations applicable to the design of inclusive agricultural VC financing in Africa. It summarizes the main issues related to VC financing, particularly the different models and tools that exist for VC arrangements and financing. It closes with a brief discussion of lessons learned and some of the issues of adaptation and recommendations that arise in the case studies. The focus of the cases is on best practices, however the document also includes examples in which financial foresight or management difficulties led to shortages of finance despite good intentions and models.

The case studies and examples follow the synthesis chapter in the Annex and form the bulk of the document. The four larger highlight case studies are first presented in the annexes, followed by the short cases and finally the case examples. Each case study ends with a summary table of the key approach, interventions and results. Discussion questions are provided to facilitate reflection and discussions. The final annex provides an overall comparative summary table of all the cases.



AFRACA delegates in a farm visit ©AFRACA

II. Synthesis of case study innovations and experiences

II. Synthesis of case study innovations and experiences

The following synthesis is an introduction to the cases studies and examples. These can also be reviewed in annexes 1 to 22 as well as in the comparative analysis of the Summary Table at the end of the document.

A. Business models and facilitation

The AVC business models used for classification and comparison of the cases were: a) Producer-driven models, b) Buyer-driven models, c) Facilitator-driven models, and d) Integrated VC models. The majority of the business model cases followed a buyer-driven model in which the agribusiness firm is the “driver” or lead actor of the VC. However, given the developmental nature of many of the case studies, most of the business models studied involved a facilitator to conceptualize and often initiate the model. After the capacity development, the role of the facilitator(s) ends or diminishes, or at least is expected to end or significantly reduce, and the business model continues, driven by the buyers or producers. Fully integrated AVC models are not presented although some cases include considerable integration

a. Afriland First Bank - Plantations model – Cameroon

Long-term investment financing, including land lease purchasing and plantation renovation with smallholder farmers (hereinafter referred to as “smallholders”), is not common or easy. However, in Cameroon, Afriland First Bank is doing just that through a multi-stakeholder arrangement in both the oil palm and rubber sectors. The stakeholders involved include:

- a.) smallholder farmers
- b.) producers’ cooperatives
- c.) plantation companies
- d.) Afriland First Bank
- e.) local microfinance organizations
- f.) a national business support organization
- g.) an international development finance organization providing risk sharing support and
- h.) a national NGO facilitator.

A critical player in the design and development of the VC financing model used for both oil palm and rubber was the Cameroonian NGO: Appropriate Development for Africa Foundation (ADAF). **Its agro-based cluster model** begins by developing smallholder organizational capacity to be able to form long-term contractual relationships with oil palm and rubber plantations. These arrangements then open the door to access the financing needed for smallholders to purchase land leases and renovate plantations. This financing was arranged with Afriland First Bank, but contingent on using a local MC² (a mutual savings and credit microbank) in each region to administer the financing in these remote plantation areas. However, given the lack of capacity of the MC² microbanks and the smallholders, Micro Trust Fund (MITFUND) was asked to provide management training and monitoring. In addition, in order to help entice Afriland First Bank to provide long-term financing, DEG, a German Development Bank subsidiary, was sought to provide a partial credit guarantee to the bank. ADAF facilitated the process, which included partitioning the land plots, negotiating land and commodity-guaranteed minimum pricing, and mentoring and monitoring the diverse stakeholders.

Agricultural VCF is commonly known as short-term financing. For long-term financing, such as in this case, the process is more complex, especially when financing smallholders. Yet, as for short-term arrangements, long-term financing for oil palm and rubber is still built on the product and cash flow transactions of their agricultural VCs. The model has proven effective with solid loan repayments, increased income for the farmers, and there is interest in further replication and expansion in oil palm and rubber by the parties involved.

b. Farm Concern Commercial Villages – Kenya

Catalysing financial inclusion through smallholder farmers' collective marketing based on the Commercial Villages Model, is a facilitated producer-driven AVC model developed by Farm Concern International (FCI). This Commercial Villages Model is an AVC approach to work simultaneously with multiple AVCs to transform smallholder farming into commercial, high-productivity farming and competitive marketing systems. The objective is "to systematically transform smallholders into profitable entrepreneurs, increase incomes, stimulate capital build up and equip farmers to build entrepreneurial capacity progressively triggering break-off poverty cycles."

Critical elements of the model involve technical and business capacity building, financing, information platforms and marketing platforms, including e-trading and auction trading. Financing focuses first on savings and re-investment capitalisation from sales. These funds are then used to obtain collective purchases of inputs at discounted rates. The interest rates from their savings and credit organizations are lower due to direct payment from their sales. The approach also focuses on higher-value niche markets centred on traditional African vegetables, and works with the end-market buyers as business partners rather than price takers. The results, with over 10 000 vegetable-growing smallholders, show price increases of 100 percent, doubling yields and input cost reductions of 20 percent, all of which have contributed to improving smallholder incomes. As an example, under Farm Concern's Domestic Markets Programme implemented in Kenya, incomes increased from USD 141 in 2011 to USD 2 870 in 2015.

c. MADE Agribusiness - Outgrower VC model – Ghana

One of Ghana's national priorities is to increase agricultural productivity and smallholder incomes through VC development and modernisation of agricultural technologies. A number of international development agency programs support this initiative, and many of the programs follow a buyer-driven approach using contract farming or other outgrower schemes. The United Kingdom's Department for International Development (DFID)-funded Market Development Programme for Northern Ghana (MADE) supports smallholders in the sectors of rice, groundnuts, onions and vegetables with this approach. The programme helps lead agribusiness firms to develop or expand their management and technical capacity while also helping to organise smallholder groups and build their technical and organizational capacity. Extensionists, hired by the agribusiness firms, provided technical training and also serve as company input sellers and buyers. Financing for farmers for input advances, and equipment and storage was also important. Therefore, in order to facilitate the lead firm agribusiness's access to adequate financing, the capacity of the local rural banks was also developed.

Over the four-year project, yields have increased on average from one or two tonnes to nearly four tonnes and are expected to rise further. But, owing to the increased use of purchased inputs and mechanisation costs, the rise in net income has not been as high. Overall, access to market risk has reduced but single-buyer price vulnerability has increased.

d. Facilitated farmers' union value chain partnership

Strong producer organizations, such as those of Taaganoba, are instrumental in helping their members realise their potential. However, when they remain at the village level, they often do not have sufficient economies of scale to be a driver in their VCs, nor do they have the capacity to do so. In the Yendi region in northeastern Ghana, the Evangelical Presbyterian Development and Relief Agency (EPDRA) promotes economic livelihood and community development of smallholders. It does so through extension, farmer organization, and market and financial linkages, and has worked not only to build the capacity of local producer organizations but also to facilitate their aggregation into an apex organization. The second tier apex Taaganoba Farmers Union (FU), made up of 44 farmer-based organizations (FBOs), brings collective strength and is able to manage volume purchases and sales with VC partners on behalf of their member FBOs. They also negotiate loans for the members through the Bonzali Rural Bank (BRC), while the BRC offers cashless financing for smallholders through the FU. Smallholders' inputs are ordered through their FBOs and aggregated in the FU. Financing is provided to the FU by BRC and when the harvest sales are made through the FU, the loan repayments are directly discounted to repay the bank. Pre-harvest advances are also available if needed.

The FU arrangement has led to timely financing, a 100 percent loan repayment rate over numerous years, and increased farmer returns from higher productivity and higher prices. While the BRC has extended its cashless lending program beyond the region, the program is being expanded cautiously in relation to the high demand potential.

e. KCB MobiGrow – Kenya

Large banks, such as Kenya Commercial Bank (KCB), generally shy away from financing agriculture or do so only in selected sectors and VCs through large agribusinesses with collateral. However, in an effort to expand their outreach, and incentivised by the MasterCard Foundation (MCF), they are using a VCF-centric approach to reach otherwise non-bankable smallholders in the dairy and maize sectors. Besides financing, KCB's VCF model includes technical assistance and training, co-funded by MCF, plus access to technical advice through farmers' mobile phones. The financing process is cashless for the smallholders as they receive loans in kind through direct disbursements from KCB to their suppliers, who in turn provide agricultural inputs. The farmers' loan repayments are directly discounted from their buyers' payments and deposited in the bank.

KCB recognised that to successfully finance these farmers, a market-oriented ecosystem was essential. This ecosystem development was initiated by first mapping the VCs. This guided the development of the approach by looking for areas to improve efficiency in the VCs to increase the profits of those involved. In maize, for example, it was noted that if the role of the village broker developed into the role of local aggregator, it could eliminate the need for national and regional brokers, thus offering higher benefits to smallholders. However, training and capacity building was required before many of the local aggregators were effective in their enhanced roles. Financial services beyond loans also were needed so a mobile-based system was developed. The program is now growing significantly with a high level of repayment.

f. NAERLS research approach – Nigeria

The facilitation of smallholder inclusive VC development and financing can be initiated by research and extension services. The National Agricultural Extension, Research, and Liaison Services Institute (NAERLS) linked with Ahmadu Bello University (ABU) in northern Nigeria to help smallholders increase their rice and maize productivity and incomes. The approach was to develop smallholder organizations, improve their technical and managerial capacity and help them use aggregation and capacity to access inputs, markets and financing. However, financing was not available to the farmers during the pilot stage, so NAERLS decided to directly finance the farmers in the first groups. While this is generally not recommended, the improved productivity and incomes, along with the close support of NAERLS, yielded a 100 percent repayment rate and fast growth. This generated further interest which then allowed NAERLS to transfer the financing to a MF bank and refocus on its core business of research and extension. The outreach increased from 35 to 140 farmer groups and with a commensurate growth in portfolio.

g. SNV value chain approach – Rwanda

SNV is a Dutch development agency working in over 30 countries. In Rwanda, it uses a VC approach in its agricultural work to support all key VC actors in five commodity sectors and six livestock sectors in the lesser-developed regions of country. By taking a market driven end-to-end VC approach, the strengths and weakness of those involved in the activities and transactions within the VC can be addressed. It works simultaneously with those who provide services for the VC, such as banks, investors, extensionists and other service providers. For example, working with six banks and one MFI they have developed a VC financing approach to minimise the risks of potato production, marketing and financing. Banks loan to seed and inputs suppliers but payments are made to the large companies from whom they purchase their inputs. This reduces credit risk and improves cost efficiency. After input sales are made to the producer organizations, the loan is transferred to the producers and during harvest, potatoes are sold to collection centres, which aggregate the produce and sell to processors and wholesalers who in turn repay the banks. These banks in turn discount the outstanding balance from the farmer's loan account and repay the farmer by depositing the remaining funds into their current or savings accounts. Not only is the system a closed circuit, but the financial transactions flow through the bank allowing for close control. Payments to the producers can also be received electronically through mobile wallets they have with the bank.

h. Buy-in and change is a slow process – Rwanda

The development organization Access for Finance Rwanda (AFR) provides a reality check on the transition from conventional financing to agricultural value chain finance. As development practitioners know, introducing sustainable social and community change is a difficult process, even for experienced development finance facilitators. AFR facilitates innovation change through competitive grants and support incentives. Yet even when the desired results are demonstrated through these experiences, the desired long-term change may occur or not. Sometimes, the financing institutions or VC actors may still be reluctant to continue to implement these changes or expand their services as expected. Long-term change and the scaling up of adaption cannot therefore be guaranteed after project support ends.

B. Risk mitigation and reduction

A key factor in agricultural VC financing is risk. As shown in the following cases, there are multiple financial and non-financial products to help address the constraints and effects of risk.

a. ACRE Africa – Kenya and Rwanda

ACRE Africa, the brand name of Agriculture and Climate Risk Enterprise Ltd. (ACRE Africa), is a for-profit insurance surveyor in Kenya and an insurance agent in Rwanda and in United Republic of Tanzania. It evolved from a donor-supported global insurance facility for index-based agricultural insurance for smallholders, whose goal was to introduce the concept. As noted by ACRE, often the suppliers, buyers and bankers, rather than the direct beneficiary farmers, are the quickest to realise the advantage of insurance, as well as the governments who otherwise have to intervene after natural and production disasters.

ACRE is a fee-based facilitator, designer and capacity builder for insurance, which is operated by collaborating insurance companies and other partners. Its three main insurance products are: a) weather index, b) area yield index, and c) hybrid index, which combines weather index and multiple-peril. The continual improvement and upgrading of technologies is imperative to reducing costs, as is adjusting to the country's changing policies. This is expensive though, and covering the costs required to achieve cost-effective scale of operations is challenging. ACRE learned that product development must also be tailored to the context and service provider. For example, in Rwanda livestock insurance is most common whereas crop insurance is more prevalent in Kenya, most commonly bundled with credit services.

b. Nyala Insurance – Ethiopia

Nyala Insurance Share Company (Nyala) is one of the leading private insurance companies in Ethiopia offering three types of insurance services: general, life and micro insurance. With support from international agencies, it was the first to pilot micro-level weather index insurance for smallholders in the country. Micro insurance is a relatively small part of Nyala's overall activities in terms of volume, but is crucial to smallholders, while its policies are sold and administered through partnerships with microfinance institutions (MFIs).

The agricultural micro-insurance products offered are: a) weather index crop insurance, b) multiple-peril crop insurance under two options (production cost coverage or expected yield loss coverage), and c) livestock insurance. The cost of insurance varies according to the product and the most popular is yield loss coverage since it includes the combination of production and price risks. Two key lessons learned are: 1) bundling of finance and insurance was needed to reduce costs and make insurance viable, and 2) the largest financing risk is that of poor management, thus highlighting that insurance coverage is only part of the risk reduction strategy needed for financing.

c. ACEP credit guarantees – Senegal

Credit guarantees are an important incentive mechanism to increase agriculture financing by reducing the risk of lending. The Credit and Savings Alliance for Production (ACEP), a leading agricultural service provider in Senegal, partnered with the USAID Development Credit Association (DCA) to receive a 50 percent guarantee on their portfolio to allow them to lend to smallholders and VC actors who would otherwise pose too great a risk to the institution. The fee was 0.5 percent of the guaranteed portfolio per year.

Only producers and agribusinesses linked within VC production and marketing arrangements were included in order to reduce the lending costs and risks.

The success of ACEP financing and the DCA guarantee owed largely to the extensive training of ACEP technical staff, which also including technical training for 60 agricultural VCF credit agents, the implementation of integrated financing models for rice, millet and maize, and an educational program for farmers and producer organization representatives.

The ACEP model also raises the question of continuity after the seven-year guarantee USAID DCA program ends. While it will likely not be needed for the farmers who already have established credit histories, questions remain over whether other farmers in the sector, or in other sectors, will be disadvantaged by a lack of credit. It is unknown whether or not there is an opportunity, or a need, for a governmental or private guarantee program.

d. Incentive-based risk sharing systems for agricultural lending in Africa

Comprehensive risk sharing systems with incentives for both agricultural lenders and borrowers have gained interest in multiple African countries and five country case systems assess the key elements of these and make comparisons. Nigeria was one of the first Central Banks to develop a multi-faceted program to address risk, called Nigeria Incentive-based Risk Sharing System for Agricultural Lending (NIRSAL). It was conceived as a comprehensive approach to reducing risk in agricultural lending following decades of individual risk sharing mechanisms, including governmental subsidised credit guarantees, interest rates and insurance subsidies. The Central Bank decided to further promote agricultural lending, especially to smallholders. Using a VC approach, NIRSAL combines credit guarantee support, agricultural risk through insurance, capacity building through technical assistance, and market risk reduction through promoting VC development and market access as a comprehensive approach to risk sharing. All crops, livestock and related supportive economic activity across the VC are supported by this facility.

Ghana followed with a risk sharing system that mirrored NIRSAL: the Ghana Incentive-based Risk Sharing System for Agricultural Lending (GIRSAL), although it has suffered delays in becoming operational. Both Rwanda and Kenya have also followed similar approaches with the Rwanda Agriculture Risk-Sharing Financing and Facility (RARSFF) and the Kenyan Programme for Rural Outreach of Financial Innovations and Technologies (PROFIT), implemented by the Agricultural Finance Corporation (AFC), a governmental finance institution, respectively. In all cases, a VC approach to lending is encouraged with incentives to build capacity and linkages with commercial VC partners. Common elements of the three cases include: 1) a VC approach, 2) use of guarantee mechanisms to share risk of lending, 3) use of agricultural insurance, 4) provision of technical assistance and support, and 5) incentives, both to agricultural borrowers and to lending institutions.

In Morocco, Tamwil El Fellah is a special financing institution within the Agricultural Bank Group Credit Agricole du Maroc (CAM) created for smallholders who do not have the collateral to meet mainstream banking requirements. A partial guarantee program, credit history and production capacity are used for credit scoring, complemented with technical assistance. In line with the government of Morocco's VC development and green program, CAM and Tamwil El Fellah follow VC development approaches as they build tailored financial products and other services for different producers and their VCs. These include technical support, subsidized guarantee funds for smallholders, and subsidized agricultural insurance through private providers and products for smallholders without collateral.

e. EAX Commodity Exchange – Rwanda

The private sector can lead in VC product development through reducing risk and marketing efficiency. With legislative and contact compliance support from the government, the East Africa Exchange (EAX) company was established for East Africa, offering warehousing and collateral management, electronic warehouse receipt financing, an electronic trading platform, and price and trade information services. The benefits go beyond its direct activities and EAX serves as a source of “price discovery” of commodity market price information across the country, which reduces credit risk. By upholding high standards, it promotes quality upgrading and differentiation. And, despite its rapid growth, it notes the need to build awareness of these services and improve the aggregation of farmer organizations to participate more fully.

f. ECX Commodity Exchange – Ethiopia

Over a decade of operations, the Ethiopian Commodity Exchange (ECX) has proven its value in commodity trading and price discovery for the leading agricultural sectors. This has improved market conditions for Ethiopian producers, with effective payment and physical delivery procedures guaranteed for both sellers and buyers. With evolving technologies, it has moved from an open call system to an electronic exchange and has expanded outreach e-trade centres to other parts of the country.

The ECX has enjoyed notable success with export commodities of coffee and sesame, but has found it more challenging with services in other commodities. Its more recent growth has been spurred by its integrated trade services approach, through which it offers warehouse collateral management, warehouse receipt financing and trading. This allows for more efficient quality and grade control for trading as well as the issuing of warehouse receipt financing in partnership with the Commercial Bank of Ethiopia. The need and growth potential for savings are huge, but to effectively serve the masses, more work is needed throughout the country, specifically on orientation, farmer organization for smallholders, and increased warehouse capacity.

C. Application of technologies

Improvements in mobile technology have created significant opportunities in finance and technology. In 2016, mobile technologies and services generated USD 110 billion of economic value in Sub-Saharan Africa, equivalent to 7,7 percent of GDP. Around 270 million people in the region access the internet through mobile devices, while the number of registered mobile money accounts reached 280 million in March 2017². In Ghana, the number of mobile wallets grew 420 percent in five years, and transactions from 10 million to over 250 million. In United Republic of Tanzania, over 50 percent of adults have active mobile money accounts.

Telecommunications, data management platforms and technological innovations have been instrumental in advancing agricultural VC financing. Instant information exchanges with buyers, suppliers, producers and financial institutions and extension services, allow for more effective buying, selling and access to services. Across Africa, there are many private- and public-supported innovators in this field. Many innovations, however, remain at the pilot scale. Two distinct case examples (below) show how these are developing.

² <https://www.gsmaintelligence.com/research/?file=7bf3592e6d750144e58d9dcfac6adfab&download>

a. Tulaa – Kenya and Ghana

Tulaa is a private IT platform m-commerce company that contributes to agricultural VC efficiency and transformation through mobile-based commerce for buying and selling, digital finance and information sharing. The information technology platform is a virtual marketplace designed for end-to-end services allowing farmers to access discounted agricultural inputs on cash or credit, information (including farmer-technical and price information), and to sell their crops, all via their mobile phones. The Tulaa business model is built on commission earned from the sale of inputs and commodities on the platform, as well as revenue share on the processing fees charged by their VC and telecom partners. Tulaa also earns interest on its loans. Input suppliers can use the platform to sell more inputs and have closer contact with farmers. Buyers can better plan, coordinate and aggregate purchases with farmers and farm organizations and thus be better informed and equipped to serve their end markets. In the past, Tulaa has partnered with financial institutions and it has helped these institutions benefit from having access to more product-transaction and cash-flow information of their clients and the VCs, which helps the banks in their lending decisions and monitoring. Since these returns from commission and a small portion of the interest were insufficient for Tulaa to operate profitably, it began to directly provide financing to farmers for their input purchases. The initial results have been encouraging and the loan repayment rate has been high, but the upcoming challenge is to reach a large scale of operations. Investors are interested in Tulaa, its business model and platform as exemplified by a recent investment request that was over-subscribed.

b. M-Birr - Ethiopia

There are many mobile money systems in Africa, however most are restricted to specific telecommunications systems limiting their effectiveness to reach actors on others systems. As a result, transactions including mobile banking, purchases and sales, mobile extension messaging to smallholders and communication with their service providers are not easily facilitated across different systems. M-Birr, developed by MOSS ICT Consultancy, has been designed as a matrix and is the only payment service in Ethiopia that allows a customer of one MFI or bank to easily send money or payments to an M-BIRR customer of another one. It generates income from mobile user fees and is able to offer services more efficiently by partnering with large microfinance and credit and savings organizations with a combined 800 branches to reach over 800 000 clients.

D. Women and youth

Women are more active than men in African agriculture, yet they are vastly under-represented in commercial VCs. Family obligations restricting mobility, and a lack of financing are their main constraints for commercial agriculture. However, as exemplified below, one of their advantages is that women often have a greater capacity in group organization and networking.

Youth meanwhile, who are the future of agriculture and agricultural innovation, remain the most disconnected mass segment in rural communities in Africa. Commercial VCs – rather than traditional agriculture - fit their interests. Yet, owing to their lack of experience and collateral, and without partners or support, financial institutions are unwilling to offer financing and as such their opportunities are limited. In Rwanda, with some support, youth are able to create their own opportunities.

a. Women's informal huckleberry value chain financing – Cameroon

Huckleberries, locally known as *njamajama*, are a traditional herbal vegetable in the North-West Region (NW) of Cameroon. Its women producers were seeking a market beyond their household consumption and community and in doing so, developed a trust-based VC involving multiple partnerships. Trust is a key component in the VC from the growers to aggregating collectors, transporters and marketers. Commercial development of the VC beyond the local level began with marketing in regional cities and has grown to serve major cities and markets across the country. Building on trust relations, the women give their produce to collectors, delaying payment after having agreed a price for their 50 or 100 kg bags. These aggregators then sell the *njamajama* to local retailers or arrange for transporters to transfer the goods to cities, again delaying payment. The marketers in the cities plan to receive the *njamajama*, and either sell and/or distribute it to other retailers. After selling to restaurants and consumers, the money is sent back through the same VC system to pay for transport and to pay the collectors, who in turn pay the women growers. When the *njamajama* AVC system was conceived, capital was not available so the system developed by the women required no initial capital for the market collectors and sellers, and instead depended upon mutual interests and trust to make it a success.

Njamajama is a fresh vegetable so is it imperative that the VC be fast and efficient. The crop is picked, sorted, transported overnight – normally on inter-city buses – wholesaled, retailed and consumed, usually within a day. The availability of the fresh vegetable in cities created a significant growth in demand and as a result, based on the proven AVC system, financing is now available to expand the production areas and invest in irrigation, higher-yielding varieties and improved distribution logistics along the AVC.

b. Youth in agribusiness forum – Rwanda

The Rwanda Youth Agribusiness Forum (RYAF) was formed to collaboratively address the constraints rural youth face in agriculture and agribusiness. RYAF, with nearly 1 500 fee-paying members, has a volunteer board and district coordinators as well as 400 university interns who help map the needs, interests and VC opportunities in the districts. RYAF focuses on five sectors: a) primary production, b) livestock, c) agro-inputs and services, d) agro-processing, and e) ICT in agriculture. It receives partial support from development agencies such as the Food and Agriculture Organization of the United Nations (FAO) and the government to augment its services. Low-interest loans with partial grant incentives from such support helps youth to establish their agribusinesses. However, RYAF is quick to note that financing must not come before capacity development.

E. Financing needs and investment funds

The many cases and examples above highlight successful experiences of VC development and financing, often with the support of development agencies. In addition, it is important to understand the real-life experiences of agribusinesses that struggle with financing. Hence, their needs are juxtaposed with the models and types of financing responses that are offered in order to understand their value and limitations in meeting those needs. The role of investment funds in working with both the supply and demand is also demonstrated.

a. SCL agribusiness financing – Nigeria

SCL is a specialized agribusiness company in Nigeria with a well-trained management team operating a soybean processing plant, farm and poultry operation. The new processing plant system produces high-quality oil and meal aimed for specialised human-food and animal industries. However, the firm is only producing at 10 percent of its capacity owing to cash constraints; its survival is in jeopardy as it cannot purchase soybeans, nor can it make contracting arrangements with smallholders for procurement, even if they are keen to produce for the agribusiness. The owners primarily invested their own capital to build the plant, but in doing so have exhausted their resources. Given their situation, and in spite of its capable management, quality of operations and market opportunity, banks are unwilling to finance the company.

b. Vintage Farms – Ghana

Vintage Farms is a Ghanaian fruit processing enterprise that produces natural juices from pineapple and blends of five other fruits. The entrepreneur processes primarily for the national market, sourcing from his outgrower partners, as well as lower-value produce available in the region. When the SME company was forced to switch from bottling juice in recycled bottles, the owner invested his loan capital in canning equipment, but in the process exhausted his working capital. He is now suffering from a financial cash-flow crisis. Even though he is part of an international outgrower VC financing scheme, donor financing is managed through banks, which require collateral for lending: collateral that he does not have.

c. Metemamen MFI smallholder financing – Ethiopia

Many microfinance organizations wish to use a AVC approach to finance their smallholder members. However, as in the case of Metemamen MFI, these organizations often lack sufficient capacity to assess AVCs and do not have an operational system adequately adapted to agricultural lending. Metemamen, for example, disburses its agricultural VC loans directly to smallholders in one cash instalment, just as it does with its urban MF lending. Interest rates remain similar and the MFI relies on farmers to sell in the markets as they traditionally do, and then repay accordingly. In summary, the lack of effective application of a AVC approach, such as making use of AVC linkages and information, puts Metemamen's agricultural lending at higher risk and incurs additional costs.

d. Agricultural value chain financing with impact investment funds – Africa

Agricultural investment fund management brings an understanding and expertise of agricultural VCs and financing along with their investments. They do not rely on conventional collateral and those reviewed most commonly use agricultural trade contracts to support their loans. Long term finance, subordinated loans and equity investments are part of their financing options. For social impact investors, these products are frequently blended with grant funding from donors to build capacity.

The management and AVC expertise available from investment funds and their financing, and the management needs of agribusinesses and their VC partners, would seem to be a good match for working together. However, relatively few agribusiness firms, SMEs, and producers receive financing from these funds. For most, this is a huge hurdle that is only slowly being bridged.

A lack of capacity and governance, lack of scale, lack of secure, and/or profitable markets inhibit those needing finance from receiving it. Agribusinesses do not always accept the investment conditions offered, such as foreign currency denominated loans, which are the most common. Some agro-enterprises are also penalised owing to their country risks, which keep investors away and/or raise the cost of loan funds.

The seven impact investment funds highlighted in the document have relatively common value chain approaches and investment strategies. Pricing of risk, investment sizes and processes are all similar and often there is co-investment or competition for investment from the same SMEs and producer organizations, in large part due to the perception that there is a lack of investment-ready agricultural investees. This investment risk is borne out by the results of much higher repayment losses than are found in microfinance funds. Despite the hurdles, investment fund use is increasing and is contributing to non-conventional lending and investment that benefit the entire financial industry. Through collaboration, such as within the Council on Smallholder Agricultural Finance (CSAF), impact investment fund leaders are also perfecting models for the betterment of all.



An AFRACA international conference in Kigali, Rwanda ©AFRACA

III. Analysis, learning and recommendations

III. Analysis, learning and recommendations

A. Comparative assessment³

The 22 cases depict the many ways to promote and facilitate agricultural VC financing. Risk is present at all stages along an agricultural VC and in financing, and the case studies show examples of addressing risk at almost every stage, often using a combination of tools and approaches to counteract or reduce the risks.

A common theme spanning the case studies is that while finance is an integral part of the business model and approach, it is not the starting point. The initial focus before financing is to develop sufficiently strong VCs and VC partnerships, often needing to strengthen the capacities of the VC players in order to have mutually beneficial partnerships. There are significant differences in levels of capacity and understanding by partners; the weakest links determine the vulnerability of the VC and related financial performance, and therefore all of the cases involved capacity building in one form or another. Some began by building smallholder capacity while others started from agribusiness firms. For others, the starting point was to build the capacity to implement a tool to reduce risk, to create ITC solutions or to incubate youth entrepreneurs in competitive VCs.

One could question why there is so much variety among successful approaches and starting points in the case studies. Underneath this variety is a common theme: all the **approaches began with a comprehensive VC assessment**, considering the capacities and the potential of the participants and their transactions in the VC. At times this was a formal assessment, such as that ADAF undertook to develop the plantation financing. On other occasions this assessment was informal, as illustrated by the women's informal huckleberry VC. Without financial resources, those in the VC were driven by their common need for income, used their contacts and discussions to assess the potential of the huckleberry VC and develop the links and capacities to transform it into a vibrant, commercial VC. In each of the cases, it was important to develop their own business proposition that defines their business model or other VC application.

Business models

Six of the seven business model cases employed the strategies of a **lead firm**. These work **with and through the stronger VC participants**, such as agribusiness firms, to drive VC relationships and coordinate the flow of inputs and products one another. Producers with a mutual interest in acquiring inputs and accessing markets were organised and brought together with processing and marketing firms which needed to procure products. Their mutual interest of needing each other was the driver of their AVC relationship. Development agencies were actively engaged in promoting these businesses by appointing NGOs as facilitators and capacity-development agencies. Their intention is to strengthen the capacity and market access of weaker participants, such as smallholders. In some cases, such as MADE in Ghana, the financing resources are channelled through the lead firms who themselves receive significant benefits; they benefit from direct support to build their capacity as well as the opportunity for procurement and marketing of much larger volumes of products from the smallholders.

³ The comparative assessment presented is an overview. Since the document is made up of case studies primarily designed for training and to stimulate discussion, it is expected that the readers will draw their own conclusions and comparisons from the cases in the document and annexes.

Power dynamic difficulties can sometimes arise in a lead firm approach, given that AVC drivers can often set the conditions that have the potential to foster inequality among AVC partners. **Inequality poses both the economic and social risk of abandonment of an AVC relationship**, and threatens repayment obligations when one of the parties loses trust and interest. **Social empowerment** is therefore an aspect to consider in assessing the different cases. In MADE, however, the direct technical assistance (TA) was largely done through support of the lead firm. In the case of NAERLS, the approach was to first facilitate the organization and TA of the producers and then link them to commercial markets. It appears both forms can work. An important element of success in both cases was capacity development and farmer organization. However, in the MADE contract farming approach the farmer groups assume less responsibility given that the input supply and buyer role of the agribusiness firm holds more control.

Donor-supported approaches have limited scope. SCL agribusiness firm, like most companies in Africa, did not receive outside support for its operations or in building its plant. Consequentially, its status as a lead firm was stymied from a lack of capital to lend to producers. Additionally, the producers could not afford to build farmer capacity which would have enabled them to produce for the company: this lack of capacity and inadequate smallholder organization and financing severely hampered its VC development. As a result, **owing to insufficient resources, opportunities were missed** for the smallholders to be able to produce for the company and for the SCL company to procure enough commodities to operate its soybean processing plant with sufficient volumes to be efficient and profitable.

Donor and government support resources are limited; what are the criteria to determine when support resources should be used to support companies like those of the MADE program or others like SCL? A further question arising from the contract farming and lead farmer approaches concerns what happens in the future. This is especially the case where programs have been subsidised. For example, will smallholders with small plots of land who are now producing grain under contract be able to sustain their livelihoods in the long term? With agri-inputs now available on credit to be repaid in kind to a pre-determined buyer, smallholders now produce much more than before. Their net returns, however, remain small and insufficient for their needs. Undoubtedly, many will need to look at other alternatives. But, their experience with VC linkages, training and use of finance will be useful, even for those who will transition to other livelihoods, sectors and VCs.

Transparency in negotiations, capacity building and group and leadership development were important for the social empowerment and economic success of these business models. **Building confidence and trust among VC participants was a deliberate process** and required considerable engagement, especially when it involved group formation. In particular, the Farm Concern Commercial Villages Model shows the depth and long-term nature of development needed to build sustainable VCs and partnerships. Farm Concern is a comprehensive approach that follows the entire process of a particular VC, and even deliberately intervenes in community dynamics and livelihoods to ensure the full participation and community “ownership” of the processes.

Risk mitigation and sharing

Risk is a central theme in all of the cases and is the largest bottleneck for financing. Systemic risk is always a major concern in agriculture but the cases highlight many more risks and offer some solutions to avoiding or reducing them. A lack of capacity on the part of VC partners, especially producers, was one common risk. All cases directly or indirectly dealt with capacity risk, which in many ways is the most significant risk, especially when involving small-scale producers.

Some cases exemplified approaches to reduce production risk through better use of technologies and technical assistance, while other cases highlighted the application of insurance to mitigate that risk. Price risk was mitigated through contract farming in many cases, but also through a better understanding of when and how to sell and organization. For example, in Rwanda, SNV's VC model supports smallholder aggregation for selling or storing potatoes, and EAX Commodity Exchange offers the opportunity of "price discovery" for price information and the ability to hedge and store to mitigate price risks. The ECX Commodity Exchange in Ethiopia and EAX exchange both show the importance of price information as a public good. Indirectly, they are both also promoting the use of common standards for the commodities they sell. Even when many smallholders continue to sell through traders, the traders and aggregators can reduce their price risk by hedging and by transparent pricing, which benefits them and those who sell to them, including small holders.

Risk mitigation has a cost and is especially expensive during the development stage. The case of ACRE illustrates the difficulty of introducing and encouraging smallholders to pay for agricultural insurance. The groundwork is expensive and results are slow and uneven, given that pay-outs and the perceived benefits depend on the weather. However, in some cases, private insurers will provide coverage once introduced, especially when it can be bundled with financial services, such as in the ACRE and Nyala cases. Nyala is an example in which past donor support had led to the development of insurance programs that are fully sustainable today.

Information access and technology services

The application of information technology (IT) and data access offers huge benefits for agricultural VC development. There are many creative initiatives and proposed solutions but too many remain pilots and untested without donor support. Unlike mobile phone use and mobile money in Africa, few larger-scale applications of IT were found for AVCF. Even where they were found, many IT innovators were cautious about sharing their information. Nevertheless, Africa as a region is a leader in IT applications and more examples could have been highlighted in this rapidly advancing specialized field. The Tulaa case and one mini-case, M-Birr, were selected to highlight specific aspects of innovation. Both have demonstrated a capacity to grow to a significant operational scale. The M-Birr example focuses on mobile phones while the Tulaa model offers a comprehensive end-to-end service, both of which are aimed to improve efficiency and/or reduce risk. The innovative Tulaa model is an example of the fast pace of change in innovation and models. During the course of the case study development, Tulaa became independent from the founding institution. Later it changed its financing model from one of facilitating financing from financial institutions to its current model of direct provision of financing. Its credit appraisal system and information platform for its comprehensive service facilitation of input supplies and marketing have also evolved significantly.

Information technology can be useful tool to facilitate AVCF. However, the business proposition and model of the AVC and AVCF engagement must be clear and solid. In the analysis of the IT cases and of others not selected, it was noted that IT is best positioned to fit within that framework. For example, the information and AVC exchange platform in Tulaa is a critical part of its services. These IT services were developed around an analysis of the sectors and VCs, the VC partners and potential partners, and then IT services were custom designed to meet those needs and opportunities. Considerable costs were incurred in this development.

Tailored products and services

Agricultural VCF and development is context specific and must be tailored to the VC, the sector and the participants. Some cases dealt with major commodities such as maize and soybeans, and others with less common VCs, such as huckleberries and local market pineapple juice. Hidden opportunities may be found in these less common VCs that financing organizations overlook. However, because they are often overlooked, obtaining financing for these VCs was shown to be much more difficult.

The opportunities and needs of women, youth and minority groups appear to not be given due consideration, even though women, for example, play a major role in African agriculture. Strong, commercially focused, sustainable business case examples of agricultural VCF led by women or youth in Africa, and operating on a larger scale, were not easy to find and document. In this light, the women-initiated huckleberry VC system and financing provides a good example of how the women in Northwestern Cameroon took an overlooked crop that suited their production and culinary needs and consequently constructed an appropriate VC system and informal financing system.

Investor caution

The cases illustrate the value of access to funds for growth and development. Expansion of productivity from increased agricultural financing is evident in all of the countries. Yet, concerns remain. The case of investment funds shows that there are many risks and while these pools of funds generally had sufficient capital to invest, there was a gap in readiness by the potential investees. The unacceptably-high rates of arrears in many of the agricultural investment funds give further evidence to support the fund managers' caution. However, this leaves many agribusiness SMEs without the funding they seek due to the risks that would come with investing in or lending to them. The various investment funds analysed followed a similar approach; all were selecting from the stronger and larger agribusinesses and producer organizations and the fund managers were still facing the challenges of losses and fund management costs. It raised the question of whether there is a better way to adapt their models to reach a larger segment of the demand for AVCF.

Throughout the many cases in the document, it is noted that the **gap between VC financing needs and those who can provide financing is often not due to a lack of funds by the financiers.** Instead there is simultaneously **a lack of understanding by financial service providers of how to tailor-fit financing** with appropriate products to the demand, and on the other side, there is **a lack of well-developed VCs and strong, connected VC partners** with investment-ready plans for financing. Donors and governments can make a difference. For example, the support by the MasterCard Foundation and others was the incentive needed to jump-start the interest of Kenya Commercial Bank to learn how to finance remote and resource-poor farmers and AVC agribusiness partners for delivery of inputs, payments and support capacity building and group organization. The development of mobile technological innovations was needed as well as working with the suppliers on the appropriate agricultural technologies to be introduced. However, as with all donor-supported initiatives, the true test is the continuation and growth of the interventions after external support has ended.

The case studies analysed and described do not provide ready-made solutions for readers and they raise many questions. They do provide examples of innovations and distinct – as well as collective – lessons as a starting point. Readers are encouraged to carry out their own assessments, visit the country sites of the case studies most relevant to their needs, and begin to adapt and innovate.

B. Lessons learned

The diverse cases and examples illustrate the comprehensive nature of AVCs and AVCF and show different aspects of applying AVCF. Some overarching lessons are highlighted below, while the contact information links for each case allow for contact with project or business leaders or the arrangement of a visit.

- Agricultural VC financing encompasses both **internal flows** of financing between participants directly within the VC and for financiers **who use a VC approach to lend to or invest in** one or more of the participating actors in the VC. An important lesson for both internal and external VC financing is to **understand the VC, the transactions and its participants' strengths, weaknesses and opportunities, make use of the relationships, and make financing decisions accordingly.**
 - For producers, AVCF offers a mechanism to obtain finance that may otherwise not be available due to a lack of collateral or too high transaction costs.
 - For agribusiness suppliers, buyers and processors, it offers a way to build stronger buying and selling relationships and market growth.
 - For bankers and investors, AVCF offers a way to reduce the costs and risks of financing by having more informed and accurate tailored financing. It also provides opportunities for third-party financial arrangements to reduce transaction costs and improve repayment.
- As exemplified in the many case studies in the document, AVCF is not a recipe nor is it a financial tool; rather **it is an informed assessment approach and consequential application of an array of financial and non-financial tools and technologies that are most appropriate.** The informed assessment is needed to determine the set of tools, technologies and strategy to be employed.
- **The business model is important and must be well designed.** Facilitating development actors can accelerate the process of building the needed capacities. While the model can be driven by the buyer, as was most common, by a producer organization or through the employment of an integrated model, the processes, relationships and expectations must be clear and mutually beneficial to be sustainable. Otherwise, linkages weaken or break.
- Financial institutions are lacking in many rural areas despite the considerable efforts of governments to promote rural finance, often even when there is a heavy subsidy component. The costs and risks of agricultural lending to rural enterprises are too high to interest these FIs to lend or invest. However, **the opportunity for the FIs to collaborate in VC finance initiatives in which they can interact with companies further along the chain,** rather than directly with farmers, offers one of the solutions to address this need.
- Even so, **AVCF cannot address all aspects of financial services needed in rural areas.** Most AVCF is shorter-term and linked with specific VCs. Even so, it can open avenues to access other financial services offered by financial institutions and others.
- **Risk mitigation and cost efficiency are critical elements of AVCF success.** Insurance, guarantee mechanisms, price hedging and storage, and ICT are important tools that are expanding in use in agricultural VC finance. The cases demonstrate that collaboration between partners within the VC can also help address not only production and market risks but also the technical, organizational and management capacity risks of VC partners. It can help to ensure opportunities for competitive and profitable end markets.
- **Change should be expected and embraced.** A VC approach is fundamental but the implementation and adaptation of the services needed to best fit the VC partners is and should be ever changing and evolving. While this is most evident in the ICT field, the evolution of VCs and VC financing is continual, both to address changing risks and needs as well as to continue to reach higher service efficiencies.

- **The role of the public sector is important.** Government and development agency contributions in fostering an enabling environment are recognised in many of the cases and came in various forms:
 - ▀ research innovation support;
 - ▀ timely policy and regulatory support for contract compliance;
 - ▀ data development support;
 - ▀ banking regulations that permit the application of new financial products and technologies;
 - ▀ risk sharing mechanisms such as support for partial loan guarantees;
 - ▀ physical infrastructure, such as feeder roads, warehouse development, etc. that permit growth and improve AVC efficiency.
- Facilitation and incentives can lead to innovation. Many of the case studies benefitted from support and/or were facilitated by a change agent. This was found to be important, but cases also illustrated the need for caution given that fundamental change can be a slow process to build the capacity, trust and true “ownership” of the AVC relationships and innovations.

a. Considerations for design and adaptation

For bankers

Change is led from the top. Bankers, including central bankers and other FI leaders, are often not familiar with AVCF. They need to meet with agribusiness leaders and their AVC partners to understand and become comfortable with the VC processes and VC partners. Together they can then assess how to make use of the transaction-based lending opportunities of AVCF and develop financing accordingly. Facilitators in some of the case studies helped in opening dialogue.

For policy makers and development agencies

Governments and development agencies have the important role of change facilitators. They can and should provide incentives for VC development and support, and financial innovations that promote improvements in agricultural financing for all players, especially smallholders. Research and data support, risk sharing and the design of new policies and guidelines, for example, are all important types of governmental inventions to be considered. Safeguards and compliance mechanisms must also be in place, while contract enforcement, standards, and stability are also needed to give investors confidence to lend and invest.

b. Recommendations and next steps

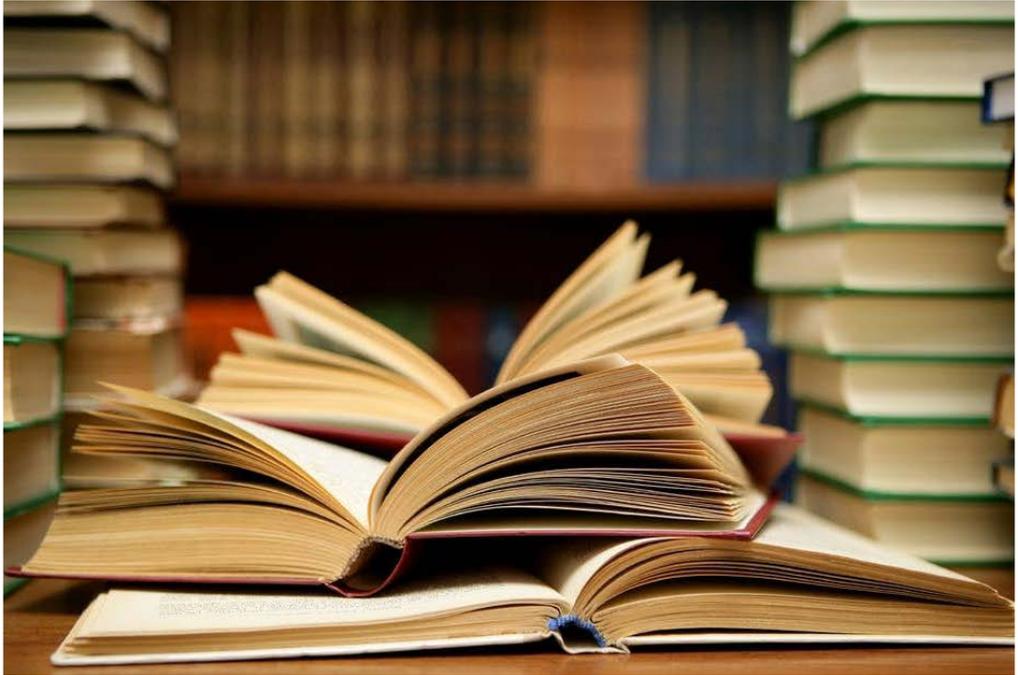
Learning is a continual circle – learning from others, learning by doing, and sharing and building on lessons learned all go hand-in-hand. Finding and gathering information and adapting and using it is followed by the need for more information. The presentation of case study learning portrays experiences and lessons. They are a starting point to share innovations and can be useful in training programs.

However, to implement the innovations, one must follow the lead of the cases and delve deeper to learn the details of how they are implemented and the adaptations needed for replication in one’s own context.

These must then be tested and the capacity built for implementation.

Developing the 22 case studies and examples involved much networking and many connections to build the rapport needed to develop them. The support of networks and resource organizations was important to make this possible. AFRACA and FAO were especially critical to the work of the cases and their continued support is needed for ongoing learning and to share lessons learned. The willingness of the many agribusinesses and institutions studied to share information was also invaluable.

The case studies presented provide innovative examples of AVC financing. They are intended for learning but must be adapted to different contexts, AVCs and partners. Hence, care must be taken in reviewing them in light of one's own commercial feasibility and sustainability. In addition, many of the cases presented currently have, or previously had, some subsidised support or facilitation, however this may not be the case for replications.



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IV. References

IV. References

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Women working in a maize (posho) mill in United Republic of Tanzania ©AFRACA

V. Highlight case studies

V. Highlight case studies

Annex 1: Partnering for success in smallholder oil palm and rubber plantation financing: The case of Afriland First Bank in Cameroon

Case study developed by Justin Bomda, Simeon Numbem and Calvin Miller

Overview of plantation agriculture

Cameroon, like other countries in the region, has many plantations. These tend to be large agribusinesses that have obtained long-term land leases for developing and managing plantations around their processing plants. In Cameroon, the government owns the land and concessions of 25- to 90-year leases are negotiated and purchased by the companies. Labour to operate the plantations is drawn from the surrounding areas when available, while other workers come from outside the region. Many smallholders in the region also have small groves of trees, the yields of which are sold to the processing company or companies.

Development agencies and the government are concerned about the high level of poverty in the regions of many of the plantations. In addition, the relationships between the large plantations, their workers and the surrounding communities varies; conflicts sometimes arise from the communities' lack of land and bargaining power. In Cameroon, agro-industries own approximately 80 percent of the plantations and smallholder's 20 percent. In Asia, and Côte d'Ivoire, smallholders own 80 percent and agro-industries approximately 20 percent. Hence, sharing some of the plantations' leased land back to community households can promote better opportunities for these families and represent goodwill. From independence until the late 1980s, plantation agriculture was the mainstay of the economy in many parts of Cameroon and enjoyed government support and foreign investment. However, low international market prices and the withdrawal of subsidies from governments and international organizations hit smallholder plantations hard. Consequently, smallholder production of some perennial crops (oil palm, cocoa, coffee and rubber) that were mostly export oriented became less competitive, and the production of many was abandoned. However, larger agro-industries such as the La Société Camerounaise des Palmeraies (SOCAPALM), Hevea Cameroun (HEVECAM) and others survived because they restructured to face the external market downturn.

The following two cases describe innovative but complex agriculture financial initiatives involving multiple public and private stakeholders.

SOCAPALM oil palm plantation setting

SOCAPALM is one of many agribusinesses privatised by the Government of Cameroon. It operates tens of thousands of hectares of palm oil groves on several sites. In one grove in central Cameroon near Eséka, for which it holds a long-term lease of 60 years, it decided to turn over 2 600 hectares of old grove oil palms to smallholders. These groves were past peak productivity (up to 25 to 30 years) resulting in low productivity and high maintenance costs for an industrial plantation. However, adequate productivity on these plantations can be maintained with smallholder management. The sale of the lease allowed the company to avoid



Oil palm ©AFRACA

investing in the renovation of the trees to avoid investing in their renovation. In addition, it provided the company with an opportunity to pilot land return to local ownership and improve their relations with the communities.

For smallholders, it provided them with the means to increase palm oil production with a secure market through a long-term contract with a modern palm plantation.

The many local smallholder oil palm producers, workers in the SOCAPALM company and other (elite) middle class workers residing in the locality were interested in participating in order to obtain financing to buy long-term leases and the necessary investment financing to renovate the plantations on those acquired plots. The government was also interested in supporting the transfer of oil palm leases to the smallholders.

HEVECAM rubber plantation setting

Smallholders in Niète, where Hevea Cameroon (HEVECAM) is based and where the rubber agroindustry is located, were able to rent new rubber plantations. This leasing arrangement was triggered, for most part, by the strained relationship that had developed between the village dwellers and the agro industry, given that villagers had been stealing plantation rubber to sell back to the agroindustry. Hence, the Hévéa rubber company in the south province of Cameroon transferred a long-term land lease of 600 hectares to local and sometimes non-local smallholder rubber producers, plantation workers and staff. This land is located further away from the rubber processing plant, but even so, was highly sought after resulting in a selection process to determine the recipients, who also had to make a small financial contribution. The land lease sale was also an expression of goodwill to the community.

Impetus for change

The impetus for change was not only due to socio-cultural relationships but was also caused by the need for HEVECAM to experiment with creating a strong partnership with smallholders as a means to increase production for its processing plant and export potential. It was a lucrative venture to meet increasing market demand for rubber. However, the creation of new rubber tree plantations by the firm on its own land was severely handicapped by its lack of long-term financing.

The land purchase transfer and plantation development were only possible owing to the coordinated determination of three stakeholders:

- Afriland First Group's determination to promote wealth creation among the underprivileged, especially linking rural agricultural development with the MC², the rural microfinance network that it promotes;
- the interests of HEVECAM and the government to reduce poverty in keeping with its economic policy and reduce social tension in the locality, and
- the community's determination to manage its own affairs.

The combined forces of these three stakeholders in bringing together other institutions and agribusinesses led to developing a model that fits the interests of those in the plantation VCs. The pattern of collaboration, used in both oil palm and rubber, makes it possible for the transfer or sub-letting by the state, or a large plantation, of land to local farmers with individual lots. These long-term lease purchases are for renewable land leases of at least 30 years. The large plantations continue to process palm oil and rubber and acts as an off taker of the produce from smallholders. They also perform some of the plantation farming operations, including transportation.

Objectives

The **general objective** of the initiators of the plantation investment model was to enable local farmers to acquire land and develop their lots into modern plantations. The **specific objectives** of those involved were to:

- increase agricultural production (of palm oil and rubber);
- improve agricultural productivity;
- ensure the large plantations to increase production at a lower cost of investment;
- decrease social tension in the localities by integrating smallholders into lead firm off-takers, and
- demonstrate a multi-stakeholder model for long-term financing for smallholder plantations.

To achieve these objectives, carefully structured long-term financing and working capital, as well as an intense capacity development process, was required to make it possible for smallholders to purchase the plantation plot leases and renew the trees on them. Existing formal and non-formal financial service providers, as well as new ones – and the agribusiness – needed to be brought together.

Value chain environment and general structure

In Cameroon, the land is owned by the government and is obtained through long-term leases of 25 to 60 years. Plantation land lease concessions to companies are subject to taxes through lease fees, whereas community lands are not taxed. Oil palm industries serve domestic oil consumption needs since the country is a net importer and rubber is for export. Both are very important to the economy and for revenue generation for the government. The plantation industries are largely controlled by a small number of large companies, most of which have large and multiple plantation land concessions in different sub-regions of the country, each with its own processing industry. While small processing companies and smallholder plantations are present in Cameroon, and are an important source of revenue to local communities, their overall production is small in relation to the large companies. Both industries have suffered from low global market prices affecting profitability, although the oil industry is partially protected by governmental import tariffs.

The following cases of oil palm and rubber respectively, focus on one company in each sector that partnered with Afriland First Bank in applying a similar innovative model to transfer some of their plantation land to smallholder farmers and finance the renovations of them.

The oil palm and rubber value chain actors

The Agro-based cluster model, as it is called, brings together five main actors: a large plantation, farmers, Afriland First Bank, a microbank, a micro-venture capital fund, as well as development funding and supporting partners. The principle stakeholders in the models are described on the next page.

Plantation agribusiness companies

SOCAPALM oil palm company and plantation

La Société Camerounaise des Palmeraies (SOCAPALM) was created as a governmental industry in 1968 but privatized in the year 2000, selling 90 percent of the shares to an agribusiness group primarily from southeast Asia, to improve competitiveness. The company subsequently grew from 18 000 hectares of oil palms to nearly 33 000 ha in 2017, producing over 95 000 tonnes of palm oil from oil mills on six plantation sites. It also has 2 000 ha of rubber trees. It has 6 400 workers living on or near the plantations, and has schools, health centers, etc. for those workers, but the relations between the company and its workers and nearby communities has not always been smooth. A lease transfer of 2 600 hectares of old oil palm plantations to 102 small producers was undertaken in 2007 at the Eséka site.



SOCAPALM © C. Miller

HEVECAM rubber company and plantation

The Hévéa Rubber Company (HEVECAM, SA) was created in 1975 by the government and in 1996 was sold to private investors with the government retaining a 10 percent shareholding. The company has capacity to produce 50 000 tonnes per year of rubber with plantation concessions totaling 40 000 ha.

Small plantation farmers and workers

The smallholders living near the SOCAPALM oil plantation close to Eséka and the HEVECAM rubber plantation near Niète, are important to the companies providing both labour to companies' processing plants and plantations, and raw commodities from those who have small plantations nearby. Some of the worker families live on company land and others nearby.

Small farmer plantation cooperatives

Companies and the financing organizations did not want to deal with individual smallholders, which led to the formation of smallholder cooperatives for oil palm and rubber. These were formed with support led by Appropriate Development for Africa Foundation (ADAF) as part of the work in developing the land transfer and financing arrangement.



Oil palm trees © C. Miller

Value chain finance stakeholders and facilitators

Afriland First Bank

Afriland First Bank is the largest commercial bank in the country with 285 000 clients, CFA 641 billion in deposits, CFA 617 billion in loans (USD 1,21 billion and USD 1,16 billion, respectively), 40 branches in all ten regions and a strong rural agricultural presence. It works closely with MC² mutual microbanks on rural development for financial inclusion across rural communities, and provides training and support to their development.

Appropriate Development for Africa Foundation (ADAF)

ADAF is an NGO operating in Cameroon specialising in development, microfinance, rural finance and small business. Its objective is to help African farmers improve their living conditions, health, education and productive capacity. It conducts research and facilitates access to technical and financial – as well as developmental – guidance and monitoring of 118 MC² mutual microbanks.

MC² specialized in rural finance

The MC² model is an approach that involves mutual savings and credit microbanks owned by the smallholder communities, and is aimed at helping the disadvantaged to work together mutually to create wealth through financial instruments, in order to sustainably improve their living conditions. This model was designed, and is implemented, in collaboration with the NGO ADAF and Afriland First Bank. It is based on the principle that “victory over poverty (VP) is possible if the means (M) and the skills capacity (C) of the community (C) are put together ($VP = M \times C \times C = MC^2$).” Rural development is its core focus, using a value chain inclusive approach engaging rural farmers, an agro-industry and rural microbanks (MC²).

MITFUND, a venture capital firm specializing in the financing and management of small business

Micro Trust Fund (MITFUND) is a risk venture fund for micro level investments that provides farmers with management training and support and monitoring of financial management with microfinance organizations such as the MC².

DEG, a subsidiary of the German KfW for the financing of the private sector.

DEG is a specialised subsidiary of the German Development Bank, KfW, which provides guarantees and longer-term investments to development projects.

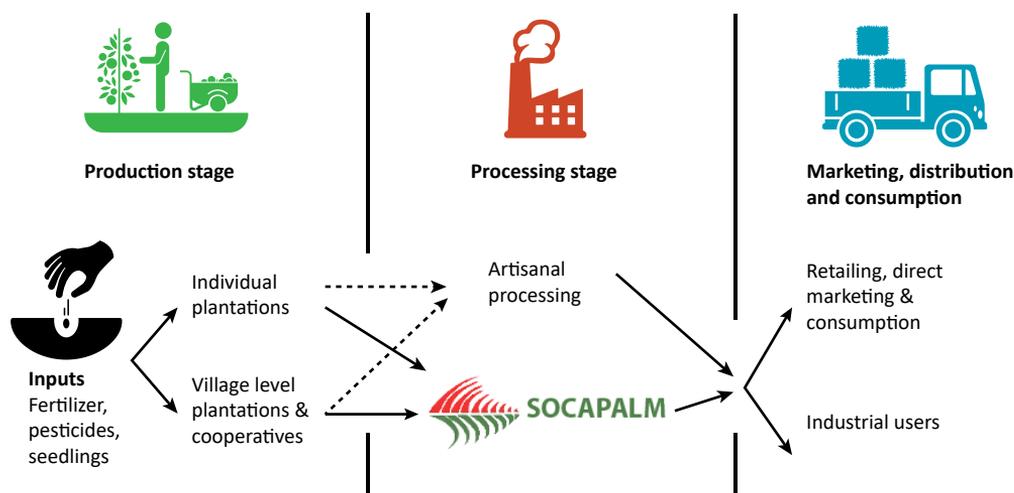
The case of SOCAPALM

Smallholder oil palm plantation farmers have very limited financial resources and low levels of labour productivity. They produce only half the output per person compared with large modern plantations, at nearly twice the cost per kilogram, and with very low oil extraction rates. The challenge is to help them improve their productivity and develop their land parcels into modern plantations by providing them with land, resources, markets and technical guidance. To do this, ADAF and Afriland First Bank facilitated a complex multi-stakeholder investment model. This involved the transfer and financing of 2 600 hectares of plantation to 102 smallholders and financing for the renewal of the plantations.

Value chain map of the scheme

As with all VC processes and financing, it is important to understand the VC by analysing all the agricultural and industrial activities from the production from the processing, marketing and distribution to the final consumer. This begins by mapping the processes as shown below.

Figure 1.1: Value chain map of the SOCAPALM oil palm plantation.



Key stakeholders and roles

Many stakeholders, including the government, through policy support and an initial tax incentive, were involved at the start of the plantation financing initiative. Clear and understood roles between all stakeholders (described below) were important for success. These stakeholder agreements were made through multiple contracts detailing specific arrangements between parties whose roles are noted below.

SOCAPALM

- the company was the architect of the transfer sale of some of its lease to smallholders through a sub-lease rental agreement with each one. This involved a tripartite agreement involving a management contract, a contract of guarantee and a surety guarantee. SOCAPALM agreed to:
- supervise and advise the growers, as well as supply agricultural inputs including selected quality plants;
- purchase all palm oil at the price set according to a reference price determined by the oil industry organizations, including the producer organization of small-scale producers;
- provide a guarantee of 20 percent for loans granted by Afriland First Bank to the new smallholder plantation owners and,
- discount loan payments to lenders at the time of payment of oil palm deliveries.

Smallholder plantation farmer recipients

- Sign a renewable 25-year sub lease contract.
- Pay the rental fee.
- Follow SOCAPALM advice and maintain their plantations adhering to SOCAPALM standards.
- Delivers all of its production to the SOCAPALM oil mill near Eséka.
- Each open an account at the Eséka domicile MC² for receiving payments.
- Find the necessary resources for the replanting (renewal) of their plantation trees.

Afriland First Bank

- Grants loans to the smallholders for purchase of the lease and plantation renovation.
- Provides refinancing to the microbank (MC²).

DEG

- serves as guarantor for the MC² through a guarantee contract for 80 percent of their loan from Afriland First Bank, and
- acts as a donor to support the creation of the MC² in Eséka.

MITFUND

- Micro Trust Fund acts as a technical assistant and deals with the follow-up of the repayment of loans to farmers on behalf of Afriland First Bank, and
- provides technical support in training to farmers in financial management in the context of the tripartite agreement to be signed between SOCAPALM, MITFUND and the smallholders.

ADAF

- guides and supports the smallholder plantation farmers in the creation of their Eséka community microbank MC², and
- trains, supports and monitors staff and elected MC² officials to ensure follow-up and proper control of the MC².

MC²

- with the support of ADAF, ensures payment and collection operations at the SOCAPALM office site;
- lends to smallholders purchasing the land and renovating the plantations;
- ensures loan repayment to Afriland First Bank, and
- provides other savings, loans and community banking services to local smallholder members.

The MC² plays an important role in financing and the collaboration of the four key stakeholders: local smallholders and community households, ADAF, Afriland First Bank and SOCAPALM.

In addition to its payment and the other financial services it intermediates as part of contract farming arrangements between SOCAPALM and the smallholders, it finances smallholders through individual loans, and through loans made to members through savings and loans with education groups. It provides loans to cooperatives to facilitate access to inputs and agricultural equipment, processing, storage and marketing, and manages special lines of financing of credit, from the government and others, to small producers. Three local cooperatives were created to improve the management of the smallholder plantations, including coordination for workers for harvesting, collections and support.

In summary, the various contract agreements are as follows:

1. Contract of a 25-year, renewable lease between the farmer and SOCAPALM transferable in the case of death. It requires payment of rent in advance and of small annual rents (about CFA 10 000 per hectare) and replanting is the responsibility of the smallholder.
2. Tripartite Agreement (SOCAPALM - MC² - Afriland First Bank).
3. DEG - Afriland First Bank guarantee agreement.
4. Tripartite Agreement (Afriland - MITFUND - Smallholder).
5. Tripartite Agreement (SOCAPALM - Smallholder - MC²).

Business model and financing

The financial arrangements and their flow of funds and guarantees is complex and required careful assessment, dialogue and structuring as is shown above and described in the detailed description below the map.

Cameroon oil palm plantation model for long term AVCF.

Figure 1.2: Financial model of scheme showing outflows and inflows of financial transactions

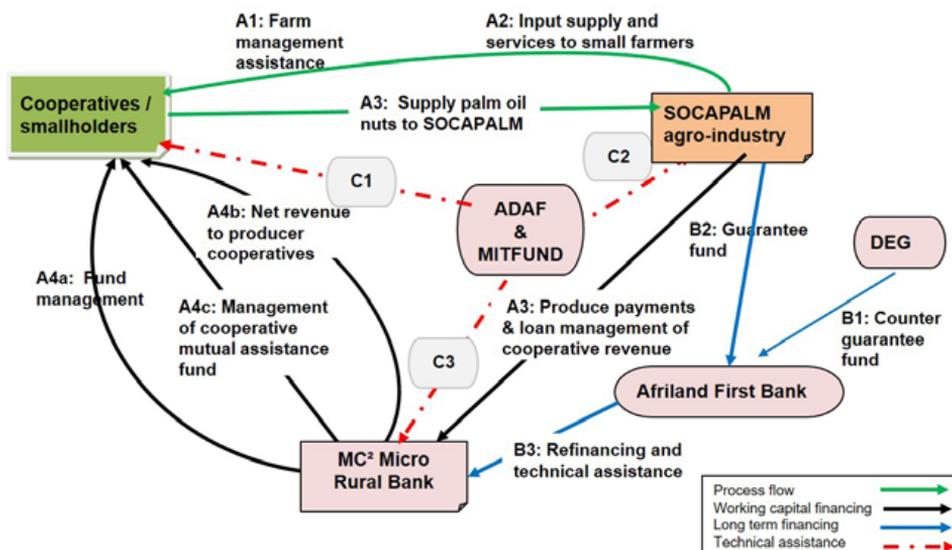


Table 1.1 describes the three major interactions and linkages that are depicted in the schematic diagram above.

These VC, financing and TA processes, and the partners involved in each of the arrangements are:

- a. tripartite arrangement between SOCAPALM agro-industry, producer cooperatives and MC²,
- b. quadripartite arrangement between Afriland First Bank, DEG, MC² and SOCAPALM, and
- c. technical assistance and support provided by ADAF and MITFUND.

Table 1.1: Financial model descriptions

Tripartite financing (A): SOCAPALM assures input supplies and farm management assistance to cooperatives (A1 and A2); cooperative members supply fresh palm nuts cones to SOCAPALM and sales revenue is deposited and managed by the rural microbank MC² (A3); MC² microbank serves as fund manager for the cooperatives, provide loans and other financial services such as money transfer (A4a); microbank payment to cooperatives (A4b) and also assures a functioning mutual assistance fund to support cooperative members during hard times.

Long term financing of project (B): the provision of a counter guarantee of FCFA 1.7 billion to Afriland Firstbank to facilitate a long term loan to SOCAPALM (B1); Afriland Firstbank accepts a guarantee from SOCAPALM, (B2) and Afriland First Bank assures refinancing and other technical assistance to MC² (B3).

Technical assistance of ADAF and MITFUND (C): ADAF and MITFUND are the key players in providing technical assistance in the form of capacity development, soft financial skills, dispute resolution in cooperatives (C1); and supervises enforcement of contractual tripartite agreement among MC², SOCAPALM and cooperatives/smallholders (C2); and auditing the accounts of cooperatives, provide training and general supervision to instill confidence to all stakeholders (C3).

The model is driven by four principal factors that have come sequentially to ensure success. First, there is the availability of the market, second the availability of long-term financing and third the presence of the microbank, the MC², which has been acting as a local fund manager, and fourth the technical assistance of ADAF and MITFUND, as well as SOCAPALM's technical guidance.

Market drive: There are two markets: the market for oil palm nuts and the market for oil palm. The production comes from three sources:

- a. cooperatives (village plantations);
- b. individual smallholders (rural farmers and civil servants who own plantations), and
- c. SOCAPALM agribusiness, which has its own plantations.

All members of the cooperatives have a contractual agreement to sell their produce to SOCAPALM, which has sufficient industrial processing capacity. However, some members sell a portion of their harvest to SOCAPALM but process some using artisanal processing units.

A second market is that for processed oil. This influences the project but does not affect it directly since the market is largely driven by the high demand for oil for direct consumption and for industrial use.

Making funds available: The second factor driving this model is the availability of long-term funding or financing. Given commercial banks have difficulty in providing long-term loans of more than three years, Afriland First Bank resorted to a guarantee backing from DEG for an eight-year long-term loan for farmers to lease the plantations from SOCAPALM. Afriland First Bank also has the role of providing refinancing to the MC² network if needed.

The crucial role of the microbank (MC²): The third factor has been the presence of MC² Nieta, which is a microbank, promoted by Afriland First Bank. This bank serves as the fund manager in tripartite arrangements between growers in the contractual agreement and SOCAPALM. Their role has been to ensure that proceeds from sales of oil palm nuts from the plantations are properly channelled to the growers and that record of payment to SOCAPALM is properly documented.

Technical assistance and other structures in backstopping the system: ADAF and MITFUND have the indispensable role of providing technical assistance to the MC² network and farmer cooperatives. As a first step, ADAF conducted a study to help determine the proper method of turnover of the plantation to the smallholders. Many smallholders were short of land, financial resources, and effective technical assistance to expand their operations, increase their productivity, income and living conditions, and there were no financial institutions interested in financing these operations. ADAF then facilitated a buyer-driven model and set up a mechanism of contract farming involving the various stakeholders introduced above. The viability of the model is dependent on the existence of a stable market capable of generating sufficient added value to be distributed among all players in the industry. This could be assured through SOCAPALM.

The application of the model involved the following:

- partitioning a portion of the large company plantation into small, individual productive plots of one to 30 hectares;
- a guaranteed purchase and minimum price for purchase of the commodities;
- appropriate funding and bank guarantees;
- a close-at-hand mentoring and monitoring system; and
- replanting of old trees and technical training on management technologies.

Results

The success and the future outlook of the Afriland-SOCAPALM VC financing model benefits from reviewing the results at the end of the project period and afterwards.

Results at end of loan agreement in 2015

Loans – CFA (Central African Franc) 1 500 million was lent for eight years to Afriland First Bank (2007 – 2014) at six percent interest (lower than market rate of 13,5 percent) and 100 percent was reimbursed to the bank.

Smallholders – 102 selected beneficiaries by a committee comprising traditional rulers and technical partners (SOCAPALM, MITFUND and MC²) with each farmer contributing five percent per plot.

Replanting – 1 500 hectares replanted (70 percent of agreed), amounting to CFA 713 million mobilised by the farmers through MC² to fund the replanting.

MC² and cooperatives – growing MC² membership, including 102 plantation beneficiaries and three smallholder cooperatives, all of which had some struggles but are well maintained with MITFUND and ADAF training and monitoring support.

Income generation – generation of additional monthly revenue per farmer of CFA 200 000 to help to meet family expenses and develop other income-generating activities such as poultry farming, small trade and new plantation growth.

Gender promotion – 16 women (out of 102 beneficiaries) own plantations generating additional revenue.

Present results and reservations

Loans – CFA 600 000 of new loans for replanting, partially overdue, but without repayment concerns due to the increased revenues when the replanted trees come into production.

MC² and cooperatives – have weakened owing to the lack of project supervisory support of MITFUND and the reduced income flows with a drop in oil palm sales by members, due in part to the decrease in production with the new plantings and a prolonged drop in oil palm prices. The perceived value of the cooperatives was not high by some partners.

Income generation – the noticeable reduction of price and production has affected the households and SOCAPALM resulting in reduced harvesting and care taken by some of the beneficiaries.

Interviews with all stakeholder groups and a review of information provided an understanding of the present and look to the future. Each had their own viewpoint and revealed points of discontent. However, **overall, the farmers, SOCAPALM and other stakeholders indicated that the model has worked and the farmers appreciated the increased income, land access and knowledge they have gained through the project.** Highlight issues of concern are presented below:

Purchase pricing – while the minimum agreed price of CFA 50 per kilogram remains constant, smallholders complain of higher prices of up to CFA 67 offered by the company to producers in other regions.

Cost of inputs – smallholders felt that seedling prices charged by the company are higher than they should be and are not available but that they are not allowed to buy from other sources.

Labour – labour costs charged by SOCAPALM are higher than when the farmers hire directly. However, when they use their own labour and hired labour, such as to harvest, the company may not collect the palms in a timely fashion, resulting in losses. SOCAPALM, on the other hand, feels that some of the 102 beneficiary farmers do not provide appropriate care for their plantations and, as such direct cleaning and harvesting is required by the company. Poor road infrastructure is noted by all as a constraint to harvest collection.

Replanting – 1 700 hectares have been planted, 900 fewer than in the original agreement, but a lack of funding and reduced interest hinders the process. Cash flow planning in the loan agreement did not adequately take into consideration reduced production and potential price drops, causing the net income after loan payments to reduce for the small plantation owners.

Cultural Issues – a few of the plantation recipients were said to have not fully understood their obligations, owing in part to a sense that the land was a gift of right to their tribal region.

Palm oil case study lessons learned

There are many lessons from the complex business model and partnership:

- The presence of a sustainable market of buyers (SOCAPALM), as off-taker of agricultural produce, is key to establishing a viable smallholder contract farming scheme.
- Innovative banks such as Afriland First Bank can provide long-term financing to smallholders with low risk and positive results under a well-designed VC financing model.
- Smallholders can become viable plantation owners and managers and generate a positive contract farming partnership with the agribusiness.
- Good communication and coordination among the partners are essential to sustaining the commitment of actors and ensuring operational efficiency.
- Conflict management and prevention among the parties must be clearly defined and organised from the outset of the project.
- Careful replication of the model is possible when there is the leadership and goodwill of the interested parties.
- Local intermediary financial organizations, such as MC², operate best when continued support and monitoring is available.

The case of Hévéa rubber plantations

Rubber is grown in hot, wet, climatic conditions and the rubber plantation region of HEVECAM suffers from difficult access to adequate community services beyond those offered on the company premises. The company directly hires many workers to operate the company plantation and the rubber processing industrial plant. Local communities in the region comprise many smallholders with small plantation plots of rubber, which is collected and sold to the company. The presence of a large, primarily foreign-owned company having a large lease concession is not always well accepted by its low-income neighbours prompting the foray into developing a land-lease transfer scheme of a small portion of the land.

HEVECAM Rubber Company worked with Afriland First Bank and other partners to develop the smallholder plantation transfer program, beginning in 2006. Much of the rubber plantation to be transferred to producers was too far away from the processing plant to be a priority interest to the company and it was hard to control losses from some of the neighbouring communities. In many ways, although a different commodity, the socio-economic context of the neighbouring smallholder communities had similarities with those involved in the SOCAPALM model.

The HEVECAM beneficiary target group who received plantation leases through the partnership and financing arrangements was more diverse. Some of the rubber plantation beneficiaries were neighbouring smallholders, some were plantation workers, some were from outside the community region, and others were families connected in some way and had more resources and received more plantation land. An important difference was that the rubber plantations were new and didn't require renewal, and hence could generate an income stream without a production drop occurring during the replanting renewal, as in the case of SOCAPALM.

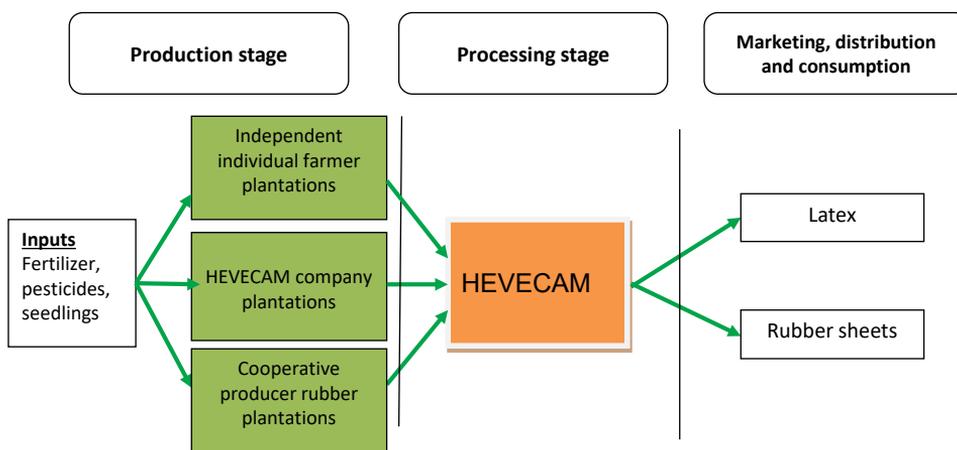
Rubber plantations in production are valuable and hence the size of the nearly 600 hectares of plantation plots transferred were much smaller than those of oil palm. The plots were of differing sizes, with some receiving five hectares, while cooperative smallholders received only two hectares each, and others more. A total of CFA 1,6 billion (USD 3.2 million) was invested in total in the land, which was financed by Afriland First Bank with an 80 percent guarantee by DEG. A loan of CFA 42 million (USD 75 000) was made to a cooperative of 37 smallholder members for 80 percent of their purchase cost for approximately 75 hectares of plantations. The loan was to be repaid over seven years. A constraining factor in the number of smallholders and their level of participation was the requirement to contribute 20 percent of the purchase cost. If this was not possible, it was possible apply to the Hévéa MC² for a loan, which many did.

Business model and financing

The partitioning of a portion of the HEVECAM plantation land to individuals with a guaranteed buy-sell agreement, a guaranteed purchase and minimum price for purchase of the commodities, appropriate funding and bank guarantees, and a close at hand mentoring and monitoring system, comprised the basic structure of the business model. This multi-stakeholder business model of the company and smallholders with financing from Afriland First Bank with a local Hévéa MC² mutual savings and credit microbank, a guarantee from DEG and capacity development support from ADAF and MITFUND, provided technical assistance similar to that of SOCAPALM. A local cooperative of rubber plantation producers was also formed with 37 smallholder plantation beneficiaries who were divided into four groups to receive five hectares of plantations per group, with each smallholder paying CFA 1 million and receiving a MC² loan of CFA 14 million.

As shown below, rubber processing is done only by HEVECAM, which produces on its own plantations, buys from some independent producers and from the cooperative producer organizations that were a part of the smallholder financing scheme.

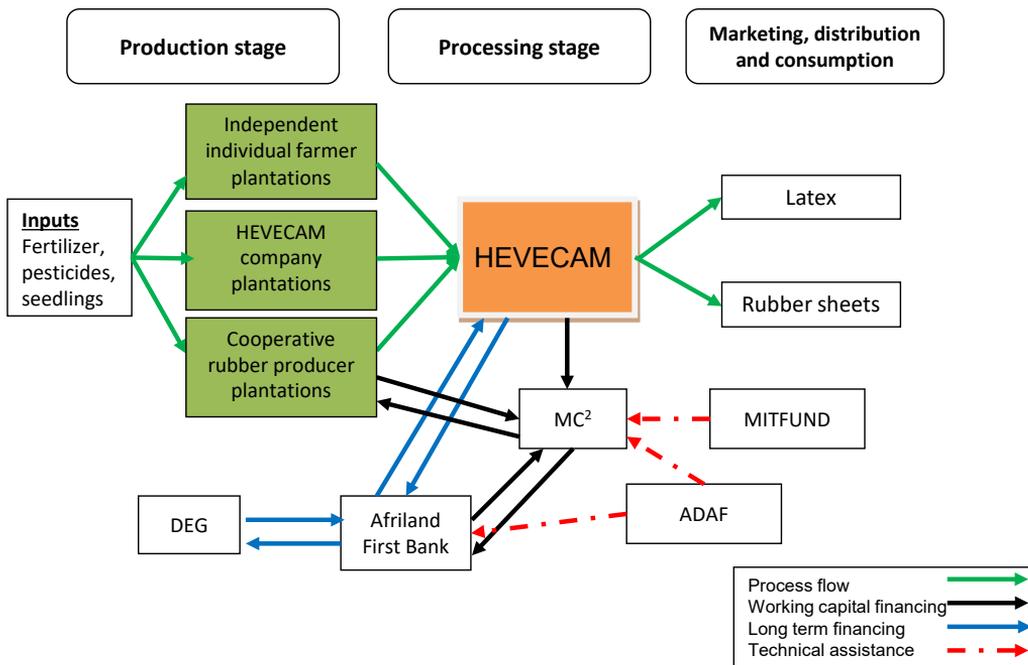
Figure 1.3: Value chain map of HEVECAM smallholder rubber plantations



The financing for the smallholder rubber plantations was designed in a similar fashion to that of the oil palm smallholders who needed both long-term land lease purchase financing as well as working capital, which was largely provided in kind.

As shown below, the stakeholder partners who collaborated in the financing were also similar, although in this case, the MC² already existed in the region. As with oil palm, the VC market is driven by the market, the availability of long-term financing, the presence of a microbank and the technical assistance.

Figure 1.4. HEVECAM smallholder rubber plantation finance model



Market drive and study: For rubber, the market for smallholder contract farmers is: a) a market for latex liquid, which commands a higher price and, b) a market for rubber cup lumps. Since artisanal processing of rubber is difficult, HEVECAM is the only market and commands a monopsony position of only one buyer.

Making funds available: The second factor driving this model is the availability of long-term funding or financing. Given commercial banks have difficulties in providing long terms loans of more than three years, Afriland First Bank resorted to a guaranteed backing from DEG for an eight-year long-term loan for farmers to lease the plantations from HEVECAM. Afriland First Bank also has the role of providing refinancing to the MC² network if needed.

Crucial role of the microbank (MC²). The third factor has been the presence of MC² Niete, a microbank promoted by Afriland First Bank. This bank serves as the fund manager in tripartite arrangements between growers in the contractual agreement and HEVECAM. Their role has been to ensure that proceeds from the sales of rubber from the plantations are properly channelled to the growers and that record of payment to HEVECAM is properly documented.

Technical assistance and other structures in backstopping the system: ADAF and MITFUND have the indispensable role of providing technical assistance to the MC² network and farmer cooperatives. The VC and VCF assessment and design was carried out by ADAF.

Results

The results of the land transfer and payment through rubber production delivery to HEVECAM have generally been satisfactory. After ten years, the model continues in the same fashion and has done since the outset. The smallholder rubber cooperative has grown from the original 37 beneficiary smallholders to 66 today, all of whom are producing as rubber outgrowers to sell to HEVECAM.



Harvested rubber © C. Miller

However, due to low rubber prices, loan payments have not kept up to date for over half of the smallholder plantation owners and for these, their original loan amount has grown due to interest and from the joint purchase of a tractor. Unlike oil palm produced for the domestic market and protected with tariffs, the price of rubber is determined by the global market, which entered into a multi-year price slump. With low prices, some were not content (or able) to afford the discounting of their loans from the company and found “creative” avenues to sell without making payments on their loans. However, with an upturn in price projections, neither the company nor the MC² is concerned that full recovery cannot be made easily.

In spite of the prices, there is interest by many smallholders to participate in a future program of plantation transfer. There is also interest for long-term financing through the same type of Afriland First Bank-MC² financing for the replanting of over 500 hectares of individual smallholder plantations in the region.

HEVECAM case study lessons learned

Financing – the VC financing arrangement is attractive to those involved and there is interest for replication by those within the rubber VC, but such additional financing for replication has not occurred.

Cash flow – planning for loan repayment is key, and when low prices overly reduce the revenues to the sellers, side-selling and non-repayment can occur. Hence, a somewhat adjustable repayment schedule, according to revenue, may be considered.

Roles and accountability – a strength and a weakness are that there are many partners and stakeholders involved in VC financing. This makes financing possible; otherwise, Afriland First Bank, for example, would not have provided the financing. But the involvement of multiples actors also increases costs, and clarity of roles and accountability are less clear.

Interest rate – when the interest rate is sufficiently low, six percent in this case, supported by the guarantee fund from DEG, it is possible to accommodate the help of technical assistance from ADAF and MITFUND in the model to provide training supervision and monitoring.

Minimum price guarantee - there is a need for a grower buffer guarantee to guard against major produce price falls with time. A minimum guarantee price and buffer pricing is important to keep the contract model working.

Overall lessons

The main challenges

- Large fluctuations in the price of the products, such as rubber, increase risks and significantly reduce repayment capacity and the repayment of credit.
- Land ownership and understanding is difficult, and smallholders may not understand how foreign-owned companies such as SOCAPALM and HEVECAM are required to rent the land.
- Dialogue and clarity of roles and relationships is challenging and often require strengthened partnerships with different stakeholders.
- Cohesion and compliance of the stakeholders to respect contractual commitments is an ongoing challenge.
- Mobilisation of adequate financial resources at a low cost and for a long period is needed to better support the needs of small producers and their organizations. This is difficult though, since local financing organizations are often weak, guarantees are difficult to access and the costs of operation in the plantation regions are high.
- Structuring and governance support are needed for rural producer organizations with long-term oversight.
- Strengthening and structuring grower cohesion through cooperatives to increase bargaining power and enable collective buying and selling to lower transaction costs is still a challenge where individual interests are strong.

Key lessons for success

- First and foremost, the smallholder plantation beneficiaries, despite some criticism, are thankful and appreciative of the plantation transfer. The companies, also with some concerns, have continued to be supportive, as have Afriland First Bank and others. Hence, sustainability and long-term collaboration can succeed due to the mutual interests of the stakeholders.
- Government and local-community support are not only important but necessary for the implementation of the model, especially in regards to land lease transfers and contractual agreements.
- The availability of financial resources is critical. The oil palm and rubber plantation models were dependent on a guarantee fund from an external lender (DEG), financing by Afriland First Bank and the financial partnership with the local MC's. However, the technical assistance from ADAF/MITFUND and the role of ADAF to implement the model were needed for the financing to be accepted by the financing agencies. Careful structuring of the financing and value chain arrangements can be complex due to the significant level of resources required and long-term commitments needed. A guarantee mechanism to reduce the risks is likely essential to securing adequate funding, and providing risk sharing for the recovery of loans.
- The projects must have strong profitability projections that allow different partners to meet their financial obligations. Careful cash flow projections and loan structuring are required, which can help avoid the problems created when the price of oil palm dropped, while production also dropped owing to the renewal of the plantations.
- The target population must be clearly identified, well selected, and be represented at the negotiating table. Even though well addressed in the design, some smallholders nevertheless felt excluded, causing a point of contention for some.

- Development and support from outside organizations are important to help build and support local institutions, such as the MC² and the cooperatives. Carefully defined mechanisms of capacity building, monitoring and fulfilled contractual commitments are needed, as is a long-term plan of guidance. In this respect, the ongoing support of ADAF to the MC²s has been noteworthy, but even so, the absence of MITFUND support after the project ended was noticed with some MC² institutions weakening in accounting and control practices. Hence, and the long-term, self-sustainability of local MC² institutions – if ADAF were to no longer be involved – is a general concern in considering similar programs.

Replication and issues to consider for adaptation in other contexts

There has been interest by various stakeholders to replicate the plantation outgrower model in Cameroon and in a neighbouring country. From a social standpoint, there are many countries facing concerns of how to support local communities while also recognising the economic importance of large company plantations.

The oil palm and rubber plantation models offer a solution, but only if there are willing stakeholders who are able to commit to a long-term effort of financing and coordination, as well as undertaking a careful assessment and structuring to appropriately adapt the model to the context.

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Questions for discussion

1. Is the model of land-lease transfer applicable to plantations in other countries? Can this model be considered for countries struggling with land ownership by large industries?
2. If another similar opportunity for replication of land transfer became available, would you recommend that Afriland First Bank provide financing? If so, what changes, if any, would you consider in the financing plan?
3. A need for long-term financing for plantation renewal was requested by smallholder plantation owners. How could Afriland First Bank, MC² and/or other partners provide such financing without undue risk?
4. For rubber, should Afriland First bank or another financial institution provide financing to replicate similar smallholder financing for another 500 to 1 000 hectares without a guarantee fund?
5. In replicating the model, what is an appropriate approach in structuring smallholder growers?

Table 1.2: Afriland First Bank smallholder plantation financing summary table

Name of case study innovation	Afriland First Bank smallholder plantation financing
Type of intervention	Smallholder land purchase, palm oil production and renovation with contract farming
Sector and region/country	Central region of Cameroon for SOCAPALM and south for HEVECAM
VC and VCF innovations	MC ² agro-clusters with four-partner facilitated financing
Key actors involved in the model	Industrial plantation companies, farmers cooperatives, MITFUND micro trust, MC ² microbank, Afriland First Bank, ADAF, DEG and the government
Start up date	2007
Business model	Participatory contract farming model
Financing <ul style="list-style-type: none"> Financial instruments used Sources of funds Interest rate Repayment rate 	<ul style="list-style-type: none"> Production and long-term VC financing and guarantees Bank, cooperative and personal financing Embedded production finance and eight percent subsidized long-term finance 100 percent in oil palm; less in rubber
Key results	<ul style="list-style-type: none"> The program stakeholders are satisfied with the model and results Incomes have risen for the smallholders Loan repayment has been very good in oil palm and acceptable in the rubber case The supporting roles in training and monitoring of NGOs ADAF and MITFUND are essential for success The quality of production and productivity has increased for the buyer industries
Constraint and limitations	<ul style="list-style-type: none"> The model is complex and the number of direct beneficiaries is low in relation to cost The presence of one buyer (monopsony) buyer for rubber and largely one buyer for oil palm The local financial MC² organizations are not strong
Lessons and recommendations <ul style="list-style-type: none"> Sustainability and replicability Socio-economic 	<ul style="list-style-type: none"> Sustainability for VC partners with a high level of continuity into the future Replication is possible if land is available for transfer and loan partners are interested The social and economic benefits for access to plantation ownership are significant and the model has positive demonstration effects

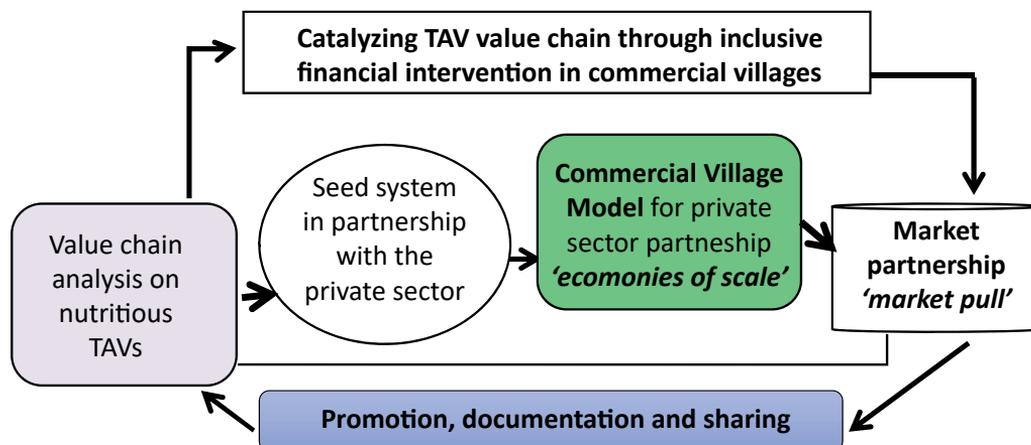
Annex 2: Catalyzing financial inclusion through smallholder farmers' collective marketing based on the Commercial Village Model

A case of traditional African vegetables (TAVs) in Kiambu County, Kenya developed by Mwangi S.K. and Mumbi K

Overview

Smallholders in Kenya constitute a population with high poverty levels, with 44 percent living below USD 1.25 per day and barely feeding itself. The agricultural sector also faces myriad challenges that include; low levels of commercialisation, limited access to markets, low-level collective marketing, a lack of tailor-made finance services, low participation of women and youth in VCs, weak farmer organizations, poor market infrastructures and low private sector participation in smallholder supply chains. "Catalyzing financial inclusion through smallholder farmers' collective marketing based on the Commercial Villages Model," was designed against the backdrop of emerging consumer demand for traditional African vegetables and has been supported by the Bill and Melinda Gates Foundation, Rockefeller Foundation, Gatsby (United Kingdom), and implemented by Farm Concern International in partnership with other development facilitators, research organizations and institutions, and government agencies. These commercialisation and market-access initiatives were aimed at empowering smallholder farmers (largely women) to produce commercially, access reliable markets and improve nutrition through increased home consumption. These initiatives have been promoted through a number of projects that focused on enhanced access to finance for traditional African vegetables to incentivise commercialisation, productivity enhancement and nutrition awareness (nutrition marketing) for increased use and consumption linkages and to improve health, nutrition and access to better incomes for vulnerable groups.

Figure 2.1: TAV commercialisation processes (from weed to cash crop)



Through the Commercial Villages Model, Farm Concern International focused on fostering value chain-wide business partnerships with buyers (informal buyers and supermarkets), partnership with input companies, finance institutions and other business development service providers, which has resulted in scaling up this intervention to over five million farmers in East and Southern Africa.

Commercial Villages for enhanced access to markets for TAVs

Catalysing the financial inclusion through smallholder farmers collective marketing initiative implemented in Kiambu has benefited immensely from continual upgrading of the Commercial Villages Model. The Commercial Villages Model is FCI's implementation approach to scale up: an innovative mass marketing system designed to have a high impact among large numbers of smallholders. The model is a multi-VC focus embedded with a real-time data-capture process for impact and evidence documentation. The goal of the Commercial Villages Model is, according to its website, "to systematically transform smallholders into profitable entrepreneurs, increase incomes, stimulate capital build up and equip farmers to build entrepreneurial capacity, progressively triggering break-off poverty cycles." The model has been tested for over 12 years in eight countries in partnership with 137 development organizations and private sector partners. The socio-economic implementation approach links villages with agribusiness partners for market access.



Passing on the baton

Passing on agricultural experience from the older generation to the future generations will ensure continuity and sustainability in agriculture

YOUTH & TAVs

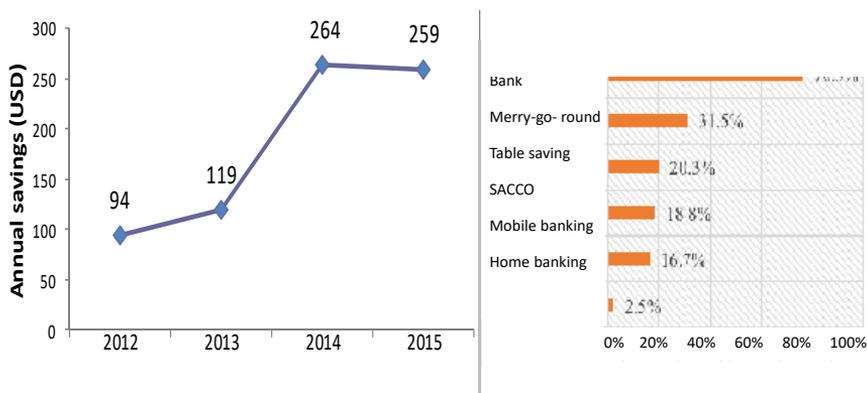
Increasingly youth are attracted to this value chain due to high frequency of payment that would be within end of first month and two months. The FCI approach is based on a multi-value chain allowing more income.

Youth and traditional vegetable production © S.K.Mwangi S.K. and K. Mumbi K

The Commercial Villages Model is intended catalyse VC wide enterprise development and employment creation for women, girls and youth, thereby accelerating financial inclusion. The Commercial Villages Model is the implementation partnership platform through which smallholder farmers, whose capacity has been built, will increase their resilience threshold through market-led climate smart solutions. Farm Concern International used the model to transform 10 273 smallholder farmers in 20 commercial villages producing traditional African vegetables into viable, competitive, profitable and sustainable trading blocs that have partnered with at least two major supermarkets, namely Uchumi Supermarket and Naivas Supermarket, among other buyers, as business partners rather than price takers.

Commercial Villages are supported with e-training resources and platforms based on local dialectics, illustrations and simplified teaching aids used to enhance understanding, catalyse the adoption and application of commercialisation skills, GAPs, technologies, business and negotiations skills, and post-harvest practices targeting multiple VCs. Commercial Villages are further supported by the digital platforms AFMA-X an e-Trading, information platforms and virtual aggregation, Commercial Villages' real-time data aggregation and auction trading that complement market access support to smallholders enhancing forward marketing, and the dissemination of market information gathered in various markets. The Commercial Villages Model was used in Kiambu County to enhance financial inclusion formation of the Commercial Villages savings and investment Schemes. The savings scheme ensures that farmers save ten percent of their income from TAVs sales and use saving for the collective purchase of inputs or technologies at a discounted rate. A study by Farm Concern International documented that most of the farmers (76,3 percent) are now saving in banks (Domestic Market Programme 2016).

Figure 2.2: Savings trends per farmer (USD) and place of saving for four years (2012-2015)



Emerging statistical evidence on commercialisation and market access has proven the model as an emerging vehicle for enterprise profitability and stabilised incomes. Evidence of impact has been documented on TAVs showing a 100 percent price increase, doubled yields through access to better technology, and a 20 percent reduction in input costs. Under the Domestic Markets Programme implemented in Kenya, income growth went from USD 141 (2011) to USD 2 870 (2015) in annual income per household recorded in the target Commercial Villages, including Commercial Villages under TAVs commercialisation. More details on the Commercial Villages Model documented evidence is available on the FCI website.

Market access and business partnerships between formal buyers and Commercial Villages members required a range of business support services such as transport, training as well as other transactional logistics, which lacked among the smallholders. FCI has created a range of partnership platforms between farmers and various private sector companies to leverage these services. Most of the supermarkets, like many formal markets, procure produce on a 30 to 60 day credit period, which smallholders could not sustain owing to their limited resources. In order to provide a sustainable approach that would establish smallholders in the marketplace, FCI has provided Market Access Financial Service (MacFin) to cushion farmers from the long credit period and settle transport bills, while the fund was gradually recovered from payment by supermarkets. This has further graduated into a social impact investment company, African Farms and Markets Limited, which provides finance for their market access as a TAV offtaker, thus enhancing access to higher-price buyers but cushioning the Commercial Villages' members from their long wait period before payment.

Why traditional African vegetables (TAVs): Nutri-dense cash crops?

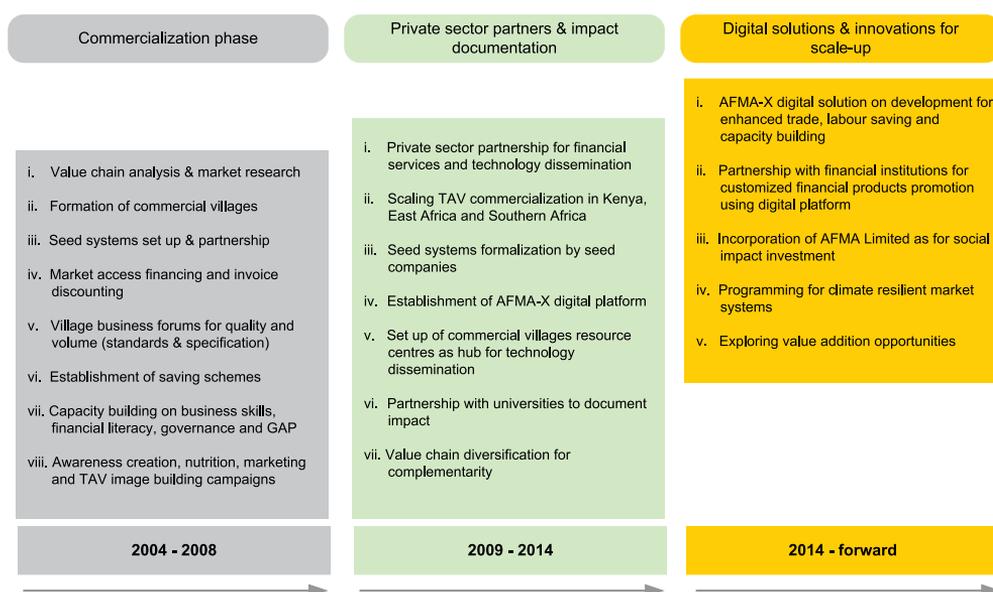
FCI has promoted more than five different types traditional African vegetables (TAVs) in Kiambu County and other parts of East and Southern Africa, and documented their several advantages. These TAVs are namely: amaranthus (amaranthus spp.), African nightshades (solanum scabrum/villosum/americanum), spider plant (cleome gynandra), cowpeas (vigna unguiculata) and figleaf gourd (cucurbita ficifolia). An impact assessment undertaken by FCI under a recently-closed horticulture project found that TAVs are strongly preferred by smallholders.

They have a low maturity period, the potential for multiple harvests per season and are highly nutritious. They generate income quickly, require only small levels of working capital and can be easily intercropped. These advantages make TAVs a very attractive commercial crop for women and youth, as well as useful for household consumption and nutrition.

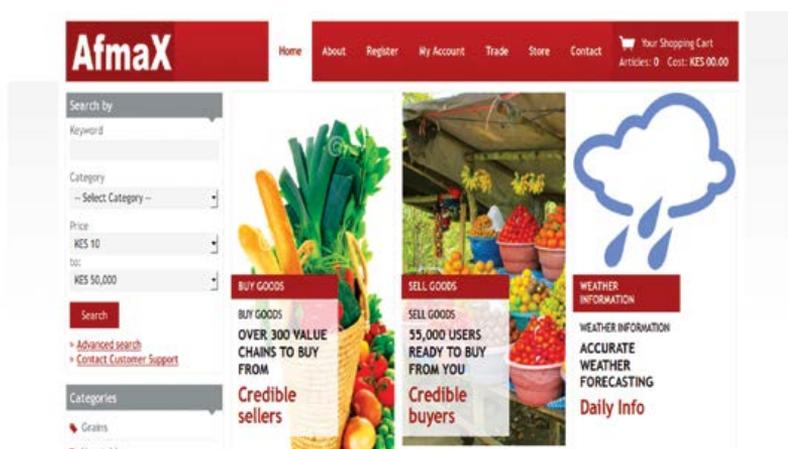
The Commercial Villages Model has been used to foster nutrition awareness on dietary diversification and the use of traditional African vegetables (TAVs). Over the years, FCI has invested heavily in changing consumer attitudes towards TAVs and thereby combat micronutrient deficiency. Increased awareness and consumption of TAVs has led to increased demand in rural areas of Kiambu County as well as in Kiambu County’s fast-growing urban population and Nairobi’s bustling Metropolitan area. FCI in partnership with government bodies, universities and research institutions has profiled TAVs as a nutrient rich food-based solution for malnutrition with the following important nutrients: beta carotene, a vitamin A precursor effective in boosting immunity; zinc- an essential mineral useful in maintaining a healthy digestive system; vitamin C which is a water soluble vitamin with antioxidant properties; iron, which is required to boost blood volume and the immune system; calcium for strengthening of bones and maintenance of bone density; folic acid, which reduces the risk of low birth-weight babies and birth defects during pregnancy; vitamin E, which is needed to boost immunity and maintain healthy skin and eyes; and antioxidant and phytonutrients that boost immunity and are important in the prevention of various types of cancers.

TAVs lacked reliable seed systems and thus investment was required by farmers to procure seed through a partnership with informal seed producers and companies. FCI facilitated the establishment of a credit scheme for farmers in the Commercial Villages programme for accessing TAV seeds through identified agro-dealers who advanced seed on credit to farmers. These agro-dealers benefited from seed as a new business line that had the fastest growing demand. Saving schemes within the Commercial Villages also served to advance low interest credit lines to farmers, with loan repayments that were recovered from sales of TAVs.

Figure 2.3: Catalysing financial inclusion through smallholder farmers’ collective marketing



AFMA-X for agri-services and financial inclusion



AFMA-X platform ©Farm Concern 2018

Smallholders in Kiambu are faced with limited access to reliable and customised finance services. To address the challenges of access to inputs, markets and financial services, FCI designed the African Farms and integrated Market Exchange (AFMA-X) platform. It is a virtual commodity, services- and produce-markets platform largely targeting rural women through mobile-based marketing, mobile-based business services provision to farmers, mobile money payment systems and a platform to establish trade partnerships through phones. The AFMA-X platform has been providing solutions for the improved commercialisation of smallholder farming, enhanced financial inclusion and increased household incomes through access to markets. AFMA-X was designed to position smallholder farmers as competitive players' in trade and financial systems through the use of farmer trade data as a means of de-risking the agricultural sector and highlighting the value and potential of smallholder farming systems. It is especially useful in raising the value of TAV products in Kiambu county.

FCI digitisation data for smallholders in Commercial Villages captures data including: biodata, landholdings, TAVs produced, amount of inputs used, harvest data, savings, loans, trade data (volume sold), market prices, type of farming enterprises, and weather information, among other data sets. AFMA-X has 79 003 smallholder farmers in active trade partnerships with 13 825 buyers with trade worth USD 88,8 million for assorted produce, including TAVs and inputs, and has been bought and sold through the platform in the last 38 months. FCI uses this data to create market partnerships and also for credit scoring with banks for smallholders, who are now more bankable than they ten years ago. FCI is further optimising AFMA-X to provide an online self-administered enterprise profitability analysis, virtual real time aggregation and trading of TAVs and other goods, and access to financial services by way of providing basic appraisals for financial institutions through real time data management/ records for farmers and other VC actors.

Agri-service providers are aggregated into a database and linked to a database for farmers. In this way, agri-service providers and farmers are able to partner in commercial transactions, which are made through basic feature phones with supplementary service data codes and mobile phone applications. This strategic intervention was designed by FCI to increase accessibility to services to TAV's producers and buyers at a reduced cost by enabling linkages through now widely-used mobile phone technologies. AFMA-X is anchored on the ever-growing mobile phone penetration rates in Kenya, which now stands at 88,1 percent (37.8) million people, with 67 percent owning smart phones (circa 2017).

Conclusion

- a. The power of numbers for market pull: Increasingly, participation in commodity trade requires players with capacity, skills and requisite muscles to be competitive in a ruthless and liberalised market environment. This market participation and scale is both for market entry and in sustaining the market, consistently meeting market requirements for delivery and quality. Commercial Villages has proven itself as the right platform for smallholders to build sustainable trade partnerships with produce offtakers and other private sector players owing to their ability to supply huge volumes in an organised way, and provide aggregation and transport services to buyers through collective action. The success of TAV commercialisation has been largely down to the large number of farmers in Commercial Villages and clusters of them with clear production schedules supported by innovative financial services and market-structured partnerships.
- b. The competitiveness of TAVs in the market place: Smallholder-based market development requires the increased identification of products presenting a high to intermediate demand growth offering the poor an opportunity to retain a market share. To sustain smallholders in business, any intervention should identify VCs offering smallholders a competitive advantage. The short harvest time of TAVs has served farmers well with lower costs of production, lower input use, smaller land sizes and minimal need equipment or machinery.



Women and TAVs

The dual role of the TAV's value chain as food and income attract women to this value chain. At the wholesale and retail level, women still dominate and data reveals that women's preference is based on foods with less weight, even when they are bulky, due to a quick maturity and short cooking time for the TAVs.

Women and traditional vegetable commercialisation ©Farm Concern 2018

- c. Private sector partnerships for enhanced commercialisation: Partnering with seed companies, agro dealers and financial institutions has contributed to scaling-up TAV initiatives, providing much-needed resources for technology dissemination through the establishment of demonstration plots and promotion of TAVs through the mass media.
- d. Saving schemes and market access financing: The commercialisation of TAVs requires financial services that didn't exist ten years ago and are still lacking in the markets. FCI market access financial services and Commercial Villages saving schemes have been proven to better support smallholders in creating creditworthiness and building collective action co-guaranteeing each other. Their improved access to reliable incomes has served to assure repayment by borrowers and also build enough reserves at the village level to buy smaller inputs such as seeds

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Questions for discussion

1. What are the key processes Farm Concern uses to develop the Commercial Villages Model when it expands to a new region?
2. The approach of Farm Concern has been developed and refined over a period of time. How has that contributed to its success? Should donors and NGO recipients be more supportive of this longer focused approach and move away from short-term, results-driven projects? If so, why?
3. Please map the VC flow of product, finance and TA support in a typical traditional African vegetable (TAV) in the Commercial Villages Model.
4. The African Farms and Market Exchange (AFMA-X) platform is multi-functional and obtains a great deal of data on the transactions and financing of the farmers and agribusinesses. How can AFMA-X be sustained and how can the data be used for credit scoring?
5. Commercial Villages is a market-based VC approach that is commercial and is built on creating a solid foundation of capacity of local groups and their VC partners. Are the conditions in place for this approach to develop in your region, and why? In addition, if you were a banker or MFI, what would your role be in participating and/or promoting it?

Table 2.1: Commercial Villages model summary table

Name of case study innovation	Catalysing financial inclusion through smallholder farmers' collective marketing based on the FCI Commercial Villages model
Type of intervention	Comprehensive and inclusive model of commercial value chain development
Sector and region/country	Vegetables in multiple regions of Kenya
VC and VCF innovations	A smallholder empowerment program with a multi-chain focus, including a combination of niche value chain development, collective marketing, technology development, savings and credit, an information platform and training
Key actors involved in the model	Smallholders, including youth, formal buyers and suppliers and Farm Concern as facilitator
Start up date	Farm Concern Commercial Villages programs starting in 2015 and evolving over time to perfect model
Business model	Facilitated, integrated producer driven model
Financing	
<ul style="list-style-type: none"> • Financial instruments used • Sources of funds • Interest rate • Repayment rate 	<ul style="list-style-type: none"> • Production loans and in-kind input financing, long-term VC financing, guarantees and savings • Bank, cooperative and personal financing • Varied rates • High, with payments discounted from sales and guaranteed by co-guarantors
Key results	<ul style="list-style-type: none"> • 10 273 smallholders in 20 Commercial Villages with traditional vegetable markets • Farm Concern model expansion in scope and VCs
Constraint and limitations	<ul style="list-style-type: none"> • Cost of developing new communities to become commercially profitable
Lessons and recommendations	
<ul style="list-style-type: none"> • Sustainability and replicability • Socio-economic 	<ul style="list-style-type: none"> • 13 years in eight countries and over 100 development partners, with continual expansion • Strong savings and income growth among smallholders in Commercial Villages

Annex 3: Tulaa integrated ICT solutions for value chains and financing

Case prepared by Calvin Miller and Hilary Miller-Wise, Tulaa

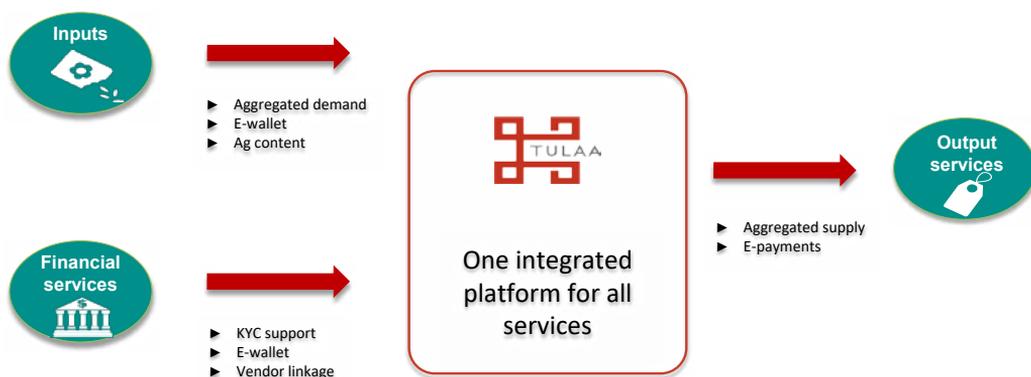
Tulaa

Tulaa Technology Services Limited (Tulaa) is a private company incorporated in Kenya in June 2017. It is a mobile commerce business that envisions becoming the leading virtual marketplace for rural buyers and sellers in Africa. It enables farmers to access inputs, finance, information and markets in a virtual marketplace. Tulaa offers mobile technology and mobile money solutions to enable farmers to save and borrow to purchase inputs, receive tailored agronomic advice and market their crops during time of harvest. It works to, according to its slogan, “build and deploy technology to level the playing field for buyers and sellers by lowering the cost and risk of transacting with smallholder farmers.” As depicted below, through the Tulaa platform, farmers can access financial services, discounted agricultural inputs, information and markets for their crops, all via their feature phone.

Figure 3.1: Integrated mobile platform

Tulaa mobile platform

Tulaa layers a mobile technology solution onto last mile networks to lower the cost and risk of transacting with smallholder farmers



Background and evolution

Tulaa was incubated inside Esoko and launched in Ghana in 2016 and Kenya in 2017. Esoko began in 2005 as a project in Ghana to deliver market prices via SMS and has grown to become a private pioneering social enterprise in the field of mobile agriculture. Tulaa quickly realised that farmers needed much more than price information, and so added weather alerts, crop advice, and began to link buyers with sellers. It also set up a call centre accessible to speakers of local languages. Today, Esoko Networks Holding Company (ESOKO), owned primarily by social impact investors, is active in Ghana and United Republic of Tanzania along with some services in Malawi and Burkina Faso. Its companies provide smallholder farmers with both access to information as well as inputs and finance through its digital marketplace, while facilitating business for input dealers, buyers and financial institutions. Over time it has grown to include a MIS technical platform and data management services, which allow organizations to collect and disseminate different types of information on people and markets via smart phones, tablets, the web, SMS and voice SMS.

Two distinct but complementary companies, Tulaa and Insyt, were created from Esoko's work to contribute to agricultural efficiency and transformation through mobile-based commerce, digital finance, information sharing and data management. Today, Tulaa is a private company of which Esoko is one of the shareholders, while Insyt is owned by Esoko.

The early business model of the Esoko network holding company was one of an m-commerce company (Tulaa) and a data collection and information company (Insyt). However, this has evolved with Tulaa as an independent mobile commerce company expanding in Kenya and incorporating their own data and information services and finance into their own platform in Kenya. Esoko has also evolved. Insyt is a mobile and web-based platform helping businesses and organizations with digital data systems and analytics as well as Digital Farm Systems, which offers online technical and market information, market linkages, mobile payments, financing and bundled services.

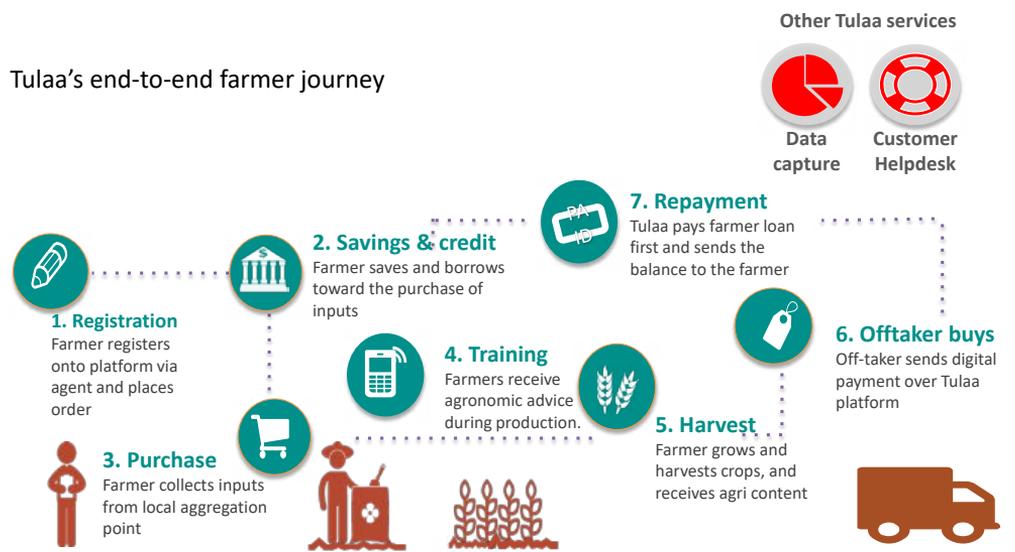
Business model and financing

Tulaa is a platform business linking farmers and agro enterprise customers. It works to address the key data, information, commerce and access to finance along the agricultural VC as shown below. Kenya is a big user of mobile technology for banking, with 71 percent of adults using mobile money in 2015. This has contributed to financial inclusion, yet 40 percent of Kenyans are financially excluded and most of these are in rural areas. The innovations, such as M-Shwari, which conducts a credit assessment using call data records and M-Pesa mobile transactions, don't work as well for rural customers whose usage of mobile phones is less frequent. Moreover, M-Shwari is a very expensive product, charging seven percent interest per month, compared with the commercial interest rate cap of 14 percent per annum – and inappropriately priced for longer term agricultural loans.

Tulaa's business model has also evolved during its relatively short time as a company. It receives commission earned from the sale of inputs and commodities on the platform. Originally it worked with financial institutions on the provision of financing and earned a small revenue share of the processing fees charged by these financial service partners (FSPs). While the fees earned from the FSPs did not provide Tulaa with a major revenue stream, access to finance on the platform was essential to increasing transactions. However, the margin for Tulaa was small and the added cost for the client was a noted concern prompting Tulaa to begin the direct provision of financing for the inputs purchased. This increased Tulaa's income, but also the level of risk. It also created a credit scoring system to manage the credit and marketing risks in an efficient and effective manner. Farmers can also lay away savings in a mobile wallet on the Tulaa platform. Even so, since the income levels of these customers are low, and they experience frequent economic shocks, their ability to save toward a savings set-aside goal is very limited.

As shown below, Tulaa is a multi-function mobile money and commerce approach that is built across the agricultural VC. It brings together input suppliers, financial institutions and farmers in a virtual marketplace, and thus works to digitally connect the key actors in the VCs. It allows smallholder farmers to lay-away and borrow money to purchase their inputs when they need them.

Figure 3.2: Farmer journey



Tulaa layers a mobile technology solution onto last mile networks to lower costs and risk. The Tulaa input wallet, as it is sometimes called, provides incentives to the VC actors in the following ways:

- **Input suppliers** – increased demand and sales, better visibility, digitalised information and closer customer contact for customer loyalty.
- **Small farmers** – easier access to inputs and offtake markets, guidance on input usage, and the ability to build a financial history.
- **Output commodity buyers** – reduced administration costs to coordinate and aggregate produce, less working capital pressure for input provision through the multi-party platform, improved produce due to higher-quality inputs and extension, and reduced cash handling risk via mobile money payments.
- **Mobile networks** – increased loyalty of mobile users and increased incomes for mobile agents.
- **Financial institutions** – access to new customers, improved lending due to access to client data and reduced loan diversion.
- **Non-government organizations and cooperatives** – a system to empower farmers with access to inputs and finance, Tulaa supports them to plan better and increase yields, and offers them a way to receive fast and secure payments via mobile money.

One of the major hurdles to facilitating access to finance for these customers is the low appetite for risk among the financial service providers. The interest rate cap in Kenya, for example, discourages them from lending to riskier agricultural customers. To unlock this financing, the bankers and other financial service providers require reliable risk-mitigation strategies. They have indicated interest in a credit score for their current and potential customers. With the Tulaa mobile platform, customer transactions of savings, borrowing, repayment, and buying and selling can be used to develop customer history and credit scores.

A critical element of the Tulaa model is engagement with the farmers and agribusinesses with whom it serves. This is done through both direct engagement at the field level and remotely. Tulaa uses field sales agents to sell products and services on the Tulaa marketplace to farmers. They are vital to building trust in the Tulaa brand, generating goodwill through the provision of reliable and accurate information, and actively listening to the clients. The agents (individuals or organizations) provide tailored advice to the farmers on input requirements and selection, technical knowledge and market information. Input sales and the crop sales are made through the Tulaa platform.

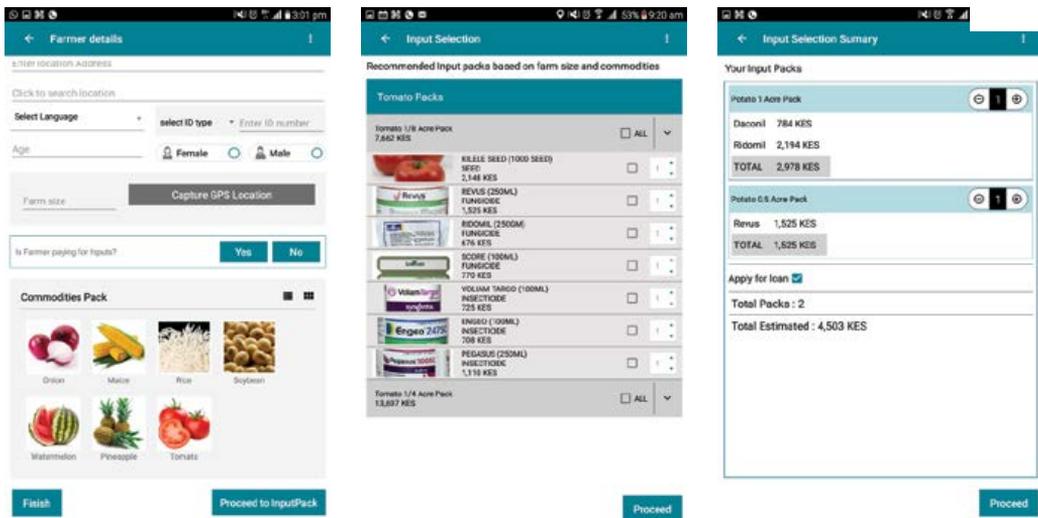
Since this was costly to put in place, support was given by various development agencies, such as the International Fund for Agricultural Development (IFAD), which provided financing to help build the capacity of the field agents. The Ministry of Agriculture, as well as other development agencies, assisted in the provision of technical content and extension messages.

How it works

As depicted below, Tulaa’s client services begin with farmers registering on the platform with field agents. Each farmer has a mobile wallet, which contains their profile, savings and loans, input requests and purchases, and sales. The suppliers and buyers also connect to the platform and can take advantage of the payment transactions as well as the communication channels with others on the platform.

Figure 3.3: How Tulaa works

How it works



The Tulaa platform allows the registered farmers, input suppliers and buyers to connect. The farmers pick their commodities and then pick the various related inputs they would like to buy. They can also see the costs of each input and their overall costs. The input suppliers can follow the flow of demand in order to manage their inventories to fulfil the orders.

Tulaa advisory support

Tulaa Advisors in Kenya are a vital link to the farmers. They work to provide reliable and accurate information, actively listen to the farmers, and put customer interests at the centre of every interaction. The key functions of their work are:

- **Market prices** – farmers can improve their revenues by being better informed for negotiating better prices, shipping to markets with higher prices and/or timing to sell at higher prices.
- **Weather forecasts** – timely forecasts help farmers plan planting and harvesting, fertilizer and pesticide use and improved efficiency of irrigation. A real-time farm weather app for agricultural weather and crop-specific agronomic information across the VC, called aWhere, is used for the weather content⁴.
- **Bids and offers** – farmer groups can aggregate and respond to buy offers from larger traders. In addition, traders can advertise to buy.
- **Crop production protocols** – cropping tips can be scheduled to be sent via SMS or voice messages to specific users at specific times in relation to their crop calendars.
- **Nutrition tips** – tips can be programmed to be sent via SMS or voice messages to specific users at specific times.
- **Promote and sell** approved Tulaa products and services to farmers, such as input savings layaways and input credit.
- **Provide technical support** for end users through effective troubleshooting and problem-solving.

Achieving sustainability through private and public partnerships

Tulaa, as well as Insyt, are private companies but they began as public- and donor-funded initiatives in Ghana and had more recent support from IFAD in Kenya. Without such initial ground-laying support, it can be reasoned that Tulaa would not have been developed.

One key to success is the forming of partnerships for mutual benefit. For example, the Kenya government extension services support Tulaa, with technical data and the Tulaa platform, provides an avenue for the extension program to reach more farmers. An important strategic relationship is that with the mobile telecom provider to provide the mobile network. Through the partnership, the companies have access to this major mobile network for its calls and SMS services at a reduced cost and the telecom has a platform for expansion and revenue generation more quickly at a lower cost.

⁴ <http://www.awhere.com/solutions/weather-for-agribusiness>

Financing

Tulaa also began by partnering with banks and MFIs, which allowed it to set up its systems. However, with time it was able to move beyond that arrangement. However, it found that:

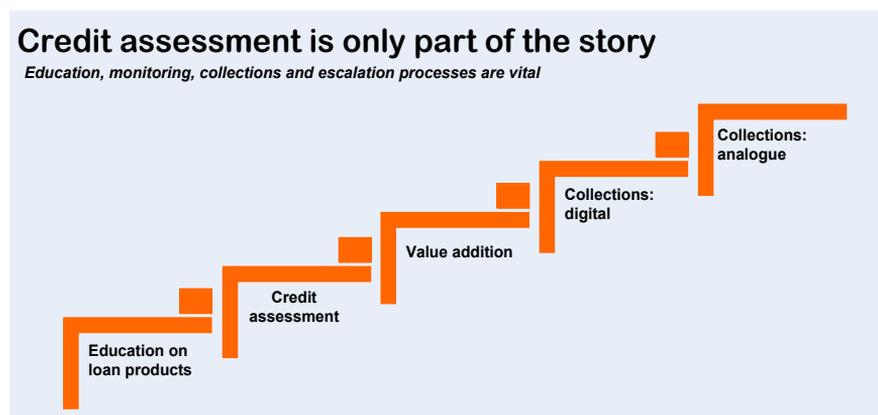
- loan processes were very analogue; in other words, manual processes were not appropriate for digital approaches;
- risk assessment was based on traditional cash flow assessment methods; for input financing a quick credit scoring approach was sufficient;
- loan processing times were very long, averaging three to four weeks, and
- the Fid partners' expectations were that Tulaa would provide credit-scored customers for them.

Hence, Tulaa began its own lending using a credit appraisal scoring system it had been refining, that led to a loan assessment in 15 minutes using alternative data and was able to approve a loan within 24 hours of a cash collateral payment. The key credit risk variables taken into consideration are:

- production: growing conditions, input access, equipment
- marketing: supply, demand, cost of production
- financial: ability to absorb the cost of capital
- political and Regulatory: price support, subsidies
- human: willingness to pay, other shocks, for example health

Even in Kenya where mobile applications are more common than in many other countries, the VC and credit processes must begin with education, as shown below. This also sets the stage for credit assessment. However, for both Tulaa and the recipient, a key to using the services and its continued use stems from the value addition that is perceived. For this, Tulaa adds technical and market information as well as the buying and selling platform and financing. When possible, transactions, including repayment is digital and money is paid between accounts digitally. However, the human touch remains an important part of the picture and partnering with producer organizations and other institutions allows Tulaa to be cost effective in its outreach.

Figure 3.4. Credit assessment



Results, lessons and looking ahead

Results

- Sustainability of the mobile platform remains challenging but is expected to be achieved through costing many of the services and a scaling up growth.
- A significant capital growth was achieved through a USD 627 000 investment from a strategic private partner, demonstrating the interest of commercial investors in the model and business strategy.
- The relatively new direct provision of financing of inputs has achieved a respectable portfolio-at-risk (PAR) of 3,7 percent as of April, 2019.
- The seasonal retention rate is 40 percent, although some farmers plant different crops from one season to another and therefore retention is likely much higher.
- Among the farmers, 41 percent had never taken a loan for agricultural inputs.
- The average age of borrowers is 41 years and 37 percent of the users are women, indicating that the platform is able to reach the mainstream, and age and are gender inclusive.
- Tulaa has been able to provide customer-based data to its users through the ICT platform and collaboration with government extension and other partners for data and technical information.

Lessons and looking ahead

- Tulaa's concept is to comprehensively solve multiple farmer bottlenecks and problems through the creation of end-to-end solutions.
- The ICT platform provides an effective base upon which other services can be added, and renders them more-readily available and less costly and risky to large and small actors across VCs and rural communities. This is evidenced by the growth in services being provided.
- Looking ahead, Tulaa would like to:
 - build a light free version of the online platform;
 - expand its agent network to expand capacity and growth;
 - promote the creation of a multi-stakeholder open-data knowledge plus platform whereby information could be put on a portal and used for training as well as to gain feedback, and
 - continue to refine its credit scoring model, including the addition of satellite infrared data for crop risk assessment and psychosomatic appraisal on borrowers' willingness to repay loans.
- Tulaa has continuously innovated and its business model and business proposition have continued to evolve. Learning, revisions and continual change can be expected and is an important part of a vibrant business, even more so in rapidly-evolving ICT environment.

Questions for analysis and discussion

What are three critical elements of success for Tulaa?

1. How is finance being channelled to the various VC actors through Tulaa? Can this financing be expanded in the future to other inputs such as small equipment and solar applications?
2. Explain how the m-commerce system works. What propositions could you make for possible improvement?
3. Could Tulaa or a similar model be introduced in your country? Why or why not and what would be needed to facilitate this?

References

Miller, C. 2019. Interview with Hilary Miller-Wise, Founder and CEO, Tulaa. [audio]. Nairobi, Kenya. [Cited 3 October 2019].

Table 3.1 Tulaa integrated ICT solutions for value chains and financing summary table

Name of case study innovation	Tulaa integrated ICT solutions for value chain and financing
Type of intervention	Comprehensive ICT mobile information and financing interventions for value chains and financing
Sector and region/country	Kenya
VC and VCF innovations	Mobile and ICT platform for agricultural inputs, marketing, technical support, financing facilitation and data management
Key actors involved in the model	Telecom mobile phone provider, input suppliers, buyers and individual and institutional equity investors
Start up date	Tulaa started in 2017; Esoko, the founder of the original concept, launched in 2008 in Ghana
Business model	IT led mobile platform for provision of services across the agricultural value chain
Services offered	<ul style="list-style-type: none"> • Mobile savings ahead for inputs • Money transfers • Mobile extension and information services • Market linkage digital platform for buying-selling • MIS and data management platform • GIS mapping
Financing	<ul style="list-style-type: none"> • Savings and payments through mobiles • Mobile money financing with m-wallets and sub-wallets • Mobile savings ahead for inputs • Incentives for on-time repayment
Key results	<ul style="list-style-type: none"> • Direct lending is relatively new and growing • Mobile wallets savings, loan and/or money transfers • 3.7 percent PAR • 37 percent women users and 41 percent first-time input borrowers
Constraint and limitations	<ul style="list-style-type: none"> • Lack of trust in information and information sources • Infrastructure and data connectivity coverage • Startup costs to create the systems and awareness
Lessons and recommendations	<ul style="list-style-type: none"> • Pilots allow early tech adopters to demonstrate value and support the concept • Knowing the user audience and ensuring content is personalized and relevant is critical • Training, awareness building and support are crucial for dissemination • A human interface between technology, content and the end user is necessary, including some handholding using lead farmers and local experts • For dissemination, targeting associations and agribusinesses is effective to reach farmers • Partnerships with commercial companies, including agribusinesses and telecoms

Annex 4: Informal value chain financing of huckleberries: the case of rural women in Cameroon

Case study developed by Simeon Tchatchoua Numbem, Calvin Miller, Paul Nchoji Nkwi and Justin Bomda

Background and setting

The Huckleberry crop (*Solanum Scrabum*) known locally as *njamajama*, is a vegetable that constitutes an important culinary, social and traditional function for the inhabitants of the NW Region of Cameroon, shown below. This vegetable must be present at all traditional and social gatherings. The NW region is part of the savannah grassland region of Cameroon with an average rainfall of between 800 to 1 200 mm per year. Rains are from mid-March to mid-October. The four to five months of dry season experience scorching weather, affected by dry, dusty Hamarttan northeast trade winds. Njamajama has thrived under these conditions for many generations to influence the dietary habits of the people and become a staple food in Cameroon. As a vegetable, njamajama is the basis for *Kati kati*, a local delicacy which has progressively gained popularity over the years and spread to urban areas.



Njamajama growing areas in northwestern Cameroon

©www.Self-studyhistory.com <http://www.all-about-cameroon.com/The-North-West-Region-of-Cameroon.html>

Njamajama grows to about 30 cm during the rainy season, but decreases in size to 10 to 15 cm during the dry season. During the dry season, when all other vegetables wither, njamajama can be grown at the bottom of humid valleys, needing only 21 days for production. Its growing speed and resilience give it prominence and popularity for the population's livelihoods and food security.

Njamajama is generally produced in a mixed cropping system during the rainy season, when it is planted on prepared beds mixed with other crops like beans, cabbages and Irish potatoes. After two weeks, when the herbal crops gain in strength, other crops like maize are planted. Njamajama is harvested three weeks later and the harvest may continue over five three-week cycles, even long after maize and other crops have been harvested. It is this sprouting and re-growth potential of the crop, with much resilience, that has enabled njamajama to evolve from a subsistence to a more market-oriented crop.

From subsistence to market-system production of *njamajama*

With growing urbanisation, but further triggered by the structural adjustment plan of the mid-1980s to the late 1990s, there was a rural exodus of families. The coffee economy that was the backbone of the economy of the

NW province collapsed, increasing poverty. Women increased the cultivation of food crops to feed themselves and the growing urban population. Among these food crops, njamajama took prominence because of its intrinsic beneficial biological characteristics and demand for njamajama grew, not only in the big towns of the NW region, but also in larger cities like Douala, Yaoundé and others in more forested parts of Cameroon with a growing population of people coming from the NW region and grassland regions. Many factors have contributed to the transition of njamajama from a subsistence crop to a market-oriented crop, including:

- a) The improvement in the transport system: Many private companies began the overnight transportation passengers and goods between Bamenda, which is the entry city into the NW region and the major cities in Cameroon. This made it possible for freshly-harvested njamajama to be transported overnight from various production basins through Bamenda – the collection centre – to large cities like Douala, Yaoundé, Buea, Limbe and Kumba. Dried and frozen njamajama is also exported to Cameroonians living abroad, although in limited quantities.
- b) The use of irrigation: In the lowland basins of Babanki and Ndop and plains of Bamessing, irrigation systems have been developed. Farmers tap into the abundant waters in the foothills of the mountains. This gravity irrigation system permits the intensive cultivation of njamajama, among other food crops during the dry season.
- c) The improvement of the production system: With increasing demand, growers, mostly women, found it necessary produce two crops per year, and increased productivity using cow and chicken manure.
- d) Improved crop mixed cropping systems: The cropping systems of the farmers have also changed over time to adapt to market demand. While farmers continue to promote mixed cropping, the cropping systems have changed. During the dry seasons, farmers grow cabbages, beans and potatoes at the edges of the beds to avoid light competition with the njamajama, and leeks directly in the beds as these crops grow tall and thin and provide less competition to njamajama.
- e) Organization of an informal Njamajama value chain system and financing: With the loss of other income sources from their husbands and the growing demand for njamajama, the women developed an informal trust network of growers and sellers from their farms to the cities through a system of VC linkages and informal VC financing.

The *Njamajama* value chain

The organization of the VC began with individual growers creating a trust-based agreement with collectors of their produce, who arranged to buy it at their farmgate with delayed payment. The growers gave their produce to the collectors, after agreeing a price per 50 or 100 kg bag, who then sold the njamajama directly to local retailers or who organised for transporters to take the goods to the cities without paying. The marketers in the cities planned to receive the njamajama and sell it and/or distribute it to other retailers.



Mixed cropping of njamajama and cabbage ©S. Numbem

After the product is sold, the money is sent back through the same chain to pay for transport, collectors and finally the growers. The system required no initial capital for the market collectors and sellers of the vegetable.

A key issue for the success of the multiple partnerships is the trust that is transmitted throughout the VC from the growers to the aggregators, transporters and marketers⁵. The system has endured over decades and has helped to expand njamajama production and increase productivity. However, with increasing new entries into the system, trust has decreased and a cash-payment system has developed alongside the non-capital system.

Value chain activities

Women grow njamajama using irrigation, fertilizer and insecticide and sell at farmgate the same day it is harvested. The collectors, aggregators or suppliers buy it from farms as soon as it is harvested and transport it to the market collection centre in Bamenda, the nearest city. Then they either sell at Bamenda market or transport it, by bus or other forms of transport, overnight to distant city markets such as Yaoundé and Douala, on average 300km away. It is transported the same evening to these various destinations, so that crops harvested at 4pm arrive at the city markets before 7am the following day to maintain freshness. Little or no processing taking place as there are no cold storage or drying facilities, so rapid delivery is essential.

The market demand created by the organization of the VC developed for njamajama has triggered other business services and created numerous jobs.

→ **Irrigation:** An important improvement in the year-round production of this precious vegetable is the fortuitous development of an elaborately simple irrigation system. Most njamajama growing areas are surrounded by hills formed from volcanic flows. This has trapped numerous small waterfalls and watershed catchments that flow off the hills, even during dry seasons. Farmers have dug catchment dams to trap the water, which is channelled downhill with pipes and distributed with sprinklers pressured by gravity. These low-cost irrigation systems assure year-round vegetable production.



Low-cost irrigation ©S. Numbem

→ **Transportation:** Transport services have greatly developed and become specialised. First, there is transport from farmgates to Bamenda city market and to bus stations. This service is performed by bush-taxis and motorcycles. The second and most important type of transportation services is undertaken by coaches, which can transport, on average 30-50 bags of 100kg. In Yaoundé, for example, an average of 150-200 bags arrives every day.

→ **Storage facilitation:** Bus stations have developed temporary storage and facilitation spaces especially for the njamajama. It comes from farms to be handled, registered, labelled and dispatched to various cities.

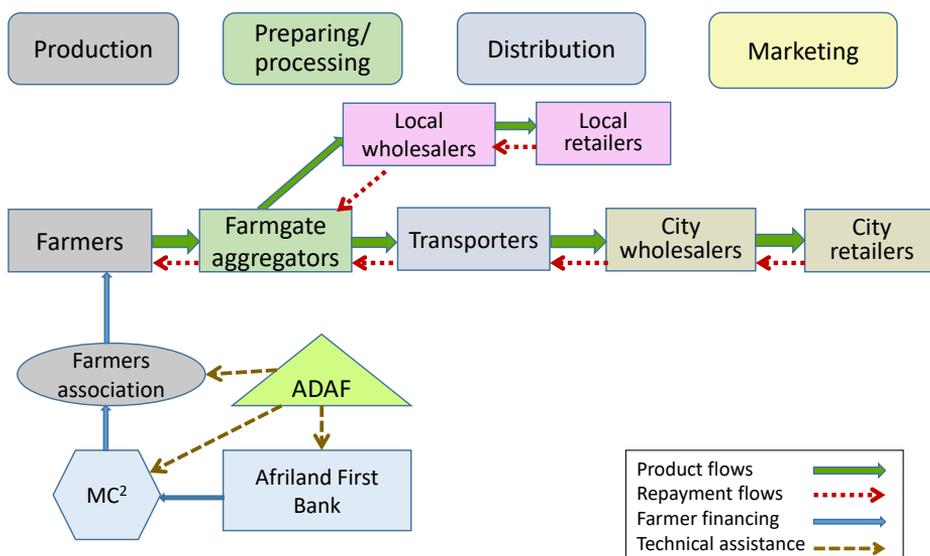
⁵ Coincidentally or not, it is also in this region of Cameroon that the cooperative finance movement started in 1964.

Marketing and distribution to the final consumer

Njamajama that reaches the regional or city markets is received by designated wholesalers or groups of wholesalers. These wholesalers represent groups of friends, business associates or village growers' associations that sent the vegetable. The arrival of njamajama is eagerly awaited, with tracking through the use of cell phones to allow for its quick distribution to their various retailer members, who sell the product to households or restaurants throughout the city. Households and restaurants are dependent on the vegetable to prepare the highly-cherished Cameroonian vegetable and chicken sauce, called Kati kati, which is eaten with corn fufu, a common local dish.

The VC map and the flow of funds are highlighted below. While the product flows from the farm to the market, the payment system follows the same pattern in the opposite direction.

Figure 4.1: Njamajama value chain map



Value chain financing

There are two types of financial flows in the njamajama VC that interact to keep the system boisterous, dynamic and unique. These systems have evolved over time to adapt to market demands, and social and cultural circumstances. There is a non-formal flow of funds within the VC and a formal flow of funds in to some of those involved in the VC.

Informal financial flows

- Cash-strapped women in villages devised a way of giving out their agricultural produce to a collector without initial payments, but with a price agreed with collectors, who would transport njamajama to cities to be sold, before returning to pay the farmers. This system was limited to the big cities and towns of Cameroon's NW region, but expanded to bigger cities with the advent of the improved over-night coach system.

In this system, goods or agricultural produce flows from producers to the other actors and to sellers in the cities. City wholesalers and retailers sell the products and money flows backwards to pay transporters, aggregators and finally producers. The system is based on trust, built over years through family, friendly or village relationships. This financial system accounts today for about 60 percent of the financial transactions. Over time, this system was partially undermined by the new and limitless entries into the market, and as there are no entry barriers many producers and actors along the VC are demanding cash payments: this is giving way to the classic cash-and-carry system that characterises informal markets.

Formal financing to the value chain partners

- The increased intensification of production systems, owing to the higher demands for njamajama, has led individual and women farmers associations to seek financing from formal financial institutions. This is done through the various MC² rural microbanks in the region. These rural banks receive financing from Afriland First Bank, for onward lending to farmer associations. Upon sale of agricultural products, reimbursements are made to the microbanks to repay Afriland First Bank. ADAF, a national NGO, backstops the microbanks by providing technical assistance such as soft management training skills, MIS, auditing and supervising to ensure whole system sustainability.

Results and impact

Evidence points to the importance of njamajama in contributing between 60-70 percent of the value of all crops in the mixed-cropping system on land parcels under cultivation. This high-value crop can be planted year-round with irrigation, and can be produced for four to five months per cycle, long after other crops like cabbages, beans and even maize have been harvested.

Table 4.1: Huckleberry value addition per VC segment

Value chain stage	Costs and mark-ups	Sales	Value per hectare
Production	Production costs on a typical size of 3 000 m ² (0.3 hectares) plot of land = CFA 40 000 Harvest of njamajama = 75 (five harvest cycles of 15 bags each)	Sales of CFA 6 000-8 000/ bag at farm gate price = FCFA 450 000-600 000 per season/3 000m ² (USD 9 000 - 1010)	250 bags/ha = CFA 1 500 000 - 2 000 000 (USD 2 727 -3 636)
Transport and marketing	Transport from farm gate by collectors/aggregators = CFA 550-600/bag to regional markets; then transported from regional markets to distant city markets at CFA 1 000 -1 500/bag by coaches	In cities wholesalers receive and sell to retailers for CFA	CFA 2 750 000-3 750 000 per hectare (USD 5 000-6 818) Sales value to production value =182-188 percent
Retailing	Retailers pay wholesalers and then sell to customers	Retailers sell to consumers at FCFA 18 000-25 000 /bag depending on where sold and to whom	CFA 4 500 000-6 250 000/ha (USD 8 182-11 364) Sales value to production value = 300 percent – 417 percent but with 40 percent losses, real value addition is about 165 percent
Consumers	Households consumers and restaurants buy to eat or sell	Households buy at CFA 1 000/0.5 kg (USD 1,82) Restaurants buy a 100 kg bag and with loss of 40 percent, prepare about 180 dishes of kati kati to sell at CFA 600-700/dish equivalent to CFA 90 000 (USD 213)/bag	250 bags at CFA 90 000 = 22 500 000/ha (USD 40 900/ha) Final consumer value to producer value =1 285 percent value addition, without considering other condiments added and losses.

In monetary terms, an investment of USD 1 brings USD 6 in value addition from production to consumption. The ploughing back of earnings is gradually improving the quality of production and technology, in irrigation for example, and the value is becoming even more valuable.

Impact on women households

Women organise and dominate the njamajama VC contributing about 90 percent of the processes, from production to market distribution to the final consumers. This has an important effect on their households and rural communities. Women have claimed that the cultivation of njamajama has greatly improved their lives and helped them address the challenges of school fees and their children’s health. The cultivation of njamajama also helps many women to engage in savings that serve as an insurance against rainy days.

Impact on diet

The njamajama VC typifies a demand-driven system. An important performance indicator of this healthy vegetable is its culinary effect on the final consumers. In many classic and road-side restaurants in big cities, Kati kati, featuring njamajama, is a delicacy. The growing popularity of the dish, eaten with chicken and red palm oil, is fuelling demand, bringing the crop to prominence and greater recognition.

Microbank support

Like all good performing market commodities, njamajama has attracted the attention of financial institutions, especially the rural MC² microfinance bank network. In many areas of intensive cultivation, the MC² in Njinikom, Ndop and Bali and Babanki, have been providing working capital and offering savings products to individuals and farmer organizations. However, given the low level of financing of agriculture overall, more remains to be done.

Challenges in the system

Market system, remains unstructured

Even though demand is high, the market system remains largely unstructured, at least informally, and 'cash and carry' market traders are beginning to disrupt the traditional system with its payment after the final sale. At the production stage of the VC, farmers have become more specialised and more organised and work together to buy and stock chicken droppings and other compost manure, and to invest in irrigation equipment and systems to ensure higher productivity. The distribution market has no entry barrier and this often causes price drops in the markets, consequently thinning out profit margins, especially for rural growers.

Structural organization of actors

Another significant constraint on the VC is the unstructured and poor organization of the actors. While producers are more organised, collectors, aggregators and sellers are poorly organised. In Yaoundé and Douala for example, there are seller organizations but the enforcement of rules is weak and ineffective, keeping the actors in the informal realms of economic development, with little possibility to attract financing from financial institutions.

Land constraints for expansion

High demand for njamajama is posing constraints on the availability of land for expansion. While cultivation is becoming intensive, the fallow period for most land is less than one year. Land scarcity and the attraction for new entry farmers have increased the annual price of land rentals to about CFA 100 000 (USD 160) per hectare.

Transportation and handling systems

Farm to market transport and city to city transportation systems are a considerable constraint to the promotion of this VC. Handling and transportation can contribute an estimated 30 percent to post-harvest loss. In farms, njamajama is stuffed into nylon rice bags of roughly 100kg. These bags are tossed into bush taxis or tied on to motorcycles to be taken to Bamenda city market or bus stations. Packing the vegetable on to buses is not ideal and upon arrival in the cities, they are loaded into taxis or other forms of local transport to be taken to retailers and then fractioned into smaller portions for sale. The rough bagging and handling processes lead to quality degradation at the final destination.



Njamajama © C. Miller

Lessons learnt

Innovation

The creative use of traditional, social networks complemented by new technologies can trigger success, including:

- The trust payment system originated with and has been driven by women farmers affected by poverty and seeking for a sustainable livelihood. It shows that a workable system does not necessarily depend on cash payments; through trust-built business relationships, these smallholder women were able to establish a new line of business without upfront financing using relationships rather than funds.
- Women's empowerment borne through necessity using collective coordination has created more than 2 000 jobs through the njamajama VC, around 90 percent of which have gone to women. As in much of Africa, improving the traditional food system can not only boost livelihoods, but promote and enhance women employment and entrepreneurship.
- The social trigger from a culinary demand for njamajama constituted a driving force for the growth in demand, and VC demand was augmented by the urbanisation of many rural people moving into cities. The social and tradition value of the commodity became a market pull for increasing production and productivity and fomenting rural economic development. Though seemingly small, the impact on product demand is great.
- The use of information and communication technology helped make the VC dynamic. The mobile phone, in particular has facilitated communication connectivity and the ability to transfer money quickly and accurately, even in remote villages of vegetable growers.

Role of BDS in value chain promotion

Business development services have been created to facilitate activities along the value chain, including:

- The supply of nylon bags, which was addressed by a growing number of people now specialised in supplying to njamajama growers and aggregators. Traders use motorcycles to move round the villages to meet orders to supply them.
- The farm-to-markets transport system is developing as there are specialised bush-taxis that have modified the structural frames of their vehicles to adapt to the poor road conditions to carry bags of vegetable from the farms to the markets and bus stations.
- The advent of the overnight bus systems was important to help farmers ship the fresh vegetable to the markets in less than 12 hours. This has increased njamajama quality, added greater value and reduced post-harvest losses while generating business income for the bus companies. Increasingly, small trucks of five-tonnes are also being used during periods of high demand to transport the product to the city markets.

Financing

- Rural financial institutions have facilitated growth through the provision of financing for technologies and services. While most of the financing of the VC has been from personal capital, the use of services from financial institutions has increased, especially the MC² network as market visibility improves, giving the women smallholders greater willingness to tap into the growing agribusiness developments. Apart from formal financial institutions, there is a growing number of informal savings and loans associations that also offer financial services to actors along the njamajama VC.

- Afriland First Bank has provided refinancing to the MC² network that on-lend to individual farmers and farmer organizations, thus enabling farmers to go for medium to long term loans for between 18 and 36 months to build personal assets such as houses, irrigation systems, pumps and motorcycles.
- Internal value chain financing has been a model of success. Without making use of both self-financing and delayed-payment financing among actors along the VC, the njamajama VC would not have developed. This finance remains the key to its success.

Technical assistance

- ADAF technical support backstopping the MC² microbanks and their support to individual farmers and farmer organizations through training in business development skills has helped improve the capacity of those in the VC.

Recommendations

With a growing population and increasing urbanisation, the future for njamajama looks bright. Demand will increase and there is an increasing tendency to export to Cameroonian communities in diaspora. Recommendations for improvements include:

- Increased use of compost manure: Growers are conscious of the adverse effects that the heavy use of mineral fertilizers has on the long-term sustainability of their soils. The use of animal manures and composting, meanwhile, can cut input costs of production.
- Researching for improved varieties: As demand increases, there is a need for the government to intervene and recognise njamajama as a food security commodity worthy of greater research from the Institute for Agronomic Research and Development (IRAD). Further scientific research on this vegetable may improve the variety, especially its resilience to harsh climatic conditions.
- Improving post-harvest handling methods: There is a pressing need for improvements in handling methods to improve transportation and reduce post-harvest losses. Transport losses of 10 to 15 percent have been reported by sellers in big cities, especially during the raining seasons, when goods are transported in wet conditions. Further research is needed to determine the appropriate types of bags or crates to use to better handle and transport the vegetable.
- Conservation methods (drying): There are no conservation measures being used locally to help transform or preserve excess production. While drying may be an important option, it is practiced only on a limited scale on exports to Europe and the United States of America.
- Improving payment systems: Affordable mobile money systems are important to improve financial inclusion and the use of enhanced payment systems with money transfers and mobile money. While mobile money is becoming quicker and more versatile, many rural farmers cannot afford android mobile phones and using mobile money is still prohibitively expensive for most farmers.
- Organising growers and sellers into more structured organizations: Reorganising individual actors at the production, distribution and marketing stages of the VC will improve the quality of the vegetable. Without defined structures, it is difficult for laws to be enforced and regulations respected. Governance within farmer organizations is also important for discipline and ensures that activities run smoothly.

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Questions for discussion

1. Women producers were the drivers in organising the njamajama VC. What were the key elements to their success and how can these elements be replicated?
2. Are there traditional foods that can trigger and drive along a culinary VC in other countries like in this VC?
3. How important are cultural values in defining and sustaining market systems through trust and confidence in members in other VCs?
4. How large or important should a commodity become before the government and other development agencies prioritise it for research and development?
5. In replicating the model, what is an appropriate approach in structuring the smallholder growers?

Table 4.2: Huckleberry informal value chain summary table

Name of case study innovation	Informal value chain financing of huckleberries: The case of rural women in Cameroon.
Type of intervention	Rural women trigger a dynamic marketing process of a vegetable delicacy through a delayed-payment approach as a means to generating a market.
Sector and region/country	NW region of Cameroon, with links to major cities.
VC and VCF innovations	<ul style="list-style-type: none"> • Market triggered value chain, with two-pronged financing: no cash down sales and classic financing with support from Microfinance Institutions. • Resilience of a local population to seek alternative means of livelihood through risk taking market ventures.
Key actors involved in the model	<ul style="list-style-type: none"> • Women farmers and association and other VC actors. • MC² MFI, and Afriland First Bank for financing. • ADAF for technical assistance.
Start date	1994, with the advent of the structural adjustment programmes and the coffee collapse when farmers were forced to look for alternative sources of livelihood.
Business model	Women-producer driven agriculture marketing model. Women's association, internal VC financing arrangements and high market demand for the product are key elements.
Financing <ul style="list-style-type: none"> • Financing instruments used • Source(s) of funds • Interest rate 	<ul style="list-style-type: none"> • Internal VC financing for farm-to-market and rural MFIs financing for investments. • Self-financing for VC, and MC² for investments. • Embedded VC finance and 8 percent subsidized long-term finance from MC².
Key results	<ul style="list-style-type: none"> • High production and productivity and bright perspectives in the vegetable agriculture subsector, with little use of chemical fertilizers. • Women-driven value chain triggered by necessity to satisfy livelihood needs. • Incomes have risen for the rural women and other actors as evident with value addition. • An increased development of external actors (BDS) Business development services, such as development of irrigation systems, improvement in transportation. • Social culinary effect driving demand in cities.
Constraint and limitations	<ul style="list-style-type: none"> • The model is increasingly complex with the number of direct beneficiaries affected by the lack entry barriers into the business. • No entry barrier in expanding production leading to land scarcity, resorting to hikes in land rents that are reducing benefits. • As yet little support from government technical services and other international NGOs to improve product quality and conservation and handling. • Transportation and handling still remain archaic, with high post-harvest losses.
Lessons and recommendations <ul style="list-style-type: none"> • Sustainability and replicability • Socio-economic 	<ul style="list-style-type: none"> • Sustainability for VC partners with high level of continuity into the future as the culinary social effect remains strong. • Replication is possible if land is available where social and cultural values are strong and the business environment is favourable. • The social and economic benefits for access to land and improved organic inputs will increase the model positively. • Better organization of actors all along the value chain is needed to improve product quality and productivity.



Farm labourers ©AFRACA

VI. Short case studies

VI. Short case studies

Annex 5: MADE agribusiness development value chain model

Prepared by Calvin Miller with Joseph Apeeliga

Overview and background

Northern Ghana is home to many low-income small agricultural-based households. The low productivity of their cultivation practices on small plots of land and without access to higher-income markets makes them particularly vulnerable to increased poverty. The four-year MADE market development programme for Northern Ghana, funded by the United Kingdom Department for International Development (DFID) was designed to help promote growth and improve the livelihoods and incomes of an estimated 78 000 poor women and men farmers and small-scale entrepreneurs in the Northern Savana Ecological Zone.

MADE uses a business-driven agricultural value chain approach on selected sectors whose scope and potential for improvement, and impact on the poor, especially women, shows high potential for impact. The aim of MADE is to increase yields by six percent per year in these sectors. The program's Making Markets Work for the Poor (M4P) only supports financially self-sustainable initiatives that offer social returns of a scalable nature. M4P facilitates change brought about by capable actors from within the system. In practice, this approach means supporting the market driver agribusinesses to lead the changes needed to raise productivity and incomes to all involved in the VCs, and to incorporate the many smallholders currently not into connected, higher productivity VCs.

MADE is a time-bound program and needs to ensure that the results of its efforts are likely to be sustained when it finishes. Hence, it is a facilitator, connecting the private and public sectors, agribusiness and service providers across the VCs of the targeted sectors. The program therefore is not associated with individual enterprises or direct VC activities but rather working to address the bottlenecks in the VC and the overall outcomes. In order to stimulate transformative change in the targeted sectors, MADE works across a range of subject areas including irrigation, gender, BDS, access to finance, climate change and resilience, communications and knowledge management. As the four-year, program comes to an end, indications of the initial results and impact can be observed.

Business model and financing

Although MADE works in the distinct sectors of rice, groundnut, onion and vegetables, its market-driven facilitated buyer-driven VC development is similar among them. It provides a platform for market actors in the VCs to collaborate, targeting micro, small and medium agro enterprises that do or could play a crucial role in VC development and leadership. It facilitates investment by major buyers, suppliers and aggregators to develop local supply. This involves dealing with both demand and supply constraints. The demand for improved agri-inputs, such as certified or improved seeds, fertilizer and agro-chemicals, is underdeveloped due to both a lack of understanding and a lack of financing.

Owing to lack of knowledge, the demand for modern agri-inputs (such as seeds or fertilizer) is underdeveloped in many parts of northern Ghana since the smallholders lack experience in using improved inputs and lack financing to buy them.

Furthermore, without functional farmer organizations, it was very costly for MADE, suppliers and buyers to work together when they individually buy and sell.

Suppliers and buyers have an incentive to train farmers to maximise the benefits of using their products or to produce the products wanted by buyers. In rice, for example, MADE supported certified seed multiplication and helped develop rice VCs with end of chain buyers through the use of aggregators. Support was also given to develop mechanisation through a leasing approach. Financing was also important and efforts were made to improve the capacity of rural banks to increase funding in the agribusinesses.

Box 1: Excel BitCom Limited description using the MADE agribusiness development value chain model

Excel BitCom Limited

Tampuri Alhassan and a partner formed Excel BitCom Limited, near Tamale, Ghana with a technology focus, before changing the focus to agribusiness. Through support by MADE and the Millennium Village Project, the for-profit company began working with smallholders on rice, maize and soybeans. In compliance with the MADE targets, it works to help farmers raise their yields from one or two metric tonnes per hectare to four tonnes per hectare and eventually six tonnes for maize, 3.5 tonnes soybeans and four tonnes for rice.

Excel BitCom and its 24 extensionists and five agronomists work with 5 000 smallholders, each of whom produces on average two acres of crops to sell to the company. It provides the seed, fertilizer and herbicides. The inputs are provided under a contract farming agreement in which the farmers receive loans in kind for these provisions with the requirement to sell the produce to the firm. For the majority of farmers, mechanised land preparation is also provided by Excel BitCom and for some smallholders plus larger ones, harvesting is also done. The company also charges a fee of cedi 60 per hectare (USD 13.50) for providing extension services and is partially funded by the project.

The interest of the company is to aggregate the commodities for the market to larger buyers and processors. With the exception of grain for household consumption, the smallholders take their produce to Excel BitCom's local storage buying centres, first fulfilling their loan obligation and then typically selling the production excess to the company. Prices follow a company pricing model, largely in line with market prices at the time of delivery.

The business model has worked well for Excel BitCom allowing it to aggregate and market 15 000 tonnes of rice, 7 000 tonnes of rice and 4 000 tonnes of soybeans, with annual profits of approximately 33 percent and operational growth of 30 percent, and with sales of USD 11.5 million. Some of the profits are generated by storing the commodities and selling later at higher prices. The smallholders lack storage capacity and there is no law for the use of warehouse receipts to facilitate their ability to do the same.

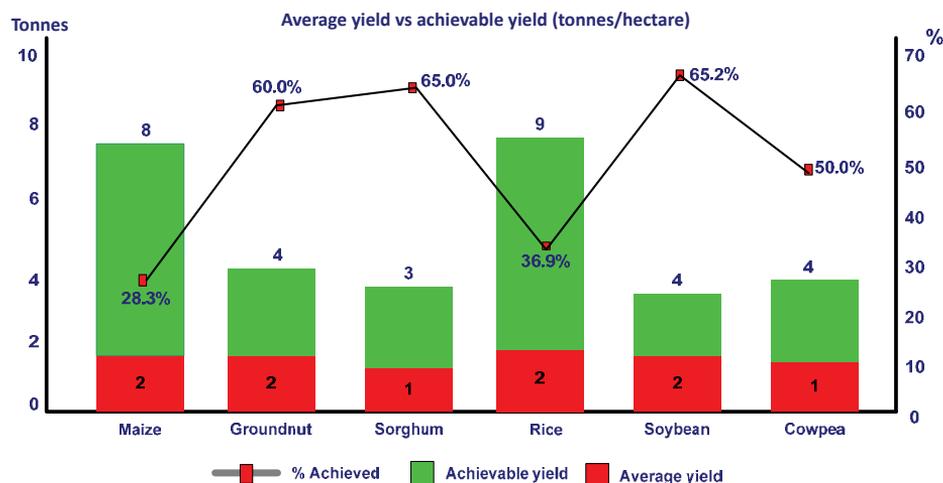
Funding from its own equity and mortgage-based lending from the banks is a constraint for Excel BitCom. Bank interest is 32 percent per annum. As a result of cash constraints, its input suppliers are paid with up to three months deferment and Excel BitCom also often sells to big processors with one to three months credit.

Results and lessons learned

As illustrated by Excel BitCom, one of numerous agribusinesses working with MADE, the approach has helped build a strong agribusiness firm. The farmers have significantly increased their production yields and input suppliers and buyers have increased their volumes by 100 percent. It is clear that there is interest from the agribusiness companies to continue, but over time the farmers may look for other alternatives to command a higher portion of the returns.

The work by MADE and other similar types of programs in Ghana has demonstrated that agricultural productivity can be increased significantly among smallholders. The work on improved seed production as well as access to inputs and extension have not only made a difference but have further room for growth, as shown below from a project study from Deloitte on investment opportunities in northern Ghana for certified seed production. While yields have increased, the potential is much higher.

Figure 5.1 Yield potential



Questions for discussion

1. What were the keys to success in developing the smallholder VCs for the maize, rice and soybean sectors?
2. The agribusiness firms have been able to become quite profitable in the contract farming model; how have the smallholders fared?
3. Smallholders, with only small plots of land, now produce more but have much higher costs owing to improved seeds, the use of herbicides and payment of mechanised services. In what ways has this contract farming model improved their livelihoods and in what ways has it increased their risks?
4. Could the smallholders increase their revenues through a warehousing receipt mechanism allowing them to store for a higher market price? If so, what needs to be done?
5. If you were a development agency, would you support this model of VC development and financing?

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Table 5.1: MADE summary table

Name of case study innovation	MADE agribusiness development value chain model
Type of intervention	MADE project initiated with multiple agribusiness partners in different regions
Sector and region/country	Maize, soybeans and rice sectors in Tamale region, northern Ghana
VC and VCF innovations	Facilitated buyer-driven contract farming
Initiator and principle actors involved	MADE collaborated with agribusiness firms Excel Bit Com and other agribusiness firms as highlighted in case study
Start date	2013
Business model	Facilitated buyer-led contract farming called Making Markets Work for the Poor (M4P) as a financial and sustainable approach with scalable social returns
Financing instruments and rationale	<ul style="list-style-type: none"> • Services provided • Primary reason to provide financing • Sources of funds <ul style="list-style-type: none"> • Trade and marketing financing provided in-kind through inputs and services • To secure commodity purchases • Banks and personal/company equity with project grant support
Financing	<ul style="list-style-type: none"> • Interest rate (explicit or imbedded) • Repayment rate <ul style="list-style-type: none"> • 32 percent from banks to agribusiness; embedded to small farmers • High
Key results	<ul style="list-style-type: none"> • Amount financed/year or crop cycle • Persons/families using services) <ul style="list-style-type: none"> • 26 000 tonnes (from Excel Bitcom agribusiness) • 5 000 farmers
Constraint and limitations	<ul style="list-style-type: none"> • Lack of capacity in use of improved production • lack of input suppliers and buyers in region
Lessons and recommendations	<ul style="list-style-type: none"> • Sustainability and replicability • Application of ICT <ul style="list-style-type: none"> • High, especially for agribusiness • Low use of mobile payments due to lack of connectivity
Lessons and recommendations	<ul style="list-style-type: none"> • Pilots allow early tech adopters to demonstrate value and support the concept • Knowing the user audience and ensuring content is personalized and relevant is critical • Training, awareness building and support are crucial for dissemination • A human interface between technology, content and the end user is necessary, including some handholding using lead farmers and local experts • For dissemination, targeting associations and agribusinesses is effective to reach farmers • Partnerships with commercial companies, including agribusinesses and telecoms

Annex 6: Facilitated Farmers' Union value chain partnership

Yendi, Ghana

Case prepared by Calvin Miller

Overview and background

Evangelical Presbyterian Development and Relief Agency (EPDRA-Yendi) promotes economic livelihood and community development of the smallholders in the Yendi region in northwestern Ghana through extension, farmer organization, and market and financial linkages. EPDRA-Yendi, a local NGO, with funding from the Dutch development agency ICCO, has been worked to develop the capacity of the farmers and their organizations. The activities centre on organising farmers into groups and enabling them to become viable and independent farmer-based organizations (FBOs).

EPDRA operates in 29 farming communities in the Yendi municipality, with 44 FBOs, six livestock farming groups with the agricultural programs and 11 women's groups under a microfinance scheme. The total number of beneficiary farmers stands at 1 442, 25 percent of whom are women. The main goal of the NGO, in its own words, "is to raise the living standards of the peasant farmer." Its extension focuses on increasing production and productivity using sustainable agricultural and environmental practices and improved livestock, organising and facilitating smallholders to form co-operative groups to undertake economic ventures, linking farmer groups to financial institutions and marketing firms to acquire loans and sell their produce at fair market price, the provision of extension support to farmers to increase production, and the use of organic manure with special reference to animal droppings and composting.

Business model and financing

The business model used encourages smallholders to form co-operative groups to undertake economic ventures, linking farmer groups to financial institutions and marketing firms to acquire loans and sell their produce at a fair market price. This effort works with the smallholders in the region who have, on average, less than four hectares of land without irrigation, and is aimed at selected sectors and VCs, namely maize, soybeans and, in some areas, rice as the priority crops, as is typical in the region. The village farming land is under customary authorities and in the custody of traditional authorities and therefore families do not have clear land titles, which can be used as collateral.

Smallholders form village-level FBOs averaging 32 farmers. The FBOs within each region are then aggregated into second-tier Farmers' Unions (FUs), such as the Taaganoba FU in the Yendi region. The FU is made up of a general assembly of two delegates from each FBO and governed by a board of seven members elected by the assembly.



Maize © C. Miller

Key actors, partnerships and roles

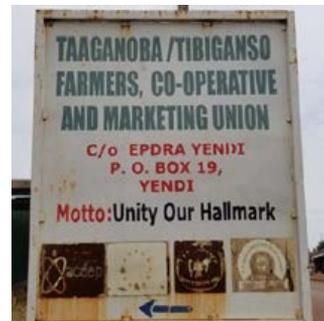
EPDRA-Yendi

The EPDRA development agency has worked with smallholders in the region for many years. It has found that the smallholders need to be aggregated and work together in order to achieve economies of scale for purchasing, selling as well as for feasibility with extension and capacity building. The formation of FBOs, starting in 2005, was useful in improving production and building capacity, but nevertheless still left the smallholders too weak to be able to negotiate competitive purchases and sales for their members and too vulnerable to governance and oversight. Therefore, EPDRA facilitated the organization of the FBOs into FUs.

Taaganoba Farmers' Union and Farmers' Cooperative

The Taaganoba FU is one of numerous FUs facilitated by EPDRA in different regions in the country. Its role is to coordinate the purchasing, selling and financing that goes to the FBOs, as well as oversee the governance and management of them. Each FBO has a bank account, as does the FU, but the financing and all financial transactions of buying and selling go through the FU for both oversight control and for ease of transactions with the other VC actors.

Each FBO gathers the requests for tractor and mechanisation services, and for agricultural inputs for their maize, rice and soybean production from their members, and the FBO submits a work plan to the second-tier FU. These are reviewed, approved and consolidated by the FU who then undertakes collective negotiation and purchases as well as the required financing. The FU also coordinates with potential buyers and negotiates agreements. The actual amounts and locations for the inputs and sales are determined according to interest and the setting of the FBOs with their members.



Farmers' cooperative and union
© C. Miller

At harvest time, the FU negotiates sales contracts on behalf of their FBOs. Some advances may be given by the buyers. When sales are made, the loan capital and interest are deducted before payments are made to the FBOs. In this way, there is cashless management of the financing and control of loan payments, resulting in a 100 percent repayment rate by the FBOs each year

Bonzali Rural Bank

Ghana has many rural banks (RBs), and although their name may imply, RBs are not heavily involved in agricultural finance. Bonzali Rural Bank is one of the largest RBs in rural Ghana and due in large part to the FU financing program, the Yendi branch, the second largest, has 40 percent of its funding in agricultural production. They are pleased with the cashless financing for smallholders through the FUs, in contrast to an earlier financing scheme from a large international agency (name withheld) in which it received a large sum to lend to prescribed groups of farmers at a set rate and margin for them to repay in a short amount of time. The agency's losses were over 60 percent, putting significant strain on the bank.



Bonzali Rural Bank, Yendi branch © C. Miller

Bonzali RB has extended the cashless financing approach for working capital to farmers beyond the areas of the EPDRA program. They also finance a successful microfinance program for women, originally started as a Credit with Education Program. The weekly savings and credit payments have gone well and the training of new groups on bookkeeping, health and nutrition continue with 110 women's groups.

Results and lessons learned

Operational lessons

The facilitated, producer-led partnership model introduced by EBDRA-Yendi allows timely financing for the farmers, increased returns from higher productivity, lower cost of inputs and higher market prices. There is a solid foundation within the organization and trust within the FBOs, FU and women's groups. Even though EBDRA continues to provide a modest level of extension support, they are concentrating on expansion into other areas of the country.

Impact lessons

- Cashless financing for smallholder agriculture has worked well for the bank generating profits with very low risk. It has also led to confidence in working with smallholders and women, and there is great interest to continue.
- Success in cashless value chain financing has not led to the bank transforming its lending practices.

Examples of this are:

- The Bonzali RB charges an interest rate of 35 percent per annum for lending to agriculture and microfinance (nominally similar to 36 percent for commercial loans and 34 percent for salaried ones) when inflation is 16 percent.
- The Yendi branch, one of the most successful, has the opportunity to grow its portfolio, but is constrained by capital limits from its headquarters.
- The FBOs, FUs and some individual farmers indicated a strong interest in funding for warehousing (both warehouse construction and warehouse receipts for capturing improved market prices), mechanisation and other productive investments, and despite their strong credit history, Bonzali RB has been reluctant. Rather Bonzali RB is interested to expand into non-agricultural financing.

Questions for discussion

1. What are the principle reasons that the FBOs and FUs have been successful in their organization and activities?
2. Assuming you are an agricultural financing and VC specialist, what advice would you give to the management and directors of the Bonzali RB to encourage them to be more innovative in their agricultural lending?
3. The cashless input and pre-harvest financing to the farmers in the FBOs does not address their needs for investment and longer-term financing. How would you recommend they to source the financing needed and what would they need to do to convince potential financial institutions or VC actors of their repayment capacity and security?

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- Miller, C. 2017. Interview with representatives of Taaganoba Farmers Coop and Marketing Union. [audio]. Yendi. [Cited 28 October 2017].
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Table 6.1: Facilitated Farmers' Union value chain partnership summary table

Name of case study innovation	Facilitated Farmers' Union value chain partnership
Type of intervention	NGO initiated producer organization and value chain development
Sector and region/country	Maize, soybeans and rice in northern Ghana
VC and VCF innovation(s)	<ul style="list-style-type: none"> Cashless financing involving Farmers Unions, suppliers, buyers and a rural bank Smallholder organizational structure
Initiator and actors involved in the financing	EPDRA-Yendi NGO, buyers, suppliers, bank and 1 st and 2 nd tier Farmer based organizations.
Start date	Farmer based organizations from 2005; Farmer Unions from 2011.
Business model and key actors in service provision	Facilitated producer organization driven model with cashless finance.
Financing instruments used	<ul style="list-style-type: none"> Services provided Reason(s) to provide financing; Source(s) of funds
Financing	<ul style="list-style-type: none"> In-kind working capital Agricultural inputs and pre-harvest Bonzali rural bank and buyers
Key results	<ul style="list-style-type: none"> 44 active farmer-based organizations (1 442 families) plus 110 women's groups Improved productivity Strong farmer organization performance and structure
Lessons and recommendations	<ul style="list-style-type: none"> Sustainable financing Self-managing farmers' union High interest costs in spite of cashless, low-risk VC financing Lack of interest in rural bank expansion into agricultural lending in spite of good performance

Annex 7: MobiGrow smallholder financial inclusion through value chain financing

Case study developed by Clarisse Aduma and Calvin Miller

Overview and background

Kenya Commercial Bank (KCB), headquartered in Kenya, is a private-public shareholder bank operating in seven countries of East Africa with assets of over KSH 650 billion (USD 6,5 billion), which is primarily funded by deposits. Like other commercial banks in the country, its agricultural portfolio is small in relation to other sectors. KCB however, has implemented a Tuungane Chama microfinance loan portfolio for groups for some time. The groups of 5 to 30 members receive loans ranging from KSH 5 000 to KSH 1 000 000 (USD 50 to 1 000) and have flexible repayment terms of up to 24 months, flexible collateral security and group guarantee requirements, and are coupled with business advisory services. The bank also offers mavuno account (farmer harvest) loans with no minimum operating balance, a waiver of various fees, access to KCB mobile banking, an ATM card and flexibility of payment.

In spite of these incursions into financing low-income households, the risks of agricultural financing for the poor without collateral were high, making such lending more difficult. Hence, learning and piloting new models was needed to be able to fully reach the potential of smallholder households and the MobiGrow program was conceived. MobiGrow is a five-year, shared-value initiative funded by the MasterCard Foundation (MCF) and KCB Bank, and implemented in Kenya and Rwanda. It targets smallholders, agro dealers, off takers and processors, and other VC actors in dairy, maize, potatoes, rice, sorghum, soybeans as well as pastoral livestock, among others.

The principal objective of the MobiGrow initiative is to enhance financial inclusion and improve the livelihood status of the agricultural community by:

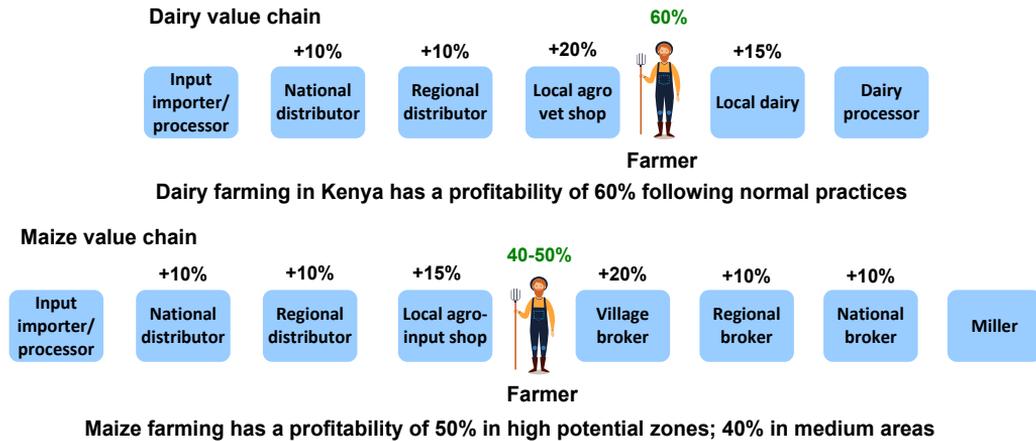
- harnessing technology to catalyse development through MobiGrow, an innovative mobile-phone based financial service delivery system;
- enhancing productivity among smallholders by supporting training and exposure to best practices and technologies, leading to higher rates of application and adoption, and
- extending infrastructural and institutional support to farmer producer organizations (FPO) in order to facilitate improved access to markets, savings, credit and insurance for smallholders' crops and livestock farmers.

Getting started

The MobiGrow program is being piloted with the dairy and maize VCs. Dairy is a growth sector in Kenya and through daily deliveries of milk has a regular cash flow of income making it less risky to finance. Maize, the most important smallholder crop covering 60 percent of cropped land, has a stable market but suffers from low productivity of 1,8 tonnes per hectare. However, both have sufficient profit potential to be attractive to finance.

The work of MobiGrow began with a value chain analysis as depicted below in simplified form.

Figure 7.1: Value chain analysis

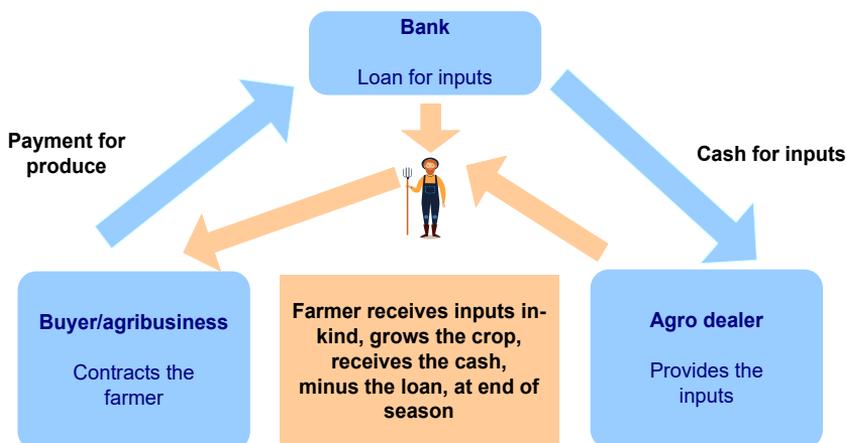


The mapping of the VCs was followed by looking for areas in which to improve efficiency in the VCs to increase the profits of those involved.

Business model and financing

MobiGrow uses a facilitated buyer-driven VC model with contractual arrangements between stakeholders. It is VC centric and aided by technical assistance, training, and access to technical advice given via mobile phones. The process is cashless for the smallholders because they receive their loans in kind with direct disbursements from KCB to their suppliers and loan repayments made by discounting from their buyers.

Figure 7.2: Closed circuit value chain financing of maize

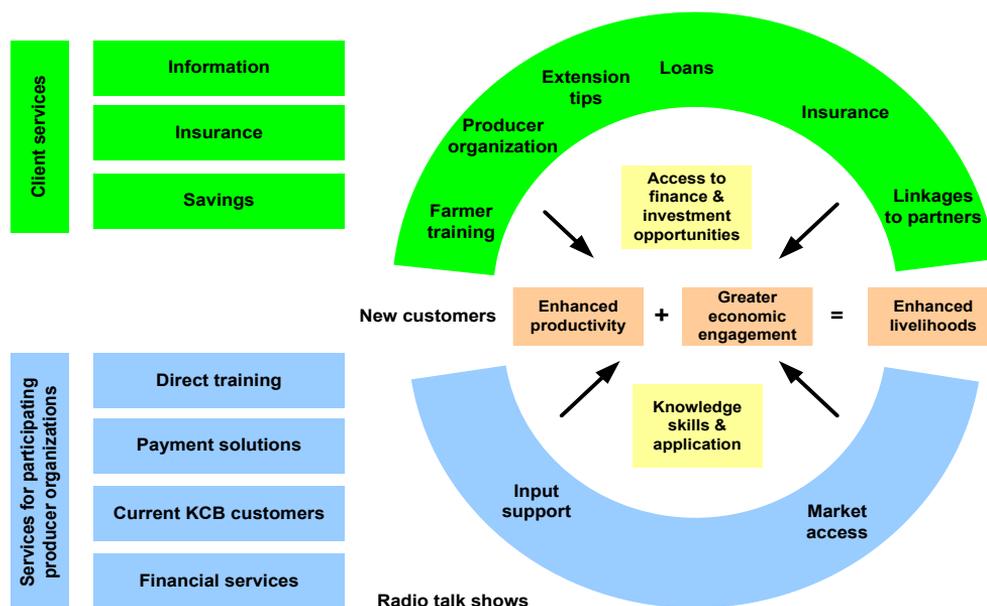


The flow of funds from KCB Bank and the buyers or sellers is done electronically through electronic bank transfers or through mobile banking. The bank works with smallholders through joint liability groups, providing a further level of security to KCB, even though the loans are managed as individual client accounts in the bank. The bank and their clients also reduce their risks through agricultural insurance, which forms part of the financing.

Value proposition of MobiGrow

KCB bank offers Mobi loans of Ksh 100 to Ksh 100 000 (USD 1 to 100) via mobile phones to its customers. MobiGrow builds on this mobile technology but its services are quite distinct. MobiGrow is a package of financial and non-financial services tailored to the sector and particular VCs and contexts of the clients in each region. Finance alone will not provide the market integration needed for “bankable” smallholder clients, nor will it have the effect needed to improve their agricultural productivity, human capacity and livelihood needs.

Figure 7.3: Value delivery through MobiGrow eco-system



Results and lessons learned

The MobiGrow model has shown that it is not risky to finance smallholders when applying a comprehensive approach. Once in place, the costs are not deemed to be prohibitive, especially when mobile technologies and the aggregation and local support of smallholder groups are used to help provide the services more efficiently. However, KCB is encouraged by the results and is moving forward with geographic expansion in Kenya and Rwanda as well as preparing to adapt to additional VCs.

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Questions for discussion

1. What are the most important features of the MobiGrow ecosystem for VC financing for the current and new smallholder clients?
2. The MobiGrow program was developed with cost-sharing and collaboration with the MasterCard Foundation. Can this model be used in the future by other commercial banks without external support? If so, how? And if not, who could provide that support to scale-up other organizations?
3. What are potential bottlenecks in MobiGrow's expansion into other commodity sectors? Will the model also work if applied in other VCs, such as in horticulture?

Table 7.1: MobiGrow smallholder financial inclusion through value chain financing summary table

Name of case study innovation	MobiGrow smallholder financial inclusion through mobile value chain financing
Type of intervention	Facilitated contract farming and financing using mobiles
Sector and region/country	Maize and dairy across Kenya
VC And VCF innovation	Using a digital platform and business model for low risk VC financing of smallholders through a large commercial bank
Initiator and actors involved in the financing	Kenya Commercial Bank (KCB) and MasterCard foundation (MCF)
Start date	2016
Business model and key actors in service provision	Facilitated buyer-driven model with bank facilitation
Financing services and instruments used: <ul style="list-style-type: none"> • Service provided • Motive for service • Sources of funds 	<ul style="list-style-type: none"> • Farmer joint-liability group formation, technical training, linkages to inputs and markets • Interest in bank's rural client expansion and financial inclusion • KCB loans with joint KCB and MCF capacity building funding
Financing <ul style="list-style-type: none"> • Interest rate • Repayment rate 	<ul style="list-style-type: none"> • KCB bank rates • High repayment in pilot stage
Key results	<ul style="list-style-type: none"> • Early stages of growth
Constraints and limitations	<ul style="list-style-type: none"> • High costs of start-up in relation to loan and production volumes.
Lessons and Recommendations <ul style="list-style-type: none"> • Sustainability and replicability • Application of ICT 	<ul style="list-style-type: none"> • Without co-funding support, new expansion may not be attractive to the bank. • Mobile platform has benefits beyond the target small farmers.

Annex 8: Facilitating producer organizations to finance improvements in rice and maize

Case study prepared by Calvin Miller and Sadiq Z. Abubakar

Overview and background

Northern Nigeria is characterised by lower-rainfall agriculture performed by resource-poor smallholders. Many governments and programs have been undertaken to address rural poverty, including numerous failed credit programs. Crop revenues are low, in large part owing to low yields from the lack of improved seeds, fertilizer and other inputs, as well as high post-harvest losses.

The National Agricultural Extension, Research, and Liaison Services Institute (NAERLS), linked with , undertook research that showed finance was inaccessible to acquire the needed inputs and technical upgrades. It observed that the capacity and disorganised structure of the smallholders and their ad hoc markets dissuaded lenders from provide financing to them. Financial institutions (FIs), including microfinance (MF) banks were afraid of the risk involved in agricultural enterprises, especially primary production, not only because of the unpredictability of weather, but even more so because of their poor repayment performance in the past and the poor organizational structure of the farmers. The poor producers were equally afraid to take loans from the lending institutions owing to their low productivity and profit margin, fear of inability to pay back loans within the repayment period, and the perceived high interest rates.

The reluctance of FIs to lend to agricultural enterprises became a serious concern to the government and the Central Bank. As a result, they introduced the following requirements and incentives:

- agricultural loans became mandatory to FIs;
- interest rates to primary producers were reduced by 50 percent;
- a 40 percent reduction of the loan amount was awarded to producers who repaid their agricultural loans on schedule, and
- awards were given to producer groups that achieved 100 percent of their agricultural loan repayments.

However, the problem was much deeper than a reluctance to lend or repay.

Business model

The NAERLS researchers and extension leaders analysed the smallholder dilemma and realised the need to facilitate change. Hence, they took the initiative to address root causes of the farmers' low levels of productivity in the maize and rice sectors. This led them to tackle the fundamental constraints in three areas:

- **Technical:** capacity building on production and post-harvest technologies, and establishing demonstration plots;



Producer workshop training © S. Abubakar, NAERLS

- **Organizational:** Strengthening producers and producer organizations in areas including democratisation, accountability, conflict management, advocacy and role differentiation, and
- **Managerial:** Record keeping, securing loans, monitoring, default mitigation and repayment.

Facilitating change to improve and upgrade the strength of the VCs and actors in these sectors could first focus on the buyer or the producer. NAERLS chose the latter, since without producer organization and capacity, the buyers and potential contractors would not be interested in working with the smallholders, or would be in a position of dominance.

Actions taken

In 2009, NAERLS began piloting three principal tasks with producers and developing farmer cooperatives (FCs). Not only did it facilitate improvements in technical capacity, producer organization and aggregation and management capacity, but it also provided loan funds and served as a guarantor for funding, both of which go beyond the role of a facilitator, and represent a risky “slippery slope” of intervention. However, the pilot with three producer organizations (POs) results led to a:

- a 12 percent reduction in production costs through producer organization collective input purchases;
- increases in yield of 35 percent for rice and 48 percent for maize;
- increases in quality of 12 percent for rice and 21 percent for maize;
- reduced harvest losses of 25 percent for rice and 60 percent for maize, and
- 100 percent loan repayment.

Together these improvements resulted in an:

- increased net income for the participating 75 farmers of up to 65 percent;
- improved cohesion and governance, including the formation of the POs into farmer cooperatives (FCs), and
- requests from nine additional FCs to join the intervention in the 2010 farming season.



Practical training © S. Abubakar, NAERLS

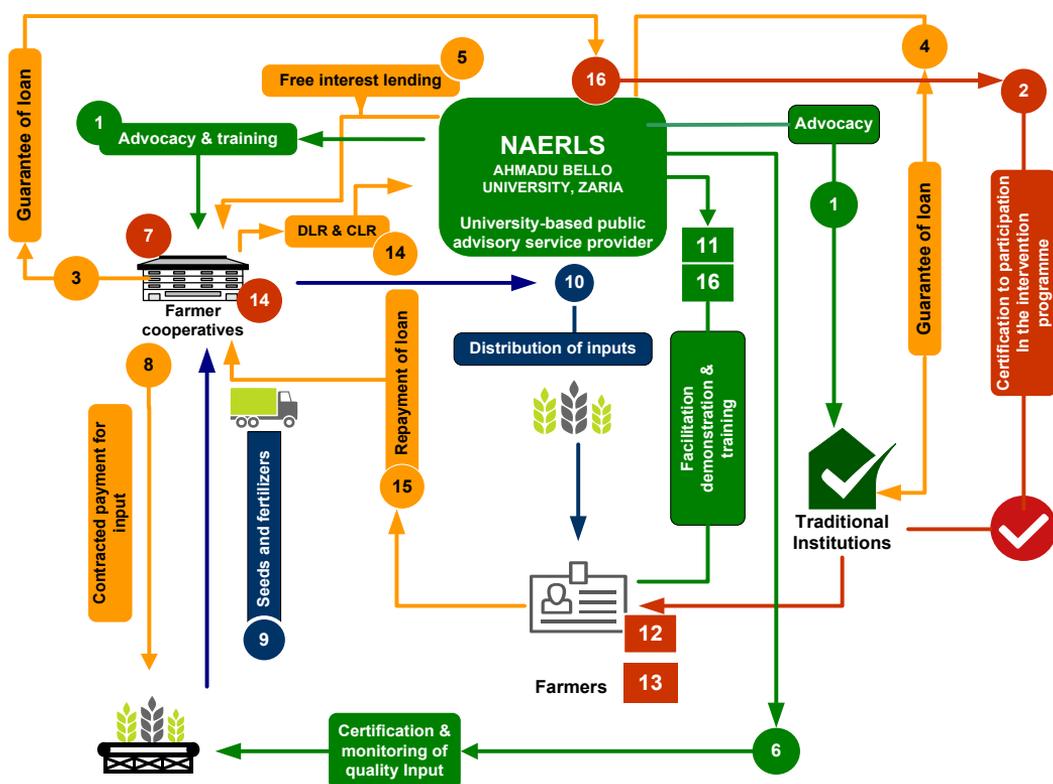


Farm extension demonstrations © S. Abubakar, NAERLS

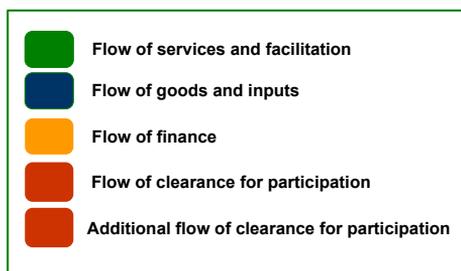
In 2010, NAERLS increased its scope and field facilitators to work with 12 FCs, and its subsequently its loan portfolio from two million naira (NGN) to seven million naira (USD 50 000). The scope of work increased in 2011 to 19 FCs, and 10 million NGN, and despite equally good results and a 100 percent loan-repayment rate, NAERLS could no longer meet the growth needs of 32 FCs, many of whom had tripled in size.

The diagram below shows the model and the steps in the process by each actor.

Figure 8.1: Facilitator-led financing of rice and maize, stage 1



Legend



Stage 1: Roles played by actors

No.	Activities	Actors
1	Advocacy for the programme	NAERLS
2	Certification for participation in the programme	Traditional institutions
3	Guaranteeing of producer loans	Farmer cooperatives
4	Guaranteeing of loans to cooperatives	Traditional institutions
5	Provision of free interest lending to producers via cooperatives	NAERLS
6	Certification and monitoring of quality inputs	NAERLS
7	Training for cooperatives and members	NAERLS / Farmer cooperatives
8	Contracts and payments for inputs to marketers	Farmer cooperatives
9	Delivery of seeds and fertilizers to cooperatives	Input marketers
10	Distribution of inputs to producers	Farmer cooperatives
11	Demonstrations and trainings	NAERLS
12	Manage demonstration plots and undergo training	Farmers
13	Production and harvesting	Farmers
14	Declaration of loan recovery (DLR) and collection of loan repayments (CLR)	Farmer cooperatives
15	Repayment of loans	Farmers
16	Facilitation and follow-up	NAERLS

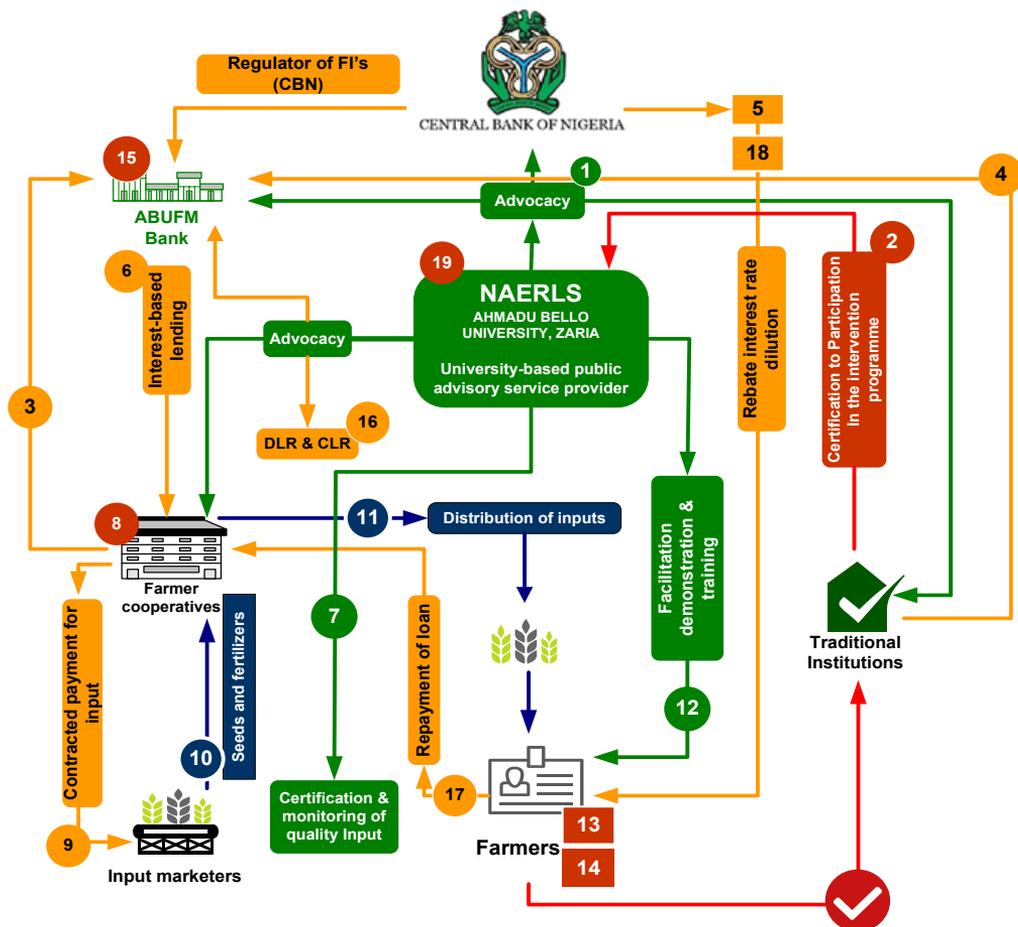
Role change

In 2012 NAERLS, realising the success of the pilot and its growing capacity constraint to keep pace with the growth, and rethinking its mission, returned from direct intervening to the role of facilitator. The loan program was presented to lenders and the ABU MF bank assumed the role of lender to the farmers, with ongoing facilitation support by NAERLS, especially for new FCs. The MF bank provided the opportunity for significant loan portfolio growth to NGN 35 million in 2012, despite an increase in the interest rate. Based on the FC organization model and pilot results, a lower than normal MF bank rate was agreed. In addition, a new Central Bank policy interest rate controls and incentives also contributed to benefit the farmers.

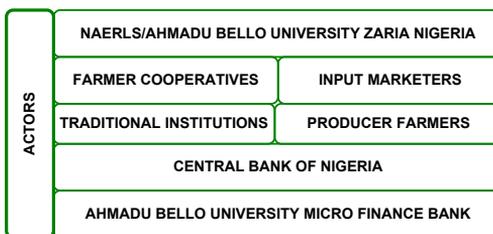
Providing support to many FCs is costly. The NAERLS approach to deal with the expansion and complexity of working on a large scale was to form village and farmer resource centres to facilitate new FCs and provide support. Use of the Farmers' Unions to aggregate the FCs was also initiated to both coordinate as well as to have negotiating leverage in buying inputs and the bulk sales of commodities.

With the growth of the program beyond the capacity of NAERLS, the following model and roles were adopted.

Figure 8.2: Facilitator-led financing of rice and maize, stage 2



Legend



Stage 2: Roles played by actors

No.	Activities	Actors
1	Advocacy for the programme	NAERLS
2	Certification for participation in the programme	Traditional institutions
3	Guaranteeing of producer loans	Farmer cooperatives
4	Guaranteeing of loans to cooperatives	Traditional institutions
5	Reduction of interest rate given to producers	Central Bank of Nigeria (CBN)
6	Provision of free interest lending to producers via cooperatives	NAERLS
7	Certification and monitoring of quality inputs	NAERLS
8	Training for cooperatives and members	NAERLS / Farmer cooperatives
9	Contracts and payments for inputs to marketers	Farmer cooperatives
10	Delivery of seeds and fertilizers to cooperatives	Input marketers
11	Distribution of inputs to producers	Farmer cooperatives
12	Demonstrations and trainings	NAERLS
13	Manage demonstration plots and undergo training	Farmers
14	Production and harvesting	Farmers
15	Loan repayment administration	ABU MFI
16	Declaration of loan recovery (DLR) and collection of loan repayments (CLR)	Farmer cooperatives
17	Repayment of loans	Farmers
18	Rebate paid to producers due to 100 percent loan repayment	CBN
19	Facilitation and follow-up	NAERLS

Results and lessons learned

Results as of 2017 include the following:

- ABU MF bank loan portfolio for FCs increased from NGN 15 million in 2012 to NGN 127 million. The number of participating FGs increased from 35 in 2012 to 140 in 2017.
- Ninety percent of the FGs are sole primary producers of rice and maize during the raining season.
- Ten percent of the FGs, mainly women-based, are venturing into rice processing, thereby expanding the family agricultural enterprise.

Lessons learned according to NAERLs are:

- Facilitating access to finance to support agricultural enterprises is a great challenge in developing economies and must be given great attention. The success of the entire intervention is dependent on quality facilitation.
- Champions must be ready to initiate interventions of different types to show that poor resource producers can become organised to access credit facilities and break the vicious cycle of poverty. There have to be initiators to demonstrate the plausibility of breaking this vicious cycle and providing access to credit for poor smallholders. A stakeholder is needed to take responsibility during the piloting stage to develop confidence and encourage other organizations and firms to follow.
- There has to be a precise definition of roles and responsibilities and these roles will change over time.
- Risk mitigation measures must always be given priority.
- Successes triggers demand expansion and put stress on the actors, triggering the need for new partners and funds.

Looking forward

- Producer groups organised in FCs are the base associations at the local government level. These are then clustered into FC Unions to more aggressively test aggregation and marketing. Unions could form apex associations at the state level.
- NAERLS, as facilitator, is coping with expanding responsibility, the increasing cost of facilitation, and is exploring sharing the cost of facilitation with Abu MF bank.

References

Miller, C. 2017. Interview with Sadiq Z. Abubakar, Professor at Ahmadu Bello University Research Centre. [audio]. Zaria. Addis Ababa.[Cited 9 October 2017].

Questions for analysis and discussion

1. What were the smallholders' fundamental constraints?
2. Did NAERLS employ a good strategy to address those constraints? Is there an alternative strategy that could have been considered, such as not intervening in financing?
3. Should NAERLS charge for services or have others, such as ABU MFI, pay?
4. Should the services be time phased and "graduate" the FCs from ongoing support?
5. Could NAERLS organise training for trainers or ITC call centre support, for example, to provide cost-effective outreach, and/or should it work closely with ABU MF Bank to strengthen their support capacity?
6. What lessons can be drawn from the NAERLS case for your country?

Table 8.1: NAERLS case summary table

Name of case study innovation	Facilitating producer organizations for financing improvements in rice and maize
Type of intervention	Organization, capacity development and finance
Sector and region/country	Maize and soybeans in northern Nigeria
Initiator and actors involved in the financing	National Agricultural Research Centre (NAERLS), producer organizations and MF bank
Start date	2009
Business model and key actors in service provision	Facilitated, producer led VCs
Financing instruments used	<ul style="list-style-type: none"> • Agricultural input financing and guarantees, as required to upgrade production • NAERLS funds pilot and MF bank funds growth
Source of funds	
Financing	
<ul style="list-style-type: none"> • Interest rate • Repayment rate • Estimated finance 	<ul style="list-style-type: none"> • 22 percent per annum • 100 percent • USD 350 000
Key results	
<ul style="list-style-type: none"> • Amount financed/year or crop cycle • Persons/families involved 	<ul style="list-style-type: none"> • Nine-fold loan portfolio increase • 3 500 families
Constraints and issues	Small, unorganized farmers lack the foundation for success and financing; such fundamental constraints need addressing before financing.
Lessons and recommendations	<ul style="list-style-type: none"> • Partnership with financial institution for financing; cost coverage to facilitation unresolved • “Champions” may be needed to jumpstart change for small farmers • Success brings its own set of challenges, including the resources needed to expand.

Annex 9: SNV value chain approach to development in Rwanda

Case prepared by Calvin Miller and Philippe Rumenera, SNV

A major limitation of rural and agricultural development initiatives is their very limited, time-bound project focus and requirements to achieve high numbers in results indicators. Direct interventions by the implementing agency under time pressure for fast results may result as the local partners have not built the capacity, producer groups may be formed without due local member ownership, and a true understanding and commitment of the local stakeholders can be at risk. The second major limitation of development initiatives is to focus solely on their target group. Yet, no target group or segment works in isolation. Hence, the approach and focus are important determinants of sustainable development success.

SNV value chain approach

SNV is a Dutch development agency working in over 30 countries. In Rwanda it uses a value chain approach in its agricultural work to support all key VC actors in five commodity sectors and six livestock sectors in the lesser-developed regions of country. It defines VCs as “systems of people, organizations and activities needed to create, process, and deliver a product or service from supplier to customer,” and works throughout each VC to develop inclusive business commercial models that involve low-income groups in the VC of a medium or large company as producers, distributors or consumers. By taking a market driven end-to-end VC approach, the strengths and weakness of those involved in the activities and transactions – both within the VC, and into the VC such as banks, investors, extensionists and others in service provision – can be addressed. This includes addressing both the weaknesses of some of the actors and the relationships, but also as a tool to use the strengths of others in the VC for the benefit of all.

Advisory services are core to SNV’s programmes. SNV offers capacity building advisory services to clients and addresses the systemic constraints they confront. It plays a supporting role in market systems, bringing parties together, promoting innovation and developing capacities in new areas of expertise. SNV also works in grant management, which is closely linked to its engagement in advisory services. This, along with facilitation of access to finance, increases the possibilities for clients to experiment and boost pilot initiatives in mainstream activities at scale.

In Rwanda, the core business of SNV is strengthening the capacities of local organizations in the private and public sectors. SNV Rwanda supports producer organizations, processors and agri-businesses in horticulture, potatoes, cereal crops, dairy and livestock, coffee, bee products, fisheries and other sectors. SNV applies its VC development approach to all types of distinct sectors as it finds it most useful to increase overall competitiveness and tap into opportunities while protecting the environment. This includes strengthening the business service providers within the agriculture VCs.

Agricultural value chain financing

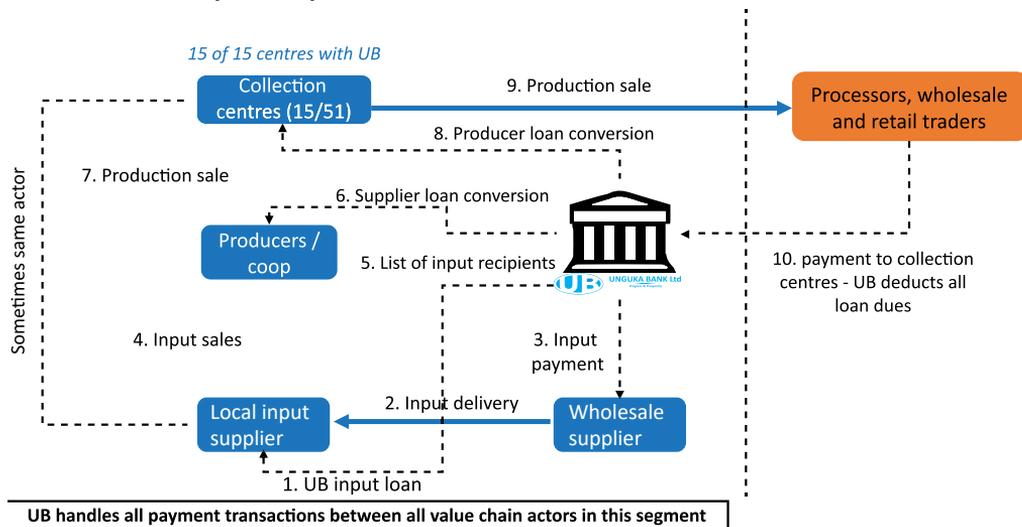
Timely and adequate financial access is essential to VC development and SNV’s role is that of facilitator of linkages with banks and other service providers, while helping build the capacity of the suppliers and users of finance. It also links private investors to rural enterprises as needed.

Financing is especially important for the potato sector because it incurs high, upfront costs in seed as well in land preparation and for other inputs. Since 2013, SNV has been working with over 1 000 potato farmers. With the small land sizes in Rwanda, the average size of potato production is only half a hectare, which can be used for planting twice per year. As an easily perishable crop, subject to fungal and other diseases, risks are relatively high but the returns per hectare can also be high. Hence, technical capacity building, access to high-quality seed and inputs and adequate financing are key components of the work of SNV.

Working with six banks and one MFI, SNV's VC financing approach helps minimise the risks of production and marketing as well as those in potato financing. The example of Unguka Bank, shown below, illustrates that approach to financing.

Figure 9.1: Unguka Bank financing approach

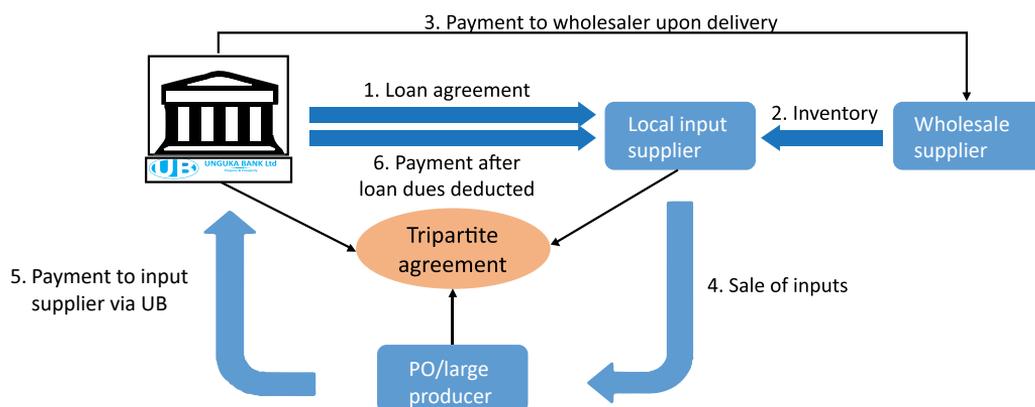
Potato value chain financial flow: KORA branch



Potato financing from the bank comes in the form of a loan to the suppliers of seed and inputs, but payment is made to the large companies from whom they purchase their inputs. In this way, the strength of the large buyer helps reduce the credit risk and allows direct payments for efficiency. After input sales are made to the producer organizations the loan is transferred to the producers. After harvest, potatoes are sold to the collection centres that aggregate the produce and sell to the processors and wholesalers who in turn pay back the bank, which then discounts the loans outstanding and repays the farmers. Not only is the system a closed circuit, but the financial transactions all flow through the bank allowing for close control. Payments to the producers can also be received electronically through their mobile wallets with the bank.

It is also useful to note the tripartite agreement used in the financing. This agreement between the bank, the input supplier and the producer organization is important to ensure that payments are made correctly at times of delivery.

Figure 9.2: Unguka Bank tripartite agreement



The financing model of Unguka Bank, and the similar models of other banks in Rwanda, address working capital needs. While the bank has a similar arrangement for equipment financing, there is a lack of commercial financing for infrastructure needs such as financing of much-needed storage facilities, including cold storage for potatoes. Private-public investment with impact investors is being explored as a potential solution.

Lessons learned

A VC approach with a programmatic horizon to sufficiently meet the needs of those involved is important for the success of the development initiatives. SNV identifies four essential factors for sustained results:

1. **Inclusive development** means actively listening to and engaging people living in poverty, such as producers, workers or consumers. This also means not creating special niches but structurally linking these actors to sustainable development processes that are both fair and just.
2. **Systemic change** is required to ground inclusive and sustained development in a conducive legal and policy environment and to guarantee progress beyond the strengthened capacities of individual players.
3. **Local ownership** allows local actors to shape and drive their agendas and assume responsibility for leading development processes.
4. **Contextualised solutions** are key to the effectiveness and sustainability of approaches; they may be inspired by experiences elsewhere but always need to be tailored to the specific political, administrative, financial and socio-cultural conditions.

These lessons apply equally to value chain financing as to the strengthening and developing of value chains. While the contexts and value chain financing vary across sectors and regions and must be structured accordingly changes, the core principles have shown to hold true.

References

Miller, C. 2017. Interview with Philippe Rumenera, Agribusiness Advisor, Netherlands Development Organisation (SNV). [audio]. Kigali. [Cited 30 November 2017].

Questions for discussion

1. Do you agree with the four essential factors of SNV's VC development? Why or why not? Which additional factors may be considered?
2. What are the strengths and weaknesses of the Unguka Bank value chain financing model presented above?
3. How can SNV best facilitate investment for agricultural and agribusinesses, such as storage?

Table 9.1: SNV program value chain approach to development in Rwanda summary table

Name of case study innovation	SNV program approach to value chain development in Rwanda
Type of intervention	Facilitation of value chain development and financing
Sectors and region/country	Five commodity sectors and six livestock sectors in lesser developed regions of country
VC and VCF innovation(s)	End-to-end VC development of all relevant stakeholders using a longer term facilitation and accompaniment approach
Initiator and actors involved in the financing	SNV
Start date	Ongoing initiatives depending on sector.
Business model and key actors in service provision	Facilitation and advisory support to address issues and opportunities throughout VCs.
Financing services provided	<ul style="list-style-type: none"> • Facilitation of financing through financial institutions. • Capacity development on financial management.
Key results	<ul style="list-style-type: none"> • 1 053 potato farmers.
Lessons and recommendations	<ul style="list-style-type: none"> • Using a programmatic VC approach with inclusive development, systemic change, local ownership and contextualized solutions • Capacity development at all levels • Engaging in private public collaboration • Embracing ICT solutions

Annex 10: ACRE Africa – promoting insurance risk coverage for value chain partners and financiers

Case prepared by Wairimu Muthike, Belinda Kaimuri, Thomas Bazarusanga and Calvin Miller

Overview and background on the VC financing

ACRE Africa, the brand name of Agriculture and Climate Risk Enterprise Ltd. (ACRE Africa) is a registered insurance surveyor in Kenya and an insurance agent in Rwanda and United Republic of Tanzania. It is a for-profit company that evolved from the Kilimo Salama (safe farming) project (established in 2009), which was funded through the Syngenta Foundation for Sustainable Agriculture and the Global Index Insurance Facility (GIIF). ACRE's vision is to help unlock the full potential of agriculture by eliminating the stress and potential damage of climate variables for farmers across Africa.

ACRE Africa is an insurance intermediary specialising in index-based agriculture insurance. It works to engage local insurers and other stakeholders in their agriculture VCs to provide suitable, affordable and accessible agriculture insurance solutions. It supports the capacity of local insurance companies to provide these products using their actuarial and product development expertise. ACRE Africa also collaborates with local agricultural organizations to develop products that address their particular agriculture risk profile.

Since 2009, ACRE Africa and its predecessor, Kilimo Salama, have developed insurance solutions for cereals, food crops and cash crops like maize, sorghum, wheat, legumes, potatoes, coffee, tea, sunflower and cashew nuts, with coverage against production risks like drought, excess rain and storms. It also supported two local insurance companies to improve on their indemnity-based livestock insurance for large and small animals.

ACRE Africa's target market is low-income smallholders although the insurance products have been seen to benefit a much larger segment including all agricultural VC actors, including agribusinesses and financial institutions.

The environment and approach to agricultural insurance in East Africa is changing. While overall awareness of climatic risks is increasing, in part due to the effects of climate change, the need to use insurance is still less accepted. While larger farmers and industries are more aware of the benefits of purchasing insurance, it is indicated that smallholders are more reluctant to pay for insurance. While in general this continues to hold true for the majority of smallholders, other stakeholders in the agriculture VC, who work with smallholder farmers in organised groupings, are interested in the insurance. These include:

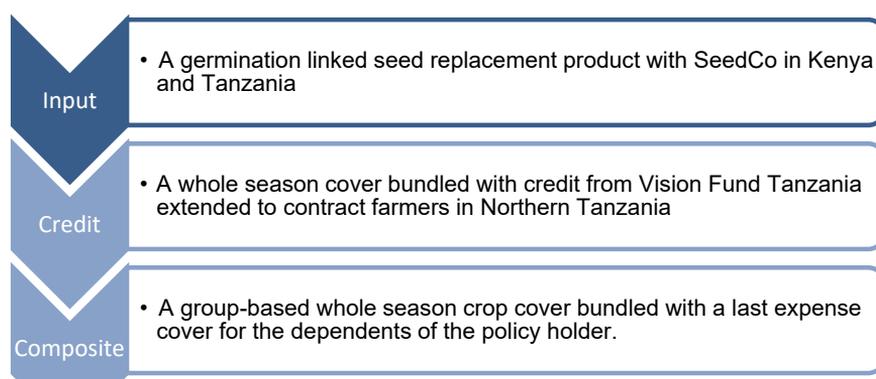
- input suppliers who want to ensure repayment of the products they sell on credit;
- outgrowers, buyers and other in organised VCs who want to secure the products for their industries and clients;
- bankers who want to reduce risk of financing agriculture, and
- governments who want to promote rural livelihoods without the need to intervene when weather and production shocks occur.

Insurance strategy and products

In recognition of the cost of direct smallholder engagement and the low levels of interest in direct payment by smallholders, the business model of ACRE Africa has evolved toward an aggregator-based approach and incorporated bundling for increased client value. This involves understanding the 'borrowed' value agriculture insurance would have from a bundle.

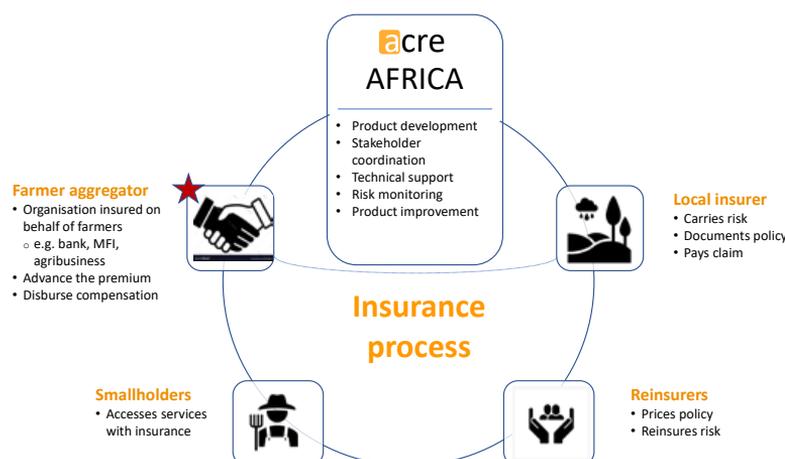
ACRE Africa's consideration for bundling

- Established market and distribution channel
- Lower aversion to purchase
- Value across different timelines



As an insurance intermediary, ACRE Africa works with many local insurers in East Africa and international reinsurers who do the underwriting. ACRE Africa also has its own actuarial team with the capacity to ability to develop products and their terms, coverage, and pricing with the local underwriters and reinsurers as well as the insurance aggregators for distribution. ACRE Africa is able to provide not only the linkages but also importantly the detailed understanding of agricultural information that is necessary in the provision of suitable products. The service provision is highlighted in the below diagram.

Figure 10.1: ACRE Africa agricultural insurance for risk mitigation



ACRE Africa works with multiple and diverse partners as shown in the table below. It not only helps in linking them with producers, building the capacities needed, and supporting in the structuring of insurance produces, but it also brings awareness of risk management issues that are pivotal for the reduction of production and farm risks with an aim of achieving affordability of agriculture insurance.

Table 10.1: ACRE Africa partners in Kenya, Rwanda and United Republic of Tanzania

Partner type	No.
Insurers, (Kenya – 5, Rwanda – 2, United Republic of Tanzania – 1)	8
Reinsurers	2
Agribusinesses	17
Financial institutions	10
Mobile network operators (Kenya and United Republic of Tanzania)	2

ACRE Africa has three main agricultural insurance product categories as described:

Weather index insurance (WII)

This is an innovative form of index insurance that covers farmers against weather-related extreme events. The product uses the amount of rainfall recorded to trigger compensation. For WII, compensation is paid when the rainfall recorded by weather stations or satellites during the cropping season is significantly above (excess rainfall) or falls below (drought) pre-defined thresholds.

Area yield index insurance (AYII)

This is a group-based coverage. The key feature of this product is that it does not indemnify crop yield losses at the individual field or grower level. An area-yield index product compensates according to yield loss or shortfall against an average area-yield that had (before the start of the season) been set out in the index in a defined geographical area (such as county, district or province). The holder of an area yield insurance policy receives compensation whenever the realised yield in the defined geographical area falls below the specified critical yield, regardless of the realised yield on the farm.

Hybrid index insurance

This a combination of the weather index and Multi-Peril Crop Insurance (MPCI), the traditional crop insurance. Combining the two products enables farmers to take advantage of the relative strengths of each. The weather index component provides a more objective way of assessing the impact of excess rainfall and drought on the crop and allows for the crop to be covered by insurance by planting cover. The MPCI component allows other risks beyond weather to be covered (such as pests, diseases, floods, frost, hail damage and wind damage).

Box 2.1: Product – Replanting Guarantee Product (RPG)

Product – Replanting Guarantee Product (RPG)

Product type – Phase specific WII

Piloted – 2011, Western Kenya

Current Countries – Kenya, Tanzania

Partners – SeedCo, UAP Old Mutual, Safaricom (Kenya), Airtel (United Republic of Tanzania), AGRA

The Replanting Guarantee protects farmers against insufficient rainfall during the germination phase of crop development. As farmers purchase quality seed or fertilizer, they register for the insurance pre-financed by the input company. Each farmer finds a card with a unique code in the bag. The card shows in simple steps how to register on a mobile platform. The location and planting date are obtained through registration and the cover period begins. If drought affects the crop, the farmer can either receive a mobile money transfer or a discount on the next seed or fertilizer purchase.

Costs of insurance provision and margins

Premiums vary according to the countries, VC or sector, and insurance company that provides the insurance. Premium ranges are generally as follows:

- Kenya = 10 percent
- Rwanda = 7 percent
- United Republic of Tanzania = 10 percent

As noted above, ACRE Africa is the facilitator and not the insurance provider. For its work on capacity development and guidance in structuring the products, ACRE Africa's fee is 15 percent of the final premium rate. This may be considered a low fee for their services, and as such, a second revenue channel for the organization is consultancy/ advisory services for product development, training and capacity building, risk and loss assessment in various countries.

The business case for smallholders is important but financially difficult due to their lack of disposable income. Household survey information from the CGAP **Kenya financial diaries** (CGAP, 2016) shows that even though 75-80 percent of the population is dependent on agriculture for its income, the agricultural shocks on farms rank below some other main risks: the death of the household income earner (a high impact but low frequency risk) and health (both outpatient and inpatient) are perceived as the next-biggest risks. These risks are considered when using a product-composite approach to bundling as agriculture insurance can 'borrow' value from products, addressing their more immediate needs. The survey also found smallholders have very few cash reserves. It is therefore apparent that insurance is important given the low levels of smallholders' personal savings and reserves, but that risk transfer products, such as insurance, must be fairly priced and offer a clear value proposition to farmers. This may convince them to convert their meagre risk reserves into formal risk transfer products.

Group organization issues

As a leader of innovation in addressing the low-cost delivery of smallholder insurance solutions, ACRE Africa supports the use of an aggregator model, with which it develops products best suited to farming groups.

However, groups often have their own weaknesses. Some these, and remedies used by ACRE Africa are:

Challenge	Remedy
Cooperatives have boards that change frequently	Provision of training to a wider number of farmers in the group
Cooperatives require the ratification of programs that affect members. Meetings are only scheduled at set times, delaying the processes	Season planning and undertaking joint business case preparation with potential clients
Different levels of understanding and trust in risk transfer solutions	Training, involvement in the product development process and the provision of contract review throughout the season to enhance the customer journey/experience

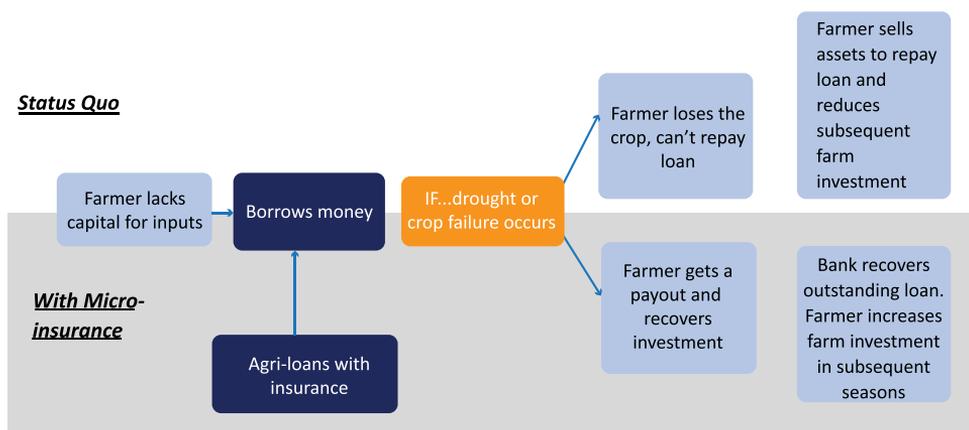
Insurance for financial organizations and aggregators

ACRE Africa has developed insurance products specifically for financial institutions to mitigate the risks associated with agricultural production and to improve loan portfolio performance.

Credit linked agricultural insurance

This insurance covers loans to farmers to purchase improved seed, fertilizer, crop protection and other production inputs, agricultural insurance and financial products form a natural partnership. This bundling protects credit institutions against widespread defaulting from large-scale severe weather events that directly affect farmers' ability to repay loans, and that cause a negative ripple effect in agri-VCs. The premium payment is pre-financed by the financial institution; the borrowing client repays it as part of the loan instalments. The agricultural loan cover was initially launched in 2010.

Figure 10.2: Credit-linked agricultural insurance

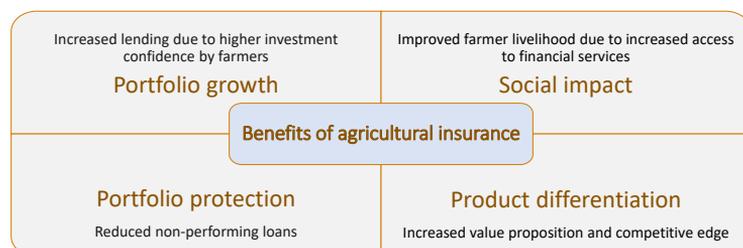


Financial institution portfolio coverage

Insures the value of the entire financial institution's agricultural portfolio against non-repayment from weather-related events. It covers loans to farmers and operators including processors, agri-transporters and traders in the agri-VC.

Key benefits for financial institutions include reduced losses owing to default, reduced provisions for bad debts, increased lending and re-enforced risk management. In this way, the financial institution reduces its systemic climatic risk and protects its loan portfolio.

Figure 10.3: Value proposition of agricultural insurance with loans



The effects of policy on insurance use

ACRE Africa has found it best to align its work with that of the government in Kenya and Rwanda. The governments of both Rwanda and Kenya have provided subsidies for agriculture insurance for smallholders. The main factor behind this is to shift from ex-post strategies to ex-ante strategies, improving smallholders' financial resilience to shocks. Government support:

- affects affordability among farming communities;
- benefits from insurance pay-outs and reduces dependence on relief;
- promotes food security as it encourages more production especially for target crops, and
- increases production for improved livelihoods as a result of steady commercialisation.

ACRE Africa's agricultural program has affected two significant changes in recent years. In 2012, under the Kilimo Salama programme, ACRE Africa re-focused from individual smallholder engagement to meso-level engagement with aggregated smallholder groupings like financial institutions, cooperatives, agribusinesses and development organizations, to contain program costs and have greater farmer out-reach.

In 2014, the Kilimo Salama program phase ended. Kilimo Salama was then packaged into a for-profit social enterprise, ACRE Africa, to continue providing suitable, affordable and accessible agriculture insurance solutions to smallholders.

Future directions of agricultural index insurance products and delivery

ACRE Africa and its predecessor program of Kilimo Salama have worked with a number of agricultural insurance program approaches, including micro input insurance, agricultural production index insurance using weather stations, and currently with GPS as well as area yield insurance. Area yield index insurance, as described earlier, is increasingly being observed to be attractive to smallholders and financial institutions since it covers more production risks.

ACRE Africa notes that with increased interest in the products, efforts need to be put in place to increase access to consistent and credible yield data.

Lessons learned

“Agricultural insurance is evolving and more adaptive and innovative approaches in its development and distribution is required”. Key lessons and observations made by ACRE Africa are⁶:

Box 2.2: Key lessons and observations made by ACRE Africa

General

1. As climate change adversely affects weather conditions, agriculture insurance is likely to become more expensive if no changes are made. Agriculture premiums, which currently average six percent and are considered expensive by smallholders, would rise even more with climate change.
2. The adoption of effective risk-reduction approaches would decrease smallholders’ risk exposure and would only enable them transfer risks that they would not be able to control for a more manageable premium.
3. Establishing trust is the first crucial element in the acceptance of insurance. Without facilitation and building groundwork for insurance provisions by organizations such as ACRE Africa, commercial insurance companies are reluctant to offer agricultural insurance, especially to smallholders.

Product

1. Rainfall measurement is important but Geographic information system (GIS) data is becoming more commonly used for indexing.
2. Local distribution channels through the use of aggregators are often essential to cost-effectively reach smallholders.
3. Mobile technology has opened opportunities for scaling agricultural insurance to smallholders and across the value chain.

Continuity

1. Smallholders are considered more difficult to insure and current surveys indicate smallholders find insurance expensive.
2. Agricultural insurance is costly and some level of subsidy is needed to reach the more vulnerable groups.
3. More learning and investment are needed to find the solutions to the widespread use of agricultural insurance.

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Anderson, J. & Ahmed, W. 2016. *Smallholder Diaries. Building the Evidence Base with Farming Families in Mozambique, Tanzania, and Pakistan.* Washington, DC, CGAP. (also available at www.cgap.org/research/publication/financial-diaries-smallholder-families).

Questions for discussion

1. Many smallholders are reluctant to pay for the risk reduction that insurance can offer. Is this due more to an inability to pay or because they prefer to play the lottery of risk?
2. Are subsidies inevitable for the provision of agricultural insurance to smallholders? Why or why not and how can they be funded?
3. What are three advantages and three disadvantages of using yield insurance as opposed to weather index insurance?
4. What message you would give VC actors to encourage them to use agricultural insurance? What is the message to the farmers? What is the message to the aggregators?

⁶ “A few key lessons and observations made”, Source ACRE Africa

Table 10.2: ACRE case study summary table

Name of case study innovation	ACRE – promoting insurance risk coverage for value chain partners and financiers				
Type of intervention	Agriculture insurance				
Sector and region/country	Agriculture <ul style="list-style-type: none"> Kenya, Rwanda and United Republic of Tanzania 				
VC And VCF innovation(s)	Agricultural index insurance products and aggregated delivery models				
Initiator and actors involved	<ul style="list-style-type: none"> ACRE Africa - Syngenta Foundation for Sustainable Agriculture, Grameen Agricole, Lundin Foundation. Kilimo Salama (original programme)- Syngenta Foundation for Sustainable Agriculture and Global Index Insurance Facility 				
Start date	<ul style="list-style-type: none"> ACRE Africa - 2014 Kilimo Salama - 2009 				
Business model and key actors in service provision	<ul style="list-style-type: none"> Partnership with insurance companies for insurance underwriting and delivery through agregators. 				
Insurance instruments	<ul style="list-style-type: none"> Crop insurance – weather index insurance, area yield index insurance, hybrid index insurance, Livestock insurance 				
Premium repayment	<ul style="list-style-type: none"> Embedded repayment through offtaker or financial institution is most common; but sometimes paid by government or others 				
Key results	Country	Farmers year to date	Farmers, cumulative	Sum insured, year to date	Sum insured, cumulative
	Kenya	291 261	959 864	71 698 556	135 437 649
	Rwanda	95**	390 589	37 547	8 901 510
	United Republic of Tanzania	27 137	168 427	3 657 667	33 250 184
	Total	318 493	1 654 111	75 393 770	159 651 488
**This dip in the farmer numbers in 2017 is attributed to regulatory challenges that delayed acquisition of the insurance license.					
Constraint and limitations	<ul style="list-style-type: none"> Cost of premium and willingness to pay Lack of data needed for yield and weather history 				
Lessons and recommendations	<ul style="list-style-type: none"> Sustainability and replicability Application of ICT Replicability works when contextualized to region and product Some target groups and agricultural insurance products require subsidy GIS, GPS and mobile technologies are important for effective service delivery 				

Annex 11: Nyala small farmer insurance in Ethiopia

Case prepared by Calvin Miller and Kindie Getnet

Overview and background

Nyala Insurance Share Company (Nyala) was founded in July as Nyala Insurance and has become one of the leading private insurance companies in Ethiopia. It has and birr 2 billion (USD 73,57 million) in assets and birr 50 million (USD 1,84 million) in subscribed capital. It offers three types of insurance services: general, life and micro-insurance. Nyala has approximately 250 staff working in 28 Service Centres, and 15 Contact Offices distributed across the country. It also works with ten banks, helping to reduce risk in their financing activities. Micro-insurance is a relatively small part of Nyala's overall operations in terms of volume but is important for many smallholders. This insurance is sold and operated through partnership with microfinance institutions (MFIs).

Micro-insurance products

1. Weather index crop insurance

Index-based insurance indemnifies smallholders based on changes in an index rather than an assessment of damages. It is based on specific weather parameters that are closely correlated with yield and measured over a specific period of time at a particular weather station. Nyala weather indexed insurance pays out indemnities when crop yields are affected by excessive rainfall, frost or drought. Weather index insurance is available for all crops but coverage is only for the production end of a VC, whereas multi-peril insurance can be applied throughout the VC.

The costs and difficulties associated with the assessment of losses is a challenge in conventional crop insurance, especially with smallholders. Therefore, a weather index approach based on weather indexes of rainfall/time period, heat indexes and wind indexes have proven to be a way forward for Nyala and other insurance providers. However, weather stations that are needed to accurately measure these variables are costly to put into place. But Nyala, as part of a pilot program from the World Food Program (WFP), the International Fund for Agricultural Development (IFAD) and other donors, has benefited from support to put such measuring devices in place.

A common problem in setting up the indexes is the basis risk, which is the difference between the loss experienced by the smallholder and the payout triggered. Correctly identifying the differences between losses and pay-outs received by the smallholders is complex and challenging. In addition, weather index insurance is currently not suitable to address pest and disease losses.

2. Multiple peril crop insurance

Nyala's multi-peril crop insurance service is available for specific agricultural crops: wheat, teff, rice, barley and beans. It has two distinct options for the coverage:

- option A - Production cost cover for drought – provides insurance coverage for crop production, i.e. (birr per hectare) x insured Area (hectare);
- option B - Expected yield loss cover – provides long term average yield insurance coverage, i.e. (tonnes per hectare) x pre-agreed value (birr per tonne) x insured area (hectare).

Basis of indemnity: In the event of a loss claim under the multiple peril policy, the payment will be based on benchmark sites selected prior to the commencement of the policy. The pay-outs as well as the premiums paid vary according to the region and the commodity.

Smallholders find the multi-peril crop insurance attractive since it covers the crops throughout the process from production through to harvest and postharvest. The health of the plants, pests and diseases for the Nyala farmer groups can be measured by satellite, making smallholder insurance feasible.

Livestock/herd insurance

Livestock insurance indemnifies the insured against loss or damage to insured stock during the period of insurance as a result of accident, illness and disease, smoke, fire, lightning and windstorm. Policies are generally offered on an annual basis. The animals that can be insured include milk cows and heifers, bulls and steers and calves. The coverage amount is the agreed value of the livestock.

Farmers who have livestock insurance can approach credit institutions and access credit using their insured livestock as more dependable collateral. Livestock insurance will benefit not only farmers but also their creditors. Their client's use of livestock insurance also helps the FIs gain from the lowered credit uncertainty and risk of repayment

Finance and insurance business model

Banks and microfinance institutions (MFIs) prefer that their clients buy insurance. There is a mutually beneficial relationship between Nyala and the financial institutions (FIs). For Nyala, it is more cost effective to offer a financial services as a package with loans. In this way, the collections and pay-outs can be done through the MFIs, and as an incentive; Nyala offers them a commission on the insurance sold. For the FIs, Nyala's insurance reduces their risk of financing to their clients.

Bundling finance and insurance was found to reduce the operational costs of insurance provision and make it feasible for Nyala to offer insurance to smallholders in a sustainable, cost-efficient manner.

In the case of livestock insurance, the farmers reduce their operational risks and the FIs reduce the risk of their clients not being able to repay. Also, insured livestock can be used as a form of collateral, thus allowing farmers access to more loans and the FIs the opportunity to expand their lending.

Nyala operates a microcredit program for smallholders using a group methodology. It provides between 500-1 000 smallholder groups with its yield and weather index insurance. The farmer groups are able to decide to use the insurance or not. The Nyala insurance program also works in partnership with many other MFIs.

Results and lessons learned

Nyala benefited substantially from support to develop its weather index insurance for smallholders. This investment and learning process benefitted the industry as a whole but without support, it remains hard for larger-scale replication.

The institution has found that insurance can reduce the risk to their smallholders and their financing to them. However, their staff indicate that the largest risk, when financing them, is poor management. Hence, shared risk through insurance is only one part of the package for risk reduction.

Contact information

Solomon Zegeye, www.nyalainsurancesc.com/

Questions for discussion

1. What are the advantages of bundling of insurance with finance shown in the Nyala experience? Are there also disadvantages to bundling? If so, what are they?
2. What is needed to reduce the risk of the clients' poor management practices? What can Nyala do in this regard? What can the government and development agencies do?
3. Compare the advantages and disadvantages of weather index crop insurance and multiple peril crop insurance for the smallholders. What would you recommend to them and why?
4. Compare the advantages and disadvantages of weather index crop insurance and multiple peril crop insurance for the smallholders. What do you think is better for Nyala and why?

Table 11.1: Nyala case study summary table

Name of case study innovation	Nyala small farmer insurance
Type of intervention	Bundled insurance and small farmer finance
Sector and region/country	Agricultural commodities in Ethiopia
Initiator of the VCF innovation	Nyala insurance share company with donor support
Actors involved in the financing	Nyala with microfinance institutions
Start date	2008
Primary focus of services	Reducing risk of small farmer agriculture and financing
Secondary motives (if applicable)	Commercial micro-insurance
Original source(s) of funds	Nyala, World Food Program, IFAD and other donors
Business model	Impact finance and insurance on commercial basis
Financing instruments used	Micro-insurance products: <ul style="list-style-type: none"> • Weather index crop insurance • Multiple peril crop insurance, with options of: <ul style="list-style-type: none"> – Production cost cover for drought – Expected yield loss cover • Livestock/herd insurance • Microfinance loans
Key strengths and weaknesses of the approach/instrument(s)	<ul style="list-style-type: none"> • Bundled services reduce costs of insurance • Use of group services for microfinance • Cost concerns of small farmers reduces interest
Key limitations	<ul style="list-style-type: none"> • Systemic risk of agriculture, mitigated in part by large, non-agricultural insurance products of Nyala • Basis risk
Persons receiving financing	<ul style="list-style-type: none"> • 500 to 1 000 farmer MF groups receiving insurance per season
Interest rate (explicit or imbedded)	<ul style="list-style-type: none"> • Insurance costs linked with MF interest costs
Repayment rate	<ul style="list-style-type: none"> • Relatively high
Estimated finance cost	<ul style="list-style-type: none"> • Commercially sustainable income generation for services

Annex 12: Portfolio guarantee as an instrument for agricultural value chain financing in Senegal

Case prepared by Calvin Miller and Souleymane Sarr

Overview and background

Cereals and grains are important for Senegal's economy, to not only reduce the increasing volume and cost of imports to meet the demand, but also for the economic livelihoods of smallholders and their rural communities. Faced with this scenario, the Alliance de Crédit et d'Épargne pour la Production (ACEP) [Credit and Savings Alliance for Production], a leading agricultural financial service provider partnered with the USAID Development Credit Authority (DCA) to provide loan guarantees to spur lending to selected sectors. This urgency was also prompted by structural changes in agriculture which resulted in growing smallholder debt. Hence, ACEP ask for the DCA guarantee to mitigate the risk of delinquency, as well as to increase lending to grow its competitiveness in agricultural VCs. The DCA guarantee agreement, which was typical of DCA guarantees in other countries, provided ACEP with shared-risk coverage of the credit risk present in agricultural VCs, in case of borrower default.

DCA guarantee

The DCA guarantee was a portfolio guarantee to ACEP's agricultural VC loans, and not to any type of loan, but within the VC it included all actors. A portfolio guarantee covers the shared losses of all loans in the agreed portfolio, within agreed time frames and conditions. Hence loss pay-outs are not determined by individual losses but over the lender's portfolio, which is much less costly to administer.

The ACEB-DCA contract conditions included the following:

Borrowers covered:

- micro and small enterprises (MSEs) active in the development of agricultural VCs (AVC) in Senegal; these include, but are not limited to, producers, transporters, processors, warehouse managers and exporters, and
- agricultural value chain MSEs must have less or equal to 100 staff and an annual return less or equal to CFA 500 million (approximately USD 1 million).

Contract conditions:

- seven-year contract, with the last guarantees made six months before the end date of September 2017;
- maximum borrowing amount per borrower (cumulative) of CFA 50 million;
- a cumulative total of USD 8 million in loans guaranteed'
- payment of a participation use commission of 0,5 percent per year, and
- a 50-50 percent shared guarantee coverage on the loan portfolio designated for the AVC actors.

It is important to note that the guarantee was applied with a focus on the VC actors and not to any type of loan for agriculture. This reduced the risk of lending to both DCA and ACEP.

The DCA guarantee was a portfolio guarantee to ACEP's agricultural VC loans, and not to any type of loan, but within the VC it included all actors. A portfolio guarantee covers the shared losses of all loans in the agreed portfolio, within agreed time frames and conditions. Hence loss pay-outs are not determined by individual losses but over the portfolio, which is much less costly to administer.

The ACEP-DCA contract conditions included the following:

Business model and financing

ACEP financing and the guarantees followed a buyer-driven, contract farming business model in its VC financing. In order to implement the VCF it first invested heavily in its own capacity development and that of the VC actors. It also undertook analysis and modelling in the selected sectors. These activities included:

ACEP in-house development

- creating an "Information Guide on Agricultural Value Chains";
- training technical staff on selected agricultural VCs;
- training 60 credit agents, active in rural and agricultural areas on agricultural VC financing, and
- implementation of integrated financing models for the rice, millet and maize VCs.

Box 3.1: DCA fee on portfolio

Example of DCA fee on portfolio	
• DCA share of the guarantee:	50 percent
• Annual user fees:	0.5 percent
• Balance 31 March 2017:	2 000 000 USD
• Balance 30 September 2017:	4 000 000 USD
Semester phases	
• Average of the outstanding amount in the period 1 April – 30 September =	$(2\,000\,000 + 4\,000\,000) / 2 = 3\,000\,000$
• DCA shared part of the average under guarantee =	$3\,000\,000 \times 50\text{ percent} = 1\,500\,000$
• Half-year scale user fees =	$0.5\text{ percent} / 2 = 0.25\text{ percent}$ for fee calculation = $0.25\text{ percent} \times 1\,500\,000 = 3\,750$

Producer and VC actor capacity development

- implementation of a mass education program for the benefit of 500 producers;
- organization of public awareness campaigns focused on product offer, credit management, and the need to structure the demand for financing according to the principles of contract farming;
- organization of a five-day training session for 35 PO representatives that work in financing models for VCs aimed at managing and monitoring credit. This included the organization of five exchange one-day workshops (one day per workshop) with the farmers' cooperatives, the farmers' network and manufacturers and a USAID-PCE (Economic Growth Project) team to develop or adapt financing models for the irrigated maize and rice VCs, and
- financial coaching to producer organizations and agribusinesses, with support by USAID-PCE.

The buyer driven model operational process can be explained in the following example for rice with the Vital Company.

Box 3.2: White rice value chain

White rice value chain

1. **Signing of the marketing contracts for white rice**, and specification of the standards of quality between **Vital** and the **retailers**, with advance or guaranteed agreement.
2. **Preselection of the economic interest group (GIE) on the basis of their credit history and their performance**, with respect to the Centre for Management and Rural Economy (CGER) and the National Agricultural Credit Fund of Senegal (CNCAS), for the negotiation and signing of the contract for paddy commercialisation with Vital subject to obtaining credit.
3. **Expression of financing needs** on the part of the producers, consolidation at GIE, UNION and SAED level. The CGERs assist in expressing the needs (cash flow plan, campaign budget and operating account).
4. **CNCAS credit committee** meeting and financing of GIE with pledge contracts and directly enforceable guarantees.
5. **Consolidation of the BL at union level for collective purchase orders** and price information requests to the suppliers.
6. **Provision of inputs for production**, monitored by the CGERs according to the specification of the input request specifications received and analysis of the gap between the value of the BL and the value of the inputs received.
7. **Risk management of the potentially poor technical performance of the producers**, with monitoring of the quality of paddy production through sampling done by the SAED.
8. **Planning of post-harvest activities**, with the service providers, the SAED and the unions, including integration the contractual delivery schedule provisions between VITAL and the producers.
9. **Placing the production in storage**, with compliance controls as required by the contract and issuance of a storage receipt on the part of the CGERs with certification from Vital.
10. **Conformity check of the value of the storage receipt and the quantity in stock** by the CNCAS and payment balance in case a quantity of paddy is stored that is equivalent to the credit as planned in the contract with Vital.
11. **Consignment of stock and marketing credit agreement to CNCAS/VITAL** with a deposit as a guarantee constituted with the discount of the guaranteed agreements provided by the retailers.
12. **Emission of a removal order** for VITAL by the CNCAS, destocking done in line with documentation by the CGERs.
13. **Rice processing and marketing on the part of VITAL**, with the revenues held at CNCAS.
14. **Repayment of VITAL credit and organization of a debriefing workshop**, with a presentation of the economic analysis of the campaign on the part of the CGERs.

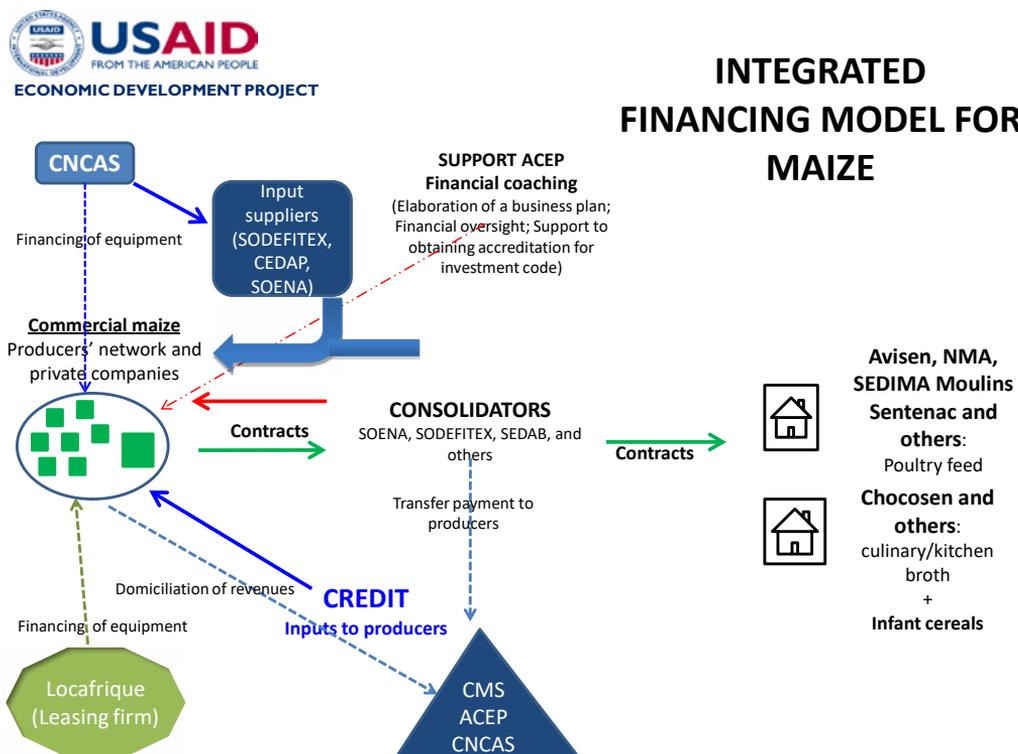
Key actors, partnerships and roles

The key to success was to involve all of the key players in the process through discussion, joint modelling and implementation support. The key players in the ACEP financing model were:

- ACEP – senior management and staff, who supported the implementation of a VCF approach and training and the credit agents who carried out the financing and guarantees;
- DCA – guarantee and support in the guarantee design;
- USAID-PCE – project support and capacity building;
- producer organizations – promoting and supporting the implementation, and
- agribusiness firms – input suppliers, aggregators and buyers.

The schematic below for the maize sector highlights the roles of the key actors along with others involved in the AVCF process.

Figure 12.1: Key actors in AVCF process



Results and lessons learned

Lessons

The success of the loan guarantee program implemented in ACEP was due not only to the portfolio guarantee, but importantly to the approach used by ACEP to lower the overall risk through the use of a contract-farming approach and the extensive capacity building done with the credit agents, as well as producer organizations. Even so, the overall number of participants in the program was not high, possibly limited by the contract farming requirement.

While the DCA guarantee recently completed its contract life cycle, the need for a follow-on portfolio guarantee is likely not needed since the AVC finance approach is now well tested in these commodities and losses have proven to be low and manageable by ACEP.

Forward thinking and recommendations

The ACEP AVCF program has not reached its potential scale of operations and inclusion given the overall size of its clientele. Evaluation and assessment are recommended to understand the bottlenecks from increased participation of its clientele.

Questions for discussion

1. What are three essential elements that contributed to the success of the ACEP-DCA loan guarantee program?
2. Do you recommend that ACEP renew its loan guarantee facility with the DCA? Why or why not?
3. How could ACEP increase the participation of its clientele in the AVCF program? What process is needed to better understand the bottlenecks to increased participation?
4. Can the DCA guarantee facility work in your country, and/or your institution? Alternatively, can another type of guarantee facility work better, and if so, why?
5. The ACEP model raises a question of continuity. After the success of the seven-year guarantee program for some smallholders, will other smallholders in the sector or in other sectors be left behind from a lack of credit? Is there an opportunity or a need for a governmental or private guarantee program?

References

Miller, C. 2017. Interview with Souleymane Sarr, Deputy General Director, Alliance de Crédit et d'Épargne pour la Production (ACEP). [audio]. Addis Ababa. [Cited 9 October, 2017].

Table 12.1: ACEP portfolio guarantee summary table

Name of case study innovation	Portfolio guarantee as an instrument for agricultural value chain financing in Senegal
Type of intervention	Use of portfolio guarantees and integrated agricultural VCF; some use of leasing and warehouse receipts
Sector and region/country	Rice, millet and maize in Senegal
VC and VCF innovation(s)	Portfolio guarantees and VC credit agent training
Initiator and actors involved in the financing	Alliance de Crédit et d'Épargne pour la Production (ACEP) [Credit and Savings Alliance for Production]
Start date	1985 (guarantee program from 2010)
Business model and key actors in service provision	ACEP, as agricultural financial service provider, and USAID Development Credit Authority (DCA) as Guarantor
Financing instruments used	<ul style="list-style-type: none"> • Service provided • Source(s) of funds <ul style="list-style-type: none"> • DCA portfolio guarantee for seven years covering agricultural value chains of MSEs including producers, transporters, processors, warehouse managers and exporters. • Funds from ACEP member savings and equity (42 500 million CFA in deposits and equity)
Financing	<ul style="list-style-type: none"> • Guarantee fee • Loan volume under guarantee • Loan defaults • Loss amount covered <ul style="list-style-type: none"> • 0.5 percent per year for 50 percent guarantee coverage • 3 379 million CFA (USD 9 million) in 2015. • 175,7 million CFA (4,4 percent) in 2012 • 87,8 million CFA
Key results	<ul style="list-style-type: none"> • Amount financed/year or crop cycle • Persons/families involved <ul style="list-style-type: none"> • Approximately 3 500 million CFA per half-year • Approximately 3 000 small farmers per half-year (out of 48 750 active ACEP borrowers)
Constraints and limitations	<ul style="list-style-type: none"> • Extensive training needed for loan agents • Overall number of clients participating
Lessons and recommendations	<ul style="list-style-type: none"> • DCA guarantee program was successful for contracted 7 years lifespan; continued need for guarantee is not anticipated • With comprehensive training and a VCF approach, losses for the guarantee fund were low • Replication in similar situations is feasible • Coordination and “buy-in” of all stakeholders contributed to the success

Annex 13: Incentive-based risk sharing facilities for agricultural lending in Africa

Recognising that risk is the leading constraint of agricultural lending, governments in several countries in Africa have established risk-sharing facilities. In all cases the approach has been to combine multiple risk sharing tools and interventions comprising both financial tools and incentives. The Government of Nigeria was one of the first governments to set up an incentive-based risk sharing system to help address risk in a comprehensive fashion. This was followed by somewhat similar initiatives in other countries, which are summarised and compared below.

NIRSAL, Nigeria

The Central Bank of Nigeria and others working in the Nigerian agricultural sector identified six critical challenges for agriculture in their country, namely a) broken agricultural VCs, b) a lack of understanding of agriculture by the banking sector, c) perceived high risks, d) an absence of collateral, at least in terms of conventional collateral, e) complex loan assessment processes, and f) high transaction costs for both the lender and borrower.

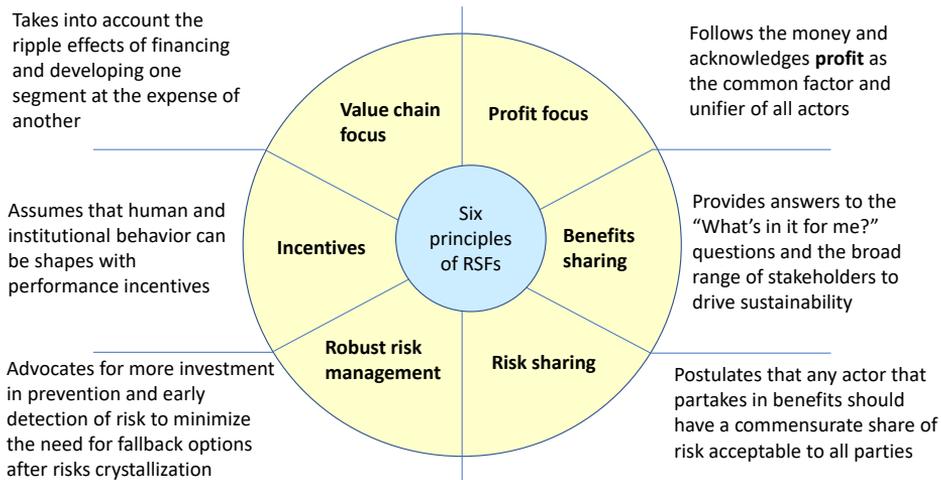
The NIRSAL incentive-based risk-sharing system is meant to provide an inclusive approach to increased lending by reducing the credit risks through guarantee support, agricultural risk through insurance, capacity building through technical assistance, and market risk through promoting VC development and market access.

NIRSAL is an independent public company owned by the Central Bank of Nigeria whose job is to facilitate finance to all actors throughout the agricultural VCs. In addition to risk sharing and technical assistance to banks, it provides them with incentives to lend to the sector and ratings on the effectiveness and social impact of their lending to agriculture. The government also works to provide a favourable fiscal and regulatory environment for them and the VC actors. NIRSAL is an ambitious and costly program so it focuses its efforts on the VCs of six pilot crop sectors with high-potential: tomatoes, cotton, maize, soybeans, rice and cassava.

The USD 300 million risk-sharing facility for credit guarantees partially reimburses bank losses on agricultural loans. It covers bank losses ranging from 30 percent to 75 percent of a loan's face value depending on the VC segment. A subsidised guarantee fee of only one percent per annum on outstanding protected principal and interest is charged. Furthermore, as a repayment incentive, up to 40 percent of the interest cost is rebated if the loan remains in good standing (no partial or full default). All crops, livestock and related supportive economic activity across the VC are supported by this facility. NIRSAL supports smallholders and other VC actors through technical assistance, if needed, to help fix the weaknesses in the VCs that they are guaranteeing through their guarantee facility. This furthermore contributes to improved smallholder capacity to repay. Production loss risk is also reduced by expanding the country's agricultural insurance program with weather index insurance.

As shown in Figure 13.1, NIRSAL comprises six principles. It takes a VC and profit focus in order to ensure that financing is directed towards agricultural activities that have good potential and strong linkages to markets and technologies. It helps both borrowers and lending institutions by providing direct subsidies of interest rates and good repayment incentives, as well as agricultural insurance support. It provides guarantees for the lenders as well as capacity development. Risk is not only shared through the guarantee mechanism but also through a focus on management of risk, including through loan appraisal improvements, technical support and through the promotion of VC linkages and offtake arrangements.

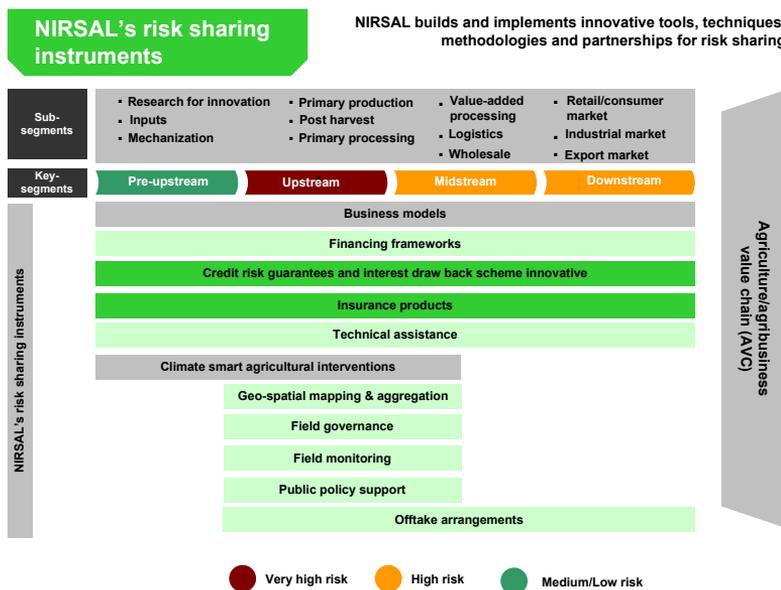
Figure 13.1: NIRSAL risk sharing facility in Nigeria



Source: adapted from A. Abdulhameed, NIRSAL

NIRSAL's implementation of its risk-sharing facility spreads across the VC is shown in Figure 13.2 (below). Its products span the VC spectrum but since primary production and harvesting is deemed to be a very high risk, emphasis is given to areas with less risk along the spectrum. Hence, the risk sharing, VC development and policy development work hand in hand.

Figure 13.2: NIRSAL approach to implementation



Tamwil El Fellah, Morocco

Credit Agricole du Maroc (CAM) is a universal agricultural development bank with investment and commercial bank activities, which has adopted a holistic integrated VC approach focusing on the overall “ecosystem” to provide many tailored financial products and services to different market segments, including smallholders who meet the prudential requirements of CAM. These services can be provided to individuals or groups. However, in order to serve the non-bankable segment of the market, namely smallholders, in 2010 GCAM established a subsidiary, Tamwil El Fellah (TEF), which has distinct requirements and does not require traditional collateral. For risk-sharing, since collateral is not required, the government supports a guarantee facility to share the credit risk with the low-income rural clients who are in Tamwil El-fellah.

CAM works with large and small agribusinesses and all segments of the main agricultural VCs. In collaboration with governmental programs and the Central Bank, it introduced the following innovations to address the risks:

- proximity to the clients through decentralised decision-making and links with actors across the VCs that facilitate loan assessments based on the viability of the agribusiness enterprise rather than collateral;
- technical support in partnership with government programmes to bring non-financial services to clients, such as extension, technical assistance for investment planning, and programmes providing specific subsidies;
- customer service, with client feedback and environmental assessments with contingency plans for managing droughts or low prices;
- credit appraisal is distinct between CAM and TEF. For CAM, there is a weighted score for the collateral guarantee as well as for the performance. For TEF, which does not require collateral, the focus is on the client’s previous history and repayment behaviour and on performance indicators;
- government guarantee fund for Tamwil El fellah with risk coverage of 60 percent, and
- life insurance and subsidised agricultural insurance for smallholders.

Risk mitigation is also addressed through the types of financing offered to its clients. For example, irrigation financing and mechanisation are promoted as access to water and timely cultivation both reduce the risks of low yields or crop losses. Technical support to improve production and marketing capacity also helps reinforce the risks of the smallholders’ ecosystem. The Tamwil El Fellah/GCAM credit scoring system takes into account these factors in addition to the typical scoring risk factors.

The Ghana incentive-based risk sharing system for agricultural lending (GIRSAL)

GIRSAL is a cedi 400 million (approximately USD 80 million) risk-sharing initiative by Bank of Ghana in collaboration with the Ministry of Finance and the Ministry of Agriculture in Ghana that seeks to de-risk the full length of selected agricultural VCs in order to attract increased private sector lending. The objectives are to increase production, thereby reducing the food import bill and save foreign exchange, increase exports of agricultural products thus generating additional foreign exchange, and increase the incomes and food security of farmers. It does this by providing incentives and risk mitigation instruments to address the constraints that agricultural VC actors face when accessing credit from financial institutions. It is an integrated risk-sharing scheme with six inter-related pillars working together to improve smallholder access to institutional credit. The pillars, as depicted in Figure 13.3 are: a) risk-sharing facility with a credit guarantee of up to 80 percent; b) technical assistance facility; c) agricultural insurance scheme for farmers; d) bank rating system, e) bank incentive mechanism, and f) a digital finance platform to facilitate effective lending to agriculture. Below is the schematic form of the pillars.

Figure 13.3: GIRSAL risk sharing pillars



GIRSAL has been registered as a company limited by shares and its main goal is to double lending to agriculture in five years and quadruple it in ten years. In order to ensure that lending institutions lend prudently to agriculture, all lending institutions willing to work with GIRSAL are required to have agricultural departments, units or at least a desk with requisite expertise for agricultural lending.

Programme for rural outreach of financial innovations and technologies (PROFIT), Kenya

PROFIT is a six-year programme funded by the International fund for agricultural development (IFAD), the Alliance for a Green Revolution in Africa (AGRA) and the Government of Kenya. Its goal is to reduce rural poverty in Kenya targeting smallholders, pastoralists, artisanal fishers, women, landless labourers and youth. It has three components:

- rural financial outreach and innovation;
- technical support services, and
- project management.

The Agriculture Finance Corporation (AFC) and Barclays Bank are some of the implementing institutions interested in participating in the risk-sharing programme. AFC is a government-owned credit-only development finance institution (DFI) mandated to assist in development of agriculture and agricultural industries by making loans to farmers, co-operative societies, and incorporated groups while Barclays is a renowned international commercial bank. Compared to similar interventions in the past, credit guarantee programmes have only targeted commercial banks. One example is Equity Bank's Kilimo Biashara loan project (2008). A USD 50 million loan project that targeted agricultural SMEs with no collateral. Under the project, AGRA and IFAD provide a ten percent first loss guarantee (5 million USD), partially reducing the risk of lending by Equity Bank.

One of the unique features of PROFIT was therefore the inclusion of a government-owned institution that generally provides subsidised credit to agricultural borrowers. PROFIT used a non-targeted inclusive approach through an Expression of Interest that invited lending institutions to participate in the programme. Participating institutions were expected to meet certain eligible criteria and conditions.

The AFC risk sharing model follows a VC finance approach in its agricultural lending and its risk management. As shown in Figure 13.4, its risk profiling begins with identifying the risks. In order to ensure that clients qualify for the PROFIT risk sharing facility, it wants to know about the proposed risks and profit generation of the proposed venture as well as the capacity and risks of the clients. Important in the process is to follow both the assessment of the five 'C's of lending (character, capacity, capital, conditions and collateral), plus the sixth 'C' of cash flow along with an analysis of the health of the VC, with a preference for agricultural enterprises with secured VC agreements.

The multi-faceted PROFIT risk-sharing facility allows AFC and banks to reach out to potential clients who are deemed a higher risk. This is because the programme can draw on technical and business support for the clients as needed according to the risks identified in the profiling.

Figure 13.4: African Finance Corporation steps in risk profiling

AFC risk profiling process

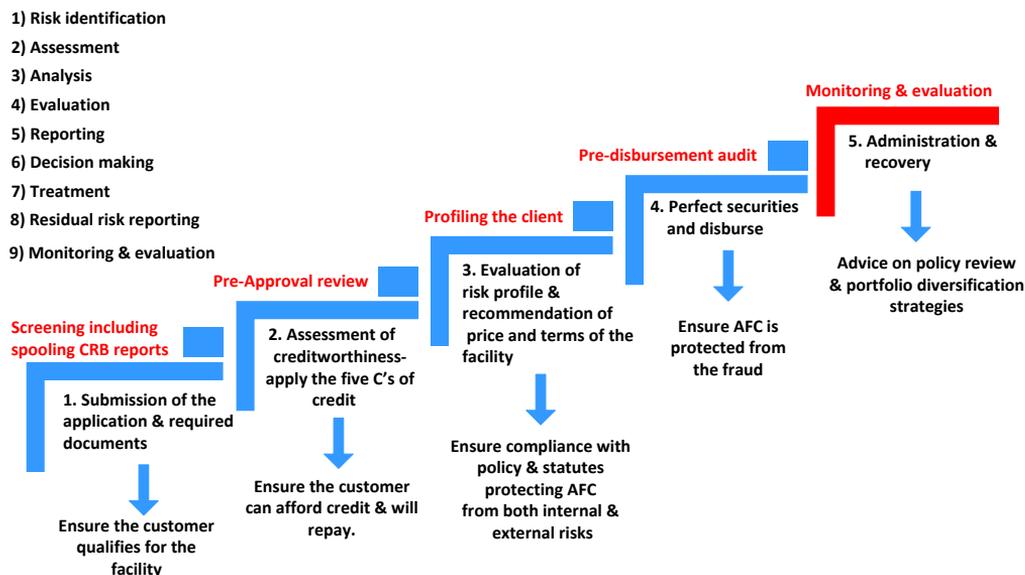
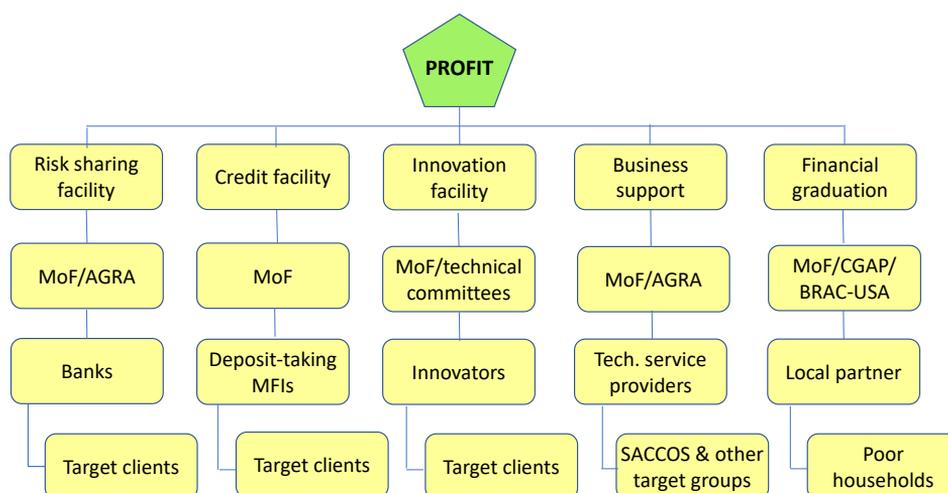


Figure 13.5 denotes the various support facilities, services and partners involved in PROFIT. As shown, it not only reaches out through banks but also includes NGOs and local Saving and Credit Co-operatives (SACCOs) as part of its outreach. One of the innovator support mechanisms is the use of information and communication technology (ICT) for technical assistance queries and client communication. Insurance also forms part of the package of services in the programme in order to share risk and reduce collateral requirements.

Figure 13.5: PROFIT risk sharing facility in Kenya



As shown in Figure 13.6 below, RARSFF has five areas of focus. First, in order to enhance private lending to the agricultural sector, a loan guarantee program is provided. For agricultural borrowers, a highly-subsidised agricultural insurance program is provided with a focus on livestock and some priority sectors. A technical-assistance facility is aimed at building capacity for both financial institutions and borrowers with an aim to increase outreach and the volume of lending to the sector. As in the other example, the facility provides a VC focus and provides incentives for VC linkage development. Finally, it builds on the country's digital finance infrastructure to reduce transactions costs and facilitate outreach.

Figure 13.6: Five pillars of RARSFF

Risk sharing facility	Insurance facility	Technical insurance facility	Value chain de-risking	Digital insurance
Share lending risks with banks (e.g. on a first loss or risk sharing percentage)	<ul style="list-style-type: none"> Deepen role of insurance in agriculture to reduce lenders' and borrowers' risk Facilitate creation of demand for agri insurance 	<ul style="list-style-type: none"> Build capacity of financial institutions Build capacity of agri VCs Link lenders to borrowers Expand financial inclusion 	Create appropriate incentive mechanisms that move farmer cooperatives to target increased productivity and efficient management	<ul style="list-style-type: none"> Leverage existing mobile technologies to ensure low cost financial distribution and outreach Improve information on agri-finance clients for lenders

Within the above structure, it is worth noting the attention given to insurance through the National Agriculture (crop and livestock) insurance scheme.

Its objectives are to de-risk agricultural VCs and provide incentives for financial service providers by working to:

- manage risks and improve smallholder livelihoods (notably through their cash incomes, food security, nutrition and resilience to shocks);
- increase access to financial institutions and credit, and
- make effective use of government subsidies and provide standard insurance contracts and create a national level database.

Learning through doing

The five highlighted cases of African agricultural risk-sharing facilities share many similarities. Several are relatively new and all are in the process of learning and being modified based on their own experiences and those of others. All involve a comprehensive, multi-faceted approach to addressing risk. Common elements include: a) a VC approach; 2) use of guarantee mechanisms to share risk of lending; 3) use of agricultural insurance; 4) provision of technical assistance and support, and 5) incentives for both agricultural borrowers and lending institutions. A final similarity is that they are not without considerable cost to the government and/or the donors supporting the initiatives. However, the objectives of all is that investments in costs will have significant economic and social returns.

Questions for consideration

1. What are the key similarities and key differences of the four-country risk-sharing facilities described?
2. If you were a development agency, would you support these types of comprehensive risk-sharing models of agricultural financing? Why or why not? What alternative approaches or changes could be considered to increase their effectiveness?
3. Please rank (1st, 2nd, 3rd, etc.) the following aspects of the risk-sharing facilities in terms of cost effectiveness:
 - value chain development
 - use of a guarantee fund
 - agricultural insurance
 - technical assistance
 - subsidies and incentives
 - policy improvements and regulations
4. Please explain your rationale for your ranking.
5. Should your country or all African countries consider to develop and implement an agricultural risk sharing facility? If so, what would your message be to the leaders as to why it is justified and should be prioritized?

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Table 13.1: Summary comparison of incentive-based risk-sharing systems for agricultural lending in Africa

Name of case study innovations	Incentive-based risk-sharing systems for agricultural lending in Africa
Type of intervention	Comprehensive risk-sharing facilities
Sector and region/country	Ghana, Kenya, Morocco, Nigeria and Rwanda
VC and VCF innovation(s)	Value chain approach for agricultural lending and risk management
Initiator and actors involved in the financing	Central Bank and/or donor agencies
Business model and key actors in service provision	Policy directive by Government or Central Bank
Financing instruments and services	<ul style="list-style-type: none"> • Value chain development support • Guarantee mechanisms • Agricultural insurance • Subsidies in interest • Incentives of lenders and borrowers • Technical and business development assistance
Source(s) of funds	Government and donors
Constraints and limitations	<ul style="list-style-type: none"> • All programmes have substantial subsidy costs • Programmes in three of the countries are quite new and the costs and some programme aspects are yet to be fully tested
Lessons and recommendations	<ul style="list-style-type: none"> • All are following a value chain approach and a comprehensive risk mitigation strategy • All recognize that at the smallholder and micro and small enterprise level need financial innovation and adaptation, often with special conditions • All are in a learning and adapting mode and ongoing lessons should be documented

Annex 14: Facilitating agricultural value chain finance and price discovery through the Ethiopia Commodity Exchange (ECX) and warehouse systems

Case prepared by Calvin Miller with support from Netsanet Tesfaye

Ethiopia has an agriculture industry and rural-based economy accounting for almost half of its GDP, about 90 percent of exports, and 85 percent of total employment. Improving the living standards of its smallholders by strengthening and modernising the VCs of its principal commodities was a priority. This included not only agricultural extension and technologies to promote the increased production, but also storage and marketing. The country is also highly dependent on the export of agricultural products with coffee, which is highly traded on the global scene, as the leading export. In this context, in 2009 the government started the Ethiopia Commodity Exchange (ECX) to improve the efficiency and transparency of trading. The country is highly dependent on the export of agricultural products. Coffee is the leading export (about 23 percent of export income).

ECX has not received government budget funding since it became fully functional, but it does receive policy support which has been instrumental to its success. The government has undertaken various activities to improve the national regulatory framework in order to enhance the rural financial sector. The formal financial sector is largely dominated by state institutions, especially in the rural and agricultural sector. There is also a growing presence of microfinance institutions in rural areas but few with significant agricultural financing services. Overall, financing agriculture is less attractive since the Ethiopian agricultural sector suffers from low levels of profitability and there are limited economies of scale and high transaction costs for financial institutions serving agriculture.

One of the key issues for smallholders is a lack of input credit, especially for quality seeds and fertilizer. This has, in part, been caused by the widespread practice of channelling government-subsidised input credit through cooperatives and cooperative unions. It contributed to high levels of non-performing loans as these institutions were unable to assess customer risk and price properly and/or farmers perceived the loans funds originating from the government through the cooperatives as a government subsidy. As a consequence, while cooperatives still have access to agricultural inputs using government credit guarantees, fertilizer access for farmers is now primarily cash-based, although there have been some attempts to facilitate input credit through linking input sales with MFIs.

ECX Commodity Exchange

The establishment of ECX as a commodity exchange platform substantially helped to increase cash flows into the coffee, sesame, and pea bean VCs. Coffee and sesame comprise approximately 69 percent and 28 percent of all exchange platform trading respectively. The ECX clearing and settlement system helps to efficiently transfer huge amounts of money from buyers to sellers. It also guarantees trade, thereby much improving the contract execution culture. Within the exchange traded commodities, ECX has improved market conditions for Ethiopian producers, with effective payment and physical delivery procedures guaranteed for both sellers and buyers. Additionally, the government has information on every transaction and has a clear understanding of these markets (sesame, coffee, and pea beans). However, other commodities do not have access to the ECX exchange, although they can be used in the warehousing system.

Initially the trading platform was operated through an open call system in ECX headquarters in Addis Ababa. However, this was transformed to electronic systems and in 2016, approximately 98 percent of all trading was electronic. To increase its outreach, ECX established e-trade centres in three cities in Ethiopia and more are planned. ECX has approximately 347 members of which 9,5 percent are cooperative unions (33) representing 2,8 million small-scale farmers; 89 percent are wholesalers, exporters, commodity suppliers (308); and 1,7 percent are industrial processors. Some of its services have benefits beyond its members.

The ECX traded a combined value of more than USD 6.3 billion from 2008 to 2014 and continues to expand. Its income is generated through services fees. It receives a commodity exchange trading fee of 0,01-0,02 percent on sales, plus service fees from sharing price information via SMS. It earns some income from shares sold on tender and seed sales, and also generates warehouse management fees.

Warehousing and commodity management services

The ECX commodity exchange provides warehousing as part of the exchange system's services. Such warehousing was done on a short-term basis and warehouse receipt financing was possible, albeit constrained by the short-term nature of the commodities stored. There was a much greater need for the warehouses and commodity management services than could be done under the ECX system's capacity. Warehouse management was one of ECX's largest expenses. ECX collected a low fee in order to encourage demand and as it grew there was a general shortage of warehouses in Ethiopia, and ECX was using all available warehouses. It looked to transfer this function to a third party but private warehouse companies were not interested in entering this business, as at ECX rates it is not profitable. In 2015 the government set up the Ethiopia Agricultural Commodity Warehouse Enterprise Service with 21 branches and 58 warehouses and the ECX warehouse management system was spun off into that service.

In 2017 the warehouse management moved back under ECX control, which improved efficiency in tracing and trading. Up to this point the products stored and traded, namely coffee and sesame for the most part, were traded as commodities. They were delivered to the warehouse, quality checking and given an owner identification, and then offered for sale through online trading in ECX. The average wait time was 17 days.

The requirements for tracing necessitated the system's change. Now coffee is traded as part of a bonded system. In this way, the identity of the coffee producer is preserved. Today, when coffee is brought in, it is checked for quality and standards while still on the truck, and the time between delivery and the trading time has been reduced to three days. Coffee, for example, has nine grades, the top four of which are traded internationally. Warehousing is offered online to buyers and suppliers. The commodities stored at ECX warehouses by producers, producer cooperatives and aggregators are: coffee, sesame (grade #2), red pea beans, white pea beans and mung beans as well as wheat and maize, which are paused at present. Suppliers require the seasonal storage of seeds of all commodity types.

The ECX services and warehousing combination is particularly useful for price discovery of daily prices and futures and the ability for farmers and their organizations to store in order to obtain a higher price. ECX provides daily market prices for the commodities in four languages – Amharic, English, Oromifa and Tigrinya. These are available on price tickers on moving electronic billboards, at the warehouse and through SMS messaging. ECX receives a percentage of the Ethiopian Telecommunications SMS revenues to help pay for its price sharing services. In addition, regional governments also relay the market price information, sometimes for free or through SMS instant call back services.

Figure 14.1: The ECX WHR financing flow chart

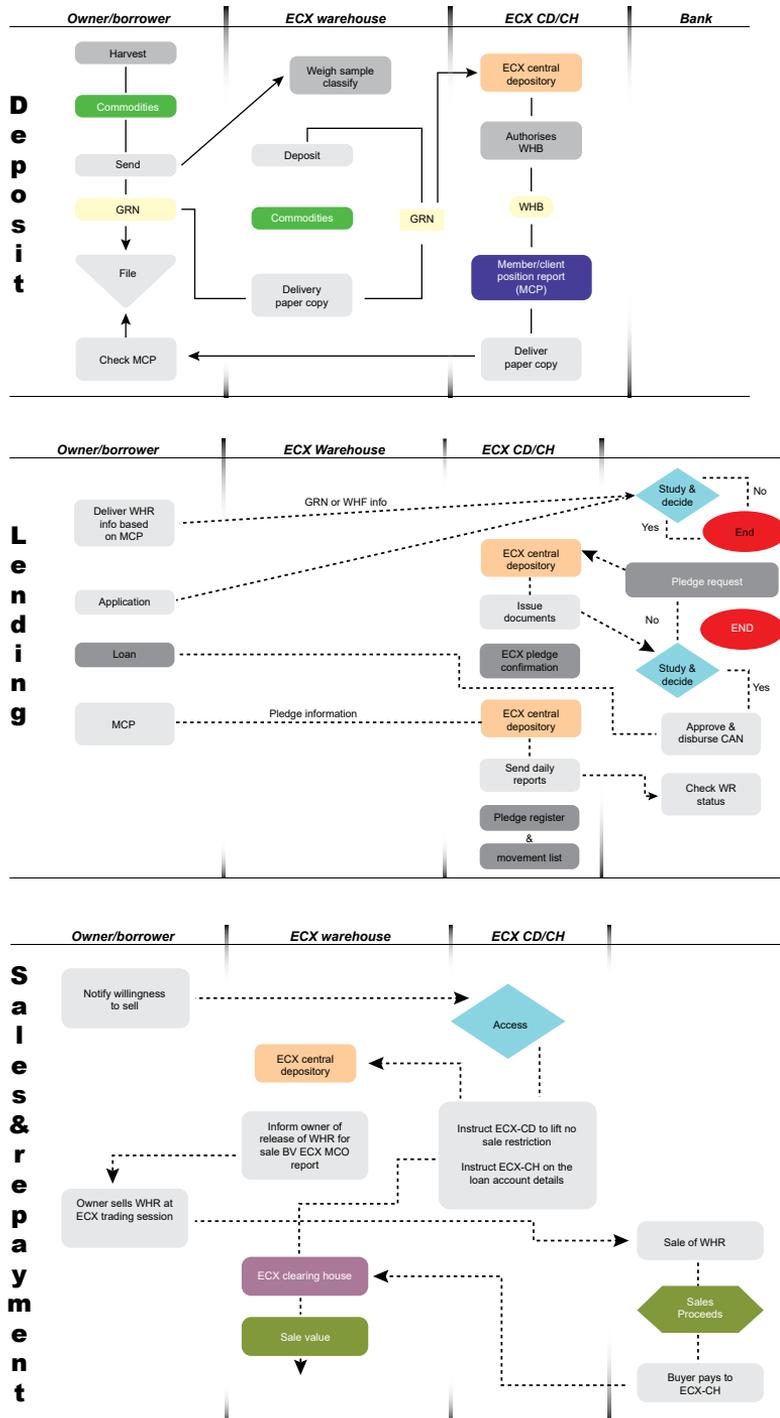


Table 14.1: Facilitating agricultural value chain finance and price discovery through the Ethiopia Commodity Exchange (ECX) and warehouse systems summary table

Name of case study innovation	Facilitating VCF through integrated commodity exchange and warehouse systems
Type of intervention	Commodity exchange, warehousing and WHR system
Sector and region/country	Across Ethiopia
VC and VCF innovation(s)	Commodity exchange and integrated services
Initiator and actors involved in the financing	Government of Ethiopia
Start date	2009
Business model and key actors in service provision	Integrated VC and financing facilitation services
Services provided	<ul style="list-style-type: none"> • Source of funds • Trading platform, warehousing, commodity management, WHR financing and price sharing • Government
Financing	<ul style="list-style-type: none"> • Service fees for trade and warehousing • Bank interest for WHR loans
Key results	<ul style="list-style-type: none"> • Organizations and persons involved • 347 ECX members – 33 Cooperative Unions (2,8M small scale farmers) and 308 VC enterprises
Constraint and limitations	<ul style="list-style-type: none"> • Widespread use of ECX only for coffee and sesame • Quality and quantity inconsistency and lack of economies of scale by smallholders
Lessons and recommendations	<ul style="list-style-type: none"> • Sustainability and replicability • Application of ICT • Self-sustaining through fees • Mobile price services and electronic trading

Annex 15: SCL agribusiness financing dilemma

SCL Agribusiness Company, Kwali, Abuja

Case developed by Calvin Miller with Samuel Robert

Overview and background

SCL is a specialised agribusiness company in Kwali, Abuja, Nigeria. It has a well-trained management team for its multi-faceted company operations. These consist of SCL agribusiness oil processing, SCL farms, SCL poultry and SCL consultancy/academy. The operations manager and co-founder Robert Samuel, with a Master's degree in Information Technology, heads and coordinates SCL's entire operations. Now, SCL is looking to develop and expand into human food fortifications alongside foreign and local partners.

SCL agribusiness is specialised in soybean processing. They use a processing extrusion method to extract the soybean oil, which results in high-quality soybean meal that has high nutrient qualities for the poultry, fish farming and human food industries. However, it also results in a lower conversion level of oil, compared to chemical extraction. Soybean meal from chemical extraction is typically cheaper on the open market. Hence their focus is on higher-premium markets that value and pay for higher nutritional content.

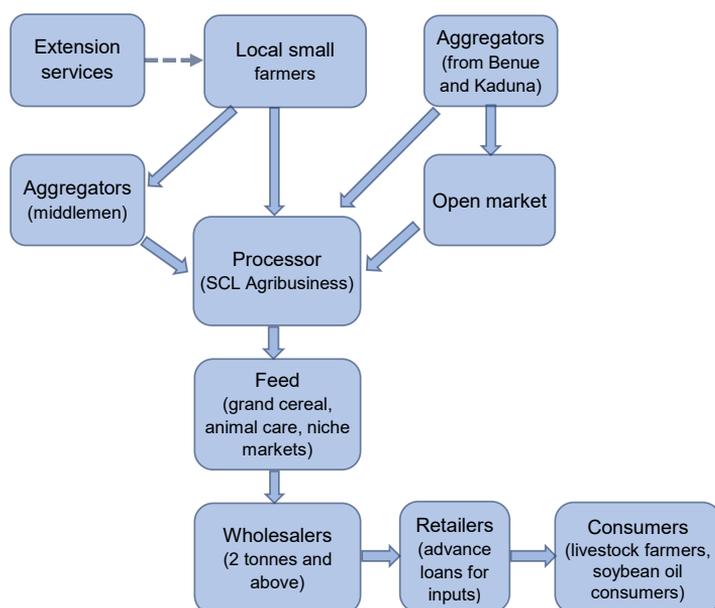
Business model and financing

SCL works to provide a higher quality product for higher-value and niche markets. The business model of SCL is aimed at driving their soybean VC as much as possible through contracting farmers for much of their produce, and giving contracts to sell the soy products to premium poultry and fish farmer buyers of soybean meal, in addition to regular buyers of their soybean oil. However, in reality owing to their shortage of working capital they have had to resort to a more unorganised arrangement, as shown below, using local and more distant middlemen aggregators and open markets from Benue and Kaduna States to provide the bulk of their soybeans to process. This is because they lack the funds to buy and store the needed soybeans at harvest and smallholders lack the working capital to pay for the grain.

The company has distribution chains in Lagos, Kano, Enugu, Adamawa, Jos and the F.C.T. regions of Nigeria. Their pricing model comprises the costs of raw materials, production, warehouse expenses, equipment, general expenses and staff salaries. In addition to the costs noted above, market prices from other traders are also taken into consideration. Price competition is especially important when the overall price of soybeans rises, which then causes some of SCL's premium buyers to start to buy cheaper, but inferior-quality produce from competitors.

In order to maintain the loyalty of its premium-price buyers, SCL invests in strict quality and safety controls and regularly tests and evaluates the nutrient content and toxicity levels of end products and seeds. It would also like to ensure traceability, to track the product from the seed and producer, but this is not possible when it needs to source much of its produce from aggregators. The SCL agribusiness VC is shown below. Currently, much of their produce comes from aggregators.

Figure 15.1: SCL soybean agribusiness value chain



Smallholders

The SCL agribusiness processing plant is located in the middle of an agricultural zone comprising largely smallholders. Yet, in discussions with 20 farmers living in Kwali village in Kwali Area Council, most of them are not involved in producing for SCL, and state that owing to a lack of financing (and capacity development), they produce solely for their subsistence livelihoods. Most indicated that they have never received any form of external funding whatsoever in their over 20 years of farming owing to a lack of access to funding sources that are willing to provide financing.

However, while indicating their interest in financing and a market ready for soybeans through SCL, they also felt more comfortable using their own resources and any potential funding to improve their production of sorghum (Guinea corn), which they currently are growing.

With sorghum they are able to produce five bags of millet per hectare and sell for NGN 20 000 for an income of NGN 100 000. Their budget reveals production cash costs of NGN 54 900 for a return of NGN 45 100 for their labour, land and profit. A similar budget for soybean production shows a sales income of NGN 180 000 and expenses of approximately NGN 100 000 for a net family income of NGN 80 000 per hectare. However, cash expenses would almost double for soybeans and they lack the resources to produce soybeans. They also indicated a lack of experience in producing soybeans, which together with a lack of finance, inhibits these smallholders from producing soybeans and nearly doubling their incomes. The period in need of finance is primarily at the beginning of the farming season. The farmers need a loan to purchase seed for soybeans, fertilizer and pesticides, and to pay for tractor services for land preparation. If these smallholders were to be financed and trained to grow soybeans, an average of NGN 100 000 would be needed, but this is not available from the agribusiness or from financial institutions.

Financial analysis

Securing financing is key to the success or even survival of SCL's soybean processing industry. The capital to build the SCL plant was amassed primarily with existing funds from the owners, but the building and equipment expenses used up the capital needed for procurement. SCL thought it could obtain working capital using these assets as collateral but the banks would not accept this modern processing plant, nor the farmland owned by SCL, as acceptable collateral and instead insisted on needing real estate in an urban setting. This, however, is not available.

SCL is addressing its financial bottleneck in the following ways:

- when and if possible, it tries to delay payments when purchasing soybeans from aggregators;
- it requests contracts for the sale of soybean meal to its premium customers and receives advanced financing, if possible, or is paid at the time of sale of its products;
- SCL is working with foreign investors to try to secure additional funding and joint venture funding. It is also collaborating with international development organizations to begin to produce high-nutrient school feeding products and expects, or hopes for, some development programme financing to help this new VC niche using its products, and
- SCL is also considering financing arrangements in which neighbouring smallholders and their organizations could be financed by microfinance banks through facilitation arrangements with their company. In this way, SCL could provide farmers with improved seeds and inputs as well as with technical assistance under a buy-back guarantee. Upon harvest, the farmers would deliver their grain and the company would pay them through their accounts in the bank, with the bank discounting their loans and interest. Later, a warehouse receipt programme could also be implemented, which could provide the farmers with opportunities to fetch higher prices and enable SCL to store soybeans and process them over a longer time period to meet its buyers' needs.

However, owing to the inability to amass enough working capital, the agribusiness processing plant is only operating at 10 percent of capacity, even though it must operate at over 50 percent capacity to break even. The SCL consulting business provides some income for the SCL businesses to survive but only in the short term.

Facilitating value chain linkages

An assessment of the smallholders in the Kwali region showed that their understanding of commercial agriculture is quite low given that they only produce at a subsistence level. Their financial management capacity is poor and their technical capacity is very low as they are still using local farming practices and tools. Their low levels of production and low levels of capacity are barriers for the SCL agribusiness to invest the time and resources in the technical support needed to participate in their soybean VC. The hope is that a development agency or development funder providing support to SCL becomes available to facilitate the needed training so it can produce soybeans, and so it can be considered for financing from the microfinance banks in the region.

SCL needs its soybeans and has a vested interest in working with these smallholders in the region if financing for them can be secured. It has indicated that it is willing to work with a financial institution to support its lending process, such as making payments to the bank on behalf of the smallholders for the purpose of discounting farmers' loan repayments. They will also provide agronomic assistance and oversight to the farmers.

Results and lessons learned

Financing for small agribusinesses and smallholders is difficult. SCL agribusiness has great potential for future success if it can increase its volumes, as well as the potential for failure if adequate funding cannot be sourced. It has a premium niche market of buyers of soybean meal and oil. It also has a strategic development plan that aligns with the federal government's agenda on curbing malnutrition, especially among children, and has begun developing the processing capacity to produce high-nutrient products to supply to the market. It is also vulnerable to niche markets when the market prices change and cheaper alternatives affect their buyers' interests.

SCL's shortage of working capital is a lesson in cash-flow planning. The consequences of using working capital financing for long-term investments to finish building and equipping its plant has led the company into difficulties. It has broken its VC linkages and prevented it from expanding its presence with local farmers who also need financing.

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Questions for discussion

As value chain finance advisors, please address the following questions:

1. What is/are the root cause(s) that led to the current SCL financing shortfall?
2. Can SCL or others in this soybean VC attract the finance and investment needed; if so, from whom and what must be done?
3. What are the trade-off benefits and risks of neighbouring smallholders switching from sorghum (Guinea corn) to soybeans?
4. Under which arrangements and considerations would a microfinance bank consider financing directly or indirectly to the smallholders?

Table 15.1 SCL agribusiness financing dilemma case study summary table

Name of case study innovation	SCL agribusiness financing
Type of intervention	Soybean processing and marketing, with premium products
Sector and region/country	Soybeans, Kwali, Abuja State, Nigeria
Initiator of the VCF innovation	SCL company
Actors involved in the financing	SCL investors, Fortis MF bank
Start date	March, 2018
Primary reason for financing:	
<ul style="list-style-type: none"> To small farmers and producers To buyers Buyer financing to SCL 	<ul style="list-style-type: none"> Is important for doing business To procure product To increase sales To secure purchases and receive price discounts
Original source(s) of funds	Owner equity and bank financing.
Business model	Agribusiness firm buyer driven business model.
Financing instruments used	<ul style="list-style-type: none"> Input supply credit, forward contracting and short-term bank working capital Warehouse receipt financing, invoice discounting (local purchase order) and joint ventures under consideration
Key strengths and weaknesses of the approach/instrument(s)	<ul style="list-style-type: none"> Approaches and understanding of instruments are strong but very limited use Lack of acceptable mortgage collateral required by commercial banks causing lack of working capital results in lack of procurement leading to losses and even harder access to finance – a vicious circle
Key limitations	<ul style="list-style-type: none"> Lack of financing is seriously inhibiting the use of the instruments and use of soybean company facilities Market competition from lower cost soybean processors Lack of funding to stockpile affects security of meeting timely purchase orders of clients
Key results	
<ul style="list-style-type: none"> Amount financed/year or crop cycle 	<ul style="list-style-type: none"> Year-round working capital needed for optimization to 2 tonnes per hour production within a year 1-1,2 million dollars required
Persons receiving financing	<ul style="list-style-type: none"> SCL provides limited short-term advances to outgrower farmers SCL receives buyer advances and limited bank ST and LT financing
Interest rate	9 -20 percent per annum (depending on financing vehicle)
Repayment rate	Monthly

Annex 16: Vintage Farms pineapple

Case developed by Calvin Miller with support of Daniel Katey

Overview and background

Vintage Farms is a Ghanaian fruit processing enterprise producing natural juices. It produces five juices from blends of different fruits: pineapple, mango, ginger, watermelon and orange. The varied blends are pineapple and ginger, pineapple and mango, pineapple and banana, plain pineapple, and pineapple cocktail. Daniel Katey is an entrepreneur who became interested in pineapple processing after having first been involved in mine-equipment leasing, owning a small hotel and then the production of 200 acres of pineapples.



Vintage fruit company © C. Miller

After he and many growers were significantly affected by an export market shift of pineapples from Smooth Cayenne to MD₂ in the export market, and seeing the need for a market for pineapples that do not meet standard sizes and specifications for export, he began a small pineapple processing enterprise from his garage.

The small enterprise began operations in 2010 using a small rented facility and relocated to a bigger one in Nsawam as operations expanded and demand for its products increased. The mission of Vintage Farms is to provide quality and healthy fruit drinks to the public by maintaining high quality standards.

Mr Katey, the owner and manager, is seeking to expand the enterprise's operations with the acquisition of additional machinery and equipment to enable it to take advantage of the significant demand for fresh, natural, healthy fruit drinks, and to provide a reliable market for the smallholder producers linked with his enterprise. However, he also faces severe financing constraints for both working capital and investment in machinery and facilities, exacerbated by a difficult working relationship with his bank.

Financial analysis

Financing is central to the continuation and growth of Vintage Farms. After struggling to finance working capital using a limited overdraft arrangement with a local rural bank, he was selected for financing with an internationally-funded Outgrowers Value Chain Fund (OVCF). However, the funds that are guaranteed to the investor by the Bank of Ghana must pass through a local financial institution, which takes a percentage. Even so, because of the low cost of capital from the international development agency, the cost is slightly below the market rate of 22 percent per annum (estimated inflation is 16 percent).



Agribusiness entrepreneur and products © C. Miller

In his local market niche for juices, Mr Katey faces almost no national market competition for canned natural juices and he has successfully marketed to neighbouring countries along with an offer from Spain.

However, while properly registered according to the requisite quality and safety standards and according to governmental registries and requirements, his financial and cash flow management does not fully meet the expectations of the bank and the OVCF. This is not uncommon for small and medium entrepreneurs (SMEs), especially when the owner has had only five years of formal schooling.

The financing approved by the OVCF through the bank totalled EUR 300 000 (approximately USD 336 000 in June 2017) in local currency to be released in portions, of which he has received 35 percent. The bank focuses on collateral to lend and wants more equity as collateral before further disbursements. The first portion of money was to be used primarily as working capital of the SME operations and financing to advance inputs to the 160 outgrower farmers in his partner association. However, Mr Katey soon faced two dilemmas. Firstly, the country began suffering power outages in his region resulting in the need to purchase a backup generator. Secondly, he had been bottling juice using sterilised recycled bottles from an export company, and, as he grew, the export company threatened legal action to force him to cease using them. Hence, he used much of the working capital loan to purchase two canning machines and other needed equipment, which he is now using. However, this resulted in an even more acute cash-flow crisis resulting in losses in the pineapples procured from the farmers and a reduction in sales. This is because the farmers received delayed payments for their pineapple deliveries.

Investment partners

The owner is desperate for financing and has sought professional help to develop a business plan to help attract investors of who can bring additional equity to ensure that Vintage Farms has solid foundations and can grow. He also needs equity to access the rest of the OVCF funds from the bank, which the bank is not releasing, and gain access to additional financing from other sources. He is willing to share ownership, including giving up controlling interest.

Vintage Farm's owner owes nearly USD 100 000. The value of the farm depends largely on the valuation of the intrinsic market potential, the research and development value and the farmer association linkage. It is located in the same region as a large, fresh fruit pineapple exporter, which may add value due to its ability to process pineapples that are blemished or not of the standard size, although the export company could also be seen as competition for some of the pineapples. The Vintage Farms enterprise also has a social value as it is important to the local farming community and economy.

Lessons learned

Financing for small agribusinesses is difficult. A lack of adequate financial records of sales, income and accounts receivable, compound the problem already made difficult by a lack of collateral. A special VC outgrower fund was developed in Ghana specifically for such types of agribusinesses. But with its requirement to fund through the conventional banking system, it was still met with financing restrictions owing to a lack of collateral.

Marketing is also a challenge. Despite the market potential of Vintage products, Mr Katey has failed to convince investors to provide financing owing to the lack of product flow and consistent marketing contracts, both related to cash flow constraints for procurement from the farmers and economies of scale needed to interest larger buyers.

A third lesson is the consequences of using working capital financing for long-term investments. By purchasing the much-needed cannery, the agro entrepreneur then lacked the capital to operate.

References

Miller, C. 2017 Interviews with Daniel Katey, Production Manager, and outgrower and value chain fund (OVCF) leaders, Vintage Farms. [audio]. Nsawam. [Cited 38 October 2017].

Questions for discussion

As value chain finance advisors, please address the following questions:

1. What is/are the root cause(s) that led to the current financing shortfall?
2. Is the local bank following a VC approach in its lending practices? What recommendations do you have for the bank for more effective lending to small agribusinesses?
3. Can Vintage Farms attract the finance and investment needed? If so, from whom and what must be done?
4. Which capacity development and economic incentives would you offer the OVCF managers and the government to support Vintage Farms?

Table 16.1: Vintage Farms pineapple case study summary table

Name of case study innovation	The struggles of small agribusinesses
Type of intervention	SME and outgrower financing and investment
Sector and region/country	Pineapples and fruit, Nsawam, Ghana
Initiator of the VCF innovation	Private small entrepreneur
Actors involved in the financing	Company and producer organization, and linkages with rural bank and fund
Start date	2010
Primary reason for financing:	
<ul style="list-style-type: none"> • To SME • To small farmers 	<ul style="list-style-type: none"> • Equipment and working capital • Product procurement from farmers
Secondary motives	Expansion of business and development impact
Original source(s) of funds	<ul style="list-style-type: none"> • Company owner funding • Rural bank with OVCF development fund
Business model	Lead firm out grower model
Financing instruments used	<ul style="list-style-type: none"> • Working capital to SME from bank • Processing and marketing company input finance to farmers
Key strengths and weaknesses of the approach/instrument(s)	The combination of technical support, quality inputs, confirmed purchase and funding are important to the success
Key limitations	Lack of adequate working capital and no longer term finance. Some side-selling by producers when SME lacks WC to buy
Key results	
<ul style="list-style-type: none"> • Amount financed/year or crop cycle 	160 farmers in producers association plus other occasional sellers
Persons receiving financing	Approximately 160 pineapple producers
Interest rate (explicit or imbedded)	22 percent (for small farmers, is included with inputs)
Repayment rate	<ul style="list-style-type: none"> • SME delinquency with bank due to cash flow shortages • High farmer repayments to SME when discounted from delivery payments

Annex 17: Agricultural value chain financing with investment funds

Understanding investment funds and agricultural value chain finance

Agricultural Investment Funds (AIFs) are a fitting investment structure to channel investment while mitigating risks to investors in the sector. An investment fund is a mechanism which enables investors to pool their capital for specific profiles of companies, sectors and/or regions. This allows the diversification of each individual investor's risks in a particular investee organization and diversifying across companies and countries. These funds are largely divided into two groups: closed-end funds, which have a defined lifespan after which they will be liquidated (for example after 10 years), and open-end funds, which are continuous. A second differentiating factor is the type of investment. These funds can be either equity investments, senior loans or subordinated loans, often called quasi-equity, since at the time of default they have a priority of repayment after loan repayments are covered. Subordinated loan investments, which are the most common vehicle, especially with impact investment, can help leverage loans from banks, similar to equity investments, since they carry the higher risk of repayment, but are much easier to exit.

Investment funds are focused, allowing them to better understand the sectors and VCs in which they invest. They are generally managed by a specialised management team that brings both capital and management expertise as well as technical and marketing understanding and links. This value addition “finance plus” approach to financing is fully in line with the underlying concept of VC financing as know-based and building on the VC transactions and partner-linkages.

Owing to the increasing use of VC linkages in agriculture, the number and size of these investment funds have grown rapidly in Africa and many developing countries around the world. Much of the finance and investment is trade finance backed, relying on the strength of relatively-secure buyer contracts from reputable companies in order to inject their financing into a particular VC. The presence or lack of investment fund financing is heavily skewed towards durable and easily tradable and traceable products. Often these VCs, are internationally traded commodities, such as coffee and cocoa.

Case study examples

While the basic structures of AIFs have much in common, the diversity of arrangements and settings make it difficult to understand and analyse them from one particular case. For this reason, the case study approach in this document presents both the overall experience of multiple agricultural investment funds and their use of VC financing and selected examples of distinct applications of different funds. The cases highlighted have a development impact focus for their agricultural investments as well as a commercial interest.

Box 4.1: Fairtrade access fund

Fairtrade access fund

The fund strives to provide adequate financial support along with sound financial advice. The goal is not to simply make resources available to SMEs, but also to advise on crucial financial decisions, such as policies that stabilise cash flows, decrease debts, increase liquidity and provide a cushion for any financial difficulties that may arise in the future. Simultaneously, the FAF also encourages its investees to take up best industry practices, such as conducting thorough internal and external audits, which will enhance the quality of the financial information they present to the world.

Investment process

Agribusiness SMEs seek AIF investments as they generally lack sufficient collateral (from banks) to obtain the financing they require to operate and grow their operations. Their opportunity for financing lies in the VC linkages and cash flows. Whereas banks are often not interested in such non-collateralised lending, AIFs have the capacity to undertake more in-depth and informed VC and business assessments, as well as more flexibility to provide financing according to the specific nature of the VC partners.

The investment process of most agricultural investment funds follows a similar process, as shown below.

Investment step	Investment activities
Investment request/deal origin	Initial contact application and screening
Investment assessment	Company and value chain assessment and due diligence
Investment memorandum of understanding	Term sheet and investment proposal agreement preparation
Investment approval	Board/investment committee approval, legal due diligence, final review and agreement signing
Investment	Investment disbursement and monitoring
Investment exit	Periodic interest or profit returns and/or equity exit

The time and level of analysis and dialogue required for the investment process varies with those that focus primarily on lending requiring less involvement than equity partnerships. However, given the importance of VC financing, assessment and monitoring is continual over the life of the investment. The VC transactions, inventories, trade contracts and the relationships between parties are what constitute the security and returns on the investment. The technical support value addition of AIF management, which adds value and can reduce risk, strengthens security. However, this commitment of AIF resources is costly, thus requiring the fund management to carefully select larger and generally stronger investees.

Capacity, governance and VC-linkage risks are major constraints to approval. For example, in one AIF providing investment loans, over one third do not pass the desk review for a due diligence assessment. Of those, only two thirds will warrant the preparation of an investment memorandum to the investment committee and only two thirds will pass both approval and final legal closing. Since first-time investments are the most difficult and risky, the rejection rate is much higher. Potential agribusiness investees in countries that are unstable or have uncertain economic environments face even bigger hurdles.

Box 4.2: Partner investee assessment

Partner investee assessment
<p>MicroVest, which includes MF, SME and agricultural investments, uses a due diligence program anchored around the three C's: Country, Character and Credit.</p> <ul style="list-style-type: none">→ A country analysis looks at 24 indicators in four risk areas of political, economic, financial sector and business environment, as well as a personal assessment by the MicroVest team.→ Character due diligence is particularly important. It analyses the commitment level of the management, its quality, the staff, governance of the board and depth of social impact of the organization, and includes background checks.→ Credit assessments look at the financial strength of the company, internal controls and underwriting process. The credit scoring model includes the assessment of 39 different indicators in the CAMEL (capital adequacy, asset quality, management, earnings, and liquidity) framework.→ MicroVest believes the multi-stage due diligence process ensures a deep understanding of the institution's business model, commitment to its mission and underlying credit risk factors.

Fund managers must then dig deeper than the three C's for agricultural investments as shown below.

Box 4.3: Pearl capital investment criteria

Pearl capital investment criteria
<p>Pearl Capital, with multiple agricultural investment funds, employs the following criteria for selection:</p> <ul style="list-style-type: none">→ Business environment – agribusiness must have no state marketing interventions or price controls.→ Enterprise – has a growth trend, be regionally competitive within Africa, exceed industry standards and at least on year of audited financial records.→ Management – strong management team with low workforce turnover.→ Development – strong social and economic impact with no adverse environmental impacts

Potential investees of investment funds must operate in VCs that are not unduly affected by government interventions to put the investment at risk and need to be competitive from the producer to the end market. High industry standards also reduce current and future market risks, making investments more acceptable.

The level of approval for equity investments is even higher than for loans and only a small fraction of those initially screened for consideration is approved. While an equity investor has more oversight and operations, their capital, and the eventual divestment of their investment, is at greater risk. Many equity investments made by investment funds come after an initial relationship has been developed through loans to the agribusiness entity. The fund manager also works to minimise some risk through strict covenants of benchmarks that must be achieved by the investee's agribusiness; failing to meet these can allow the investment fund to break the investment contract. Only if it is agreed with the parties that there is a compatible "fit" are the terms and conditions for investment considered. An example of the size and scope of investments is shown below. Since these are sizeable investments, much care and caution are warranted.

Box 4.4: Small enterprise assistance fund

Small enterprise assistance fund

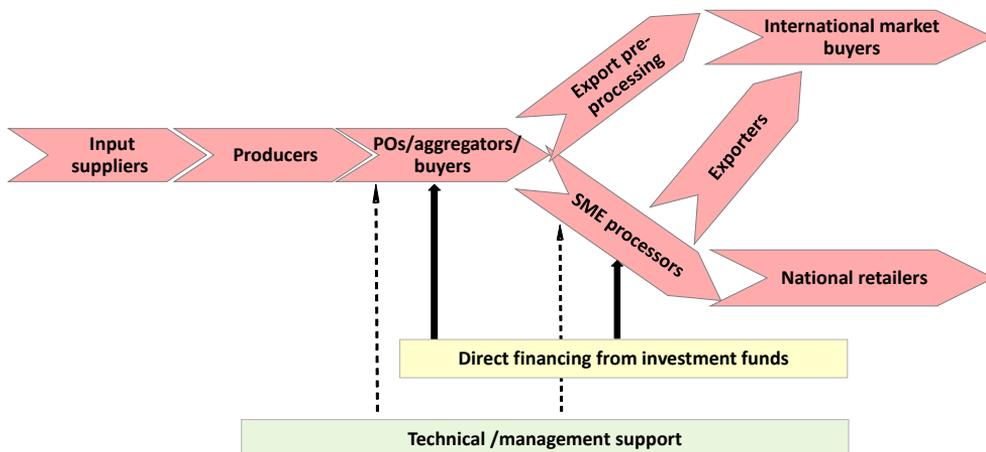
One of the investment fund management companies for agriculture and SME investments is SEAF.

- Equity investments - SEAF invests through common or preferred stock to take an equity ownership position in portfolio companies. It may take minority positions with significant governance and information rights, or may take majority positions for certain opportunities. (USD 500 000 – 3 million)
- SEAF's mezzanine investments are generally subordinated loans that combine current interest payments with a participation in revenue, earnings growth or enterprise value (USD 200 000 to 3 million).
- Term credit - SEAF also provides lines of credit, working capital loans and trade financing for certain companies (USD 200 000 to 3 million).

Value chain analysis

Investment funds perform deep analyses of the market and VC as an integral part of their business assessment for potential investments. The strength, stability and profitability of the VC and its end markets are crucial. They consider the strengths and weaknesses of each of the VC actors and their relationships and the cash flow of the VC. Careful analysis and discussion are then carried out on the type of needs for investment fund financing and consider where along the VC financing should be provided. As shown below, given their need to provide larger investments with stronger partners, the tendency is to provide investments to the SMEs or producer organizations and not directly to producers. Financing will flow to the producers from their producer organizations and/or the agribusiness SMEs with whom they work. Technical support, if provided by an affiliated TA fund, may also go to producers to build their capacity, but using their PO as the coordinating aggregator for provision of the services, as illustrated below.

Figure 17.1: Assessing the VC for strategic selection for delivery of financing and support



The agribusiness SMEs, which work directly with the investment fund, often procure their products from smallholders. This is most commonly done through contract farming or outgrower schemes, in which the buyers of products (traders or processors) lend or advance funds to the farmers, tying the loans to a purchase agreement. For example, a coffee processor may provide credit to farmers for seeds/fertilizers during the production season, with a purchase agreement to buy the produce after harvest. Typically, technical assistance to ensure quality and quantity is provided by the buyer. The investment fund lends to the SME or cooperative on the basis of existing export contracts with a buyer/importer. The credit profile of a buyer (such as Starbucks) can limit the risk of the loan to the production/processing risk faced by the SME. However, even though outgrower contracts are not directly used by the investment funds, they do serve as an indication that creditors will be able to fulfil their export sales contracts. After harvest, if storage is needed for multiple months, warehouse receipts for commodities stored in a certified warehouse, which issues a receipt as collateral for loans, could be applied. However, these are not typically used by investment funds but can be used when there is a need to store the commodity owing to a lack of suitable markets.

Trade financing by investment funds - how it works

Investment process example

Fedecoop, a second-tier (apex) cocoa organization, requests financing from an African AIF to pay for cacao from its member organizations, process it, and export it to reputable buyers in Europe. Fedecoop is made up of numerous cocoa producer organizations of smallholder cocoa producers. The financing is designed to help Fedecoop purchase raw cocoa from its members. Fedecoop typically makes 60-70 percent upfront cash payments to farmers when they deliver the product. The price paid to the farmers is based on the average prices from the previous harvest as well as the current market price. Sometimes the upfront price is raised as a result of high trader competition.

The loan from the investment fund is backed by an open export contract that Fedecoop has signed with its European importers, with a loan to value ratio of 75 percent or collateral coverage ratio of 133 percent. The following steps illustrate the structure of the loan:

Steps:

1. Disbursement: AIF disburses loan to Fedecoop, net of structuring fee.
2. Assignment of collateral: Fedecoop assigns rights to the proceeds payable under the export contract to AIF, which is duly registered. The contract, which has either a fixed price or a variable price based on a cocoa commodities exchange, is assigned to AIF by Fedecoop and the European importer consents to the assignment. It agrees to make the payment under the import contract as directed by AIF upon delivery of cocoa at the importer-designated port by Fedecoop. Any amount payable under such a contract in excess of the principal and interest due to AIF will be paid directly to Fedecoop. In case of variable price contracts, Fedecoop will send a notice to AIF once the price of the contract has been fixed.
3. Export: Fedecoop delivers cocoa at the port designated by the importer and sends the shipping document – bill of lading – to AIF.
4. Payment: AIF instructs the importer to make payment to the AIF and will release the bill of lading once AIF has been paid interest and principal due. Fedecoop will also have the option to pay AIF directly if it has sufficient liquidity.

Investment fund case examples of approaches and practices

A common dilemma facing investment fund growth is the lack of SME agribusinesses and POs suitable for investment. As noted above, criteria such as those used by Pearl Capital make it hard for many to qualify, even though the criteria are certainly not excessive. Hence, investment funds with an impact focus often provide TA and other services as needed. The goal of investment funds with a social interest is not to simply make resources available, but also to advise on crucial financial decisions, such as policies that stabilise cash flows, decrease debts, increase liquidity and provide a cushion for any financial difficulties that may arise in the future. For example, the FairTrade Access fund, as well as Triodos, Root Capital and others, also encourages its investees to take up industry best practices, such as conducting thorough internal and external audits that will enhance the quality of the financial information they present to the world. Some of this is funded through the investment process and in many cases the fund may have a complementary Technical Assistance Fund (TAF) to partially support such technical and management upgrading.

Box 4.5: Triodos agricultural value chain investment approach

Triodos agricultural value chain investment approach

Triodos, with a diverse portfolio of funds, has invested in over 200 companies in 22 countries and is managed by an experienced investment team with a deep understanding of the sector. Its agricultural investment funds focus across the VC to the key actors in transforming food and farming systems as well as in empowering people to make sustainable consumption choices.

The Triodos Sustainable Trade Fund provides loans that assist farmer cooperatives and other agricultural companies in Latin America, Africa and Asia in accessing international markets, thereby enabling fair and immediate payments to small-scale farmers while stimulating sustainable agriculture. Examples include:

- Cooperativa Oro Verde processes, exports and has local sales of green coffee and cocoa beans and is increasingly committed to organic production. It provides advanced payments and loans as well as health insurance for its members and its employees.
- Capitol Trading Company is a family-run cocoa trading business in Sierra Leone. It exports sustainable farming (UTZ certified) cocoa to the Netherlands sourcing its cocoa from almost 9 000 small-scale farmers on 18 000 hectares. Capitol Trading provides technical assistance and training to the farmers on more efficient and sustainable agricultural practices, and provides them with harvesting equipment.

Value addition support by the management of an agricultural investment fund is often not attainable without external support when focused on reaching lesser-developed organizations and regions.

Box 4.6: Root capital finance-plus model

Root capital finance-plus model

Root Capital relies on donor support to help reach high investment cost and risk communities. By developing or strengthening VCs and market linkages, and building organizational and management capacity, Root Capital is able to cover the costs associated with these investments.

- In Karatina, Kenya farmers deliver their macadamia nuts to the Village Nut Company, where employees carefully hand sort them. The business was formed with an interest in providing economic opportunities for youth. From machine operators and trainers to quality control specialists and sorters, the company provides employment to nearly 100 individuals, mostly young people – and especially young women – in their twenties and early thirties. Root Capital began financing The Village Nut Company in 2015 with a USD 450 000 line of credit. The business has grown in its capacity to manage credit, and is currently repaying a USD 1 million loan.
- In Tharaka Nithi county, Kenya, Sorghum Pioneer Agencies provides inputs and a market for 14 000 farmers with the support of working capital through a USD 230 000 loan allowing the company to increase marketing from 1 700 tonnes to 4 000 tonnes.

While many impact investment funds for agriculture are small and focus on smaller SMEs, there are examples of investing with much larger SMEs.

Box 4.7: African Agriculture Fund (AAF)

African Agriculture Fund (AAF)

AAF is an equity investment fund focused on small and medium agribusiness enterprises who are VC leaders. The development agency-funded African investment supports private sector companies that implement strategies to enhance and diversify food production and distribution in Africa, by providing equity funding, strengthening their management, enabling modernisation, transferring skills and enabling more transparent corporate governance. AAF is managed by Phatisa, a specialised private equity fund manager. In order to enhance the impact on smallholders and smaller SME agribusinesses, it has a donor-supported TA facility managed by TechnoServe. The deal size of USD 5 – 24 million fits the profile of large firms. The fund has been successful in finding investment deals, including input supply, food processing, poultry and palm oil. However, to reach smaller agribusinesses, a separate fund, the AAF SME fund, was formed to make investments from USD 150 000 to 4 million.

Results and impact

Portfolios at a glance

Loan tenors for AIFs are generally up to 12 months for trade finance and working capital loans and average four to five years for long-term loans. Interest rates are generally in USD and average eight to nine percent per annum for loans to trader organizations and producer organizations.

Among the leading AIFs in agricultural financing, approximately two-thirds of the loans are for trade finance backed by trade contracts, with the remaining for longer-term financing for equipment. Some financing also goes to working capital but this portion is often funded by conventional bank funding. Investors in impact-related funds often want to ensure that the funding goes to smallholder farmers. However, using the Fairtrade Access Fund as an example, which has this objective, 45 percent of the loans go directly to producer organizations, with 35 percent going to traders who meet specific criteria on serving smallholders. In some countries, POs cannot directly receive loans from international funds. Like many agricultural investment funds, some financing is also delivered through rural and agricultural focused MFIs. Risk and default are highest when directly lending to POs, thus constituting a balancing act between fund investor, returns expectations, and smallholder financing.

Risk

A certain level of portfolio at risk (PAR) is always to be expected in agriculture given the inherent risks in the sector, such as commodity price risk, natural disasters and crop diseases and pests. PAR and loan restructurings generate increased provisions, which negatively affect costs. Risks should be carefully identified during the project analysis phase, strategies to mitigate risk adopted at an early stage, and partners need to be closely monitored to ensure timely repayment.

Risk varies significantly between sectors and VCs. Portfolio-at-risk greater than 30 days (PAR>30) across all Council on Smallholder Agricultural Finance (CSAF) investment fund member portfolios was 7,8 percent for 2016, down from 11,3 percent at year-end 2015. For coffee, it was 5,2 percent but significantly higher for perishable products, such as fruit, vegetables and dairy, representing a significant risk. Operating margins among all the investee organizations, especially producer organizations, varied widely (from negative 45 percent to positive 49 percent) highlighting the challenges since systemic crop losses are not even the largest risk. Factors for non-performing loans as reported by CSAF Members are: a) limited managerial capacity, 29 percent; b) crop failure (including weather, pests and diseases), 17 percent; c) misuse of funds, 13 percent; d) buyer default, 7 percent; e) commodity prices, 6 percent, and f) poor product quality, 6 percent. Write-offs varied between 1,5 and 7,2 percent for CSAF members with 2,1 percent of the historic invested portfolio lost.

Impact

One of the most effective and efficient channels to reach these farmers is through small- and medium-sized enterprises (SME). These are the cooperatives, associations, traders, processors and exporters that act as critical intermediaries within increasingly complex global food and agricultural supply chains. By connecting smallholder farmers to markets and providing employment to rural populations, these businesses have the potential to generate inclusive and sustainable economic growth for households, communities, and entire countries that are dependent on agriculture⁷

CSAF, a group of investment 11 fund managers, demonstrates the opportunity for high-impact and market-oriented investing. Collectively, CSAF members have over 150 years of experience in lending to agricultural SMEs, and have deployed a combined USD 4,4 billion. Combined lending by CSAF members has increased at a compound annual rate of 25 percent from a base of USD 354 million in 2013 to USD 682 million at the end of 2016.

⁷ https://www.csaf.net/wp-content/uploads/2018/08/CSAF_State_of_the_Sector_2018_FINAL.pdf

In 2016, the approximately 2,3 million producers reached through CSAF lending managed an average of 2,6 hectares of farmland. Forty one percent of the investees in 2016 were cooperatives and associations, and 56 percent were SMEs with the SMEs receiving 64 percent of the funding. Seventy six percent of the financing was trade finance with working capital, with longer-term asset financing at 12 percent and 13 percent respectively. Over half of the loans were amounts of over USD 500 000 reflecting moderate loan size growth over the years. In Africa, the median loan size is USD 547 000 and reflects the highest growth among all regions.

Social performance is also measured by CSAF members and others in the industry but no standard measurements have been instituted, even though most have some systems of measurement. For example, Incofin uses an in-house ECHOS© tool it developed to measure and monitor the social performance management of its investees in Fairtrade Access Fund and AgrRif investment fund, which is based on: mission & fairness 20 percent; outreach 20 percent; member services 20 percent; human resources 20 percent, and environment 20 percent.

Agricultural VC investment fund lessons and recommendations

- **Local presence of the fund management** – Agricultural production and agribusinesses vary between countries and regions, and the sector may also be influenced by the political environment. Hence, investments in agriculture require more in-depth market knowledge and engagement of the fund manager with the investees than is typically needed for other sectors or types of investment.
- **Careful risk assessment and portfolio diversification.** Agricultural production faces specific risks, including external and covariant risks, which are beyond the control of the agricultural producer or the investor. This risk affects the amount and quality of yield, profitability and therefore returns to investors. Although risk mitigation through portfolio diversification of sectors and regions requires attention, a focus on investments in agriculture in particular regions might be better owing to the in-depth market knowledge on which investment decisions are based.
- **Investments in “vetted” agricultural methods and crops.** Investments to support agricultural activities and crops that already have an established track record of sales and whose risk-return patterns more easily attract investors.
- **Time horizon of investments.** Overall, investors should be aware that most equity investments in agriculture are relatively long-term and do not allow for short-term profit maximisation. These longer maturities impact the liquidity of investors, through longer lock-in periods, for example.
- **Size matters.** Investment funds require economies of scale: if investments funds are too small or if investment funds make investments in investees that are too-small, they struggle with the high costs of administering them with proper due diligence. If these investments are spread across a large area, the fund income-cost relationship is exacerbated.
- **Smallholder investment is difficult.** Investment funds trying to directly reach smallholder organizations are especially difficult owing to costs and high levels of risk due to their limited capacity and often weak governance. Hence, careful structuring of how and where to invest in an agricultural VC is critical to success, with higher success enjoyed by AIFs that invest in an agribusinesses and companies rather than directly in smallholder associations.
- **The role of insurance mechanisms.** The role of market-based tools to manage risk, such as weather insurance or derivatives, as well as warehouse insurance and even health insurance, has become more important and helps facilitate IF investment interest.

- **The role of foreign exchange (FX) risk.** Most investment vehicles provide capital in a “hard” currency that is often different to that of the income generated by the debtor. Special attention must be given to the risk when structuring agricultural investment funds.
- **The development of tailor-made products.** IFs adaptation of financial products and methods to the specific needs of agricultural stakeholders is considered a critical factor for success; these can include shared risk mechanisms such as guarantees and investment enhancements..
- **Crowd-sourcing.** Niche VCs with international markets and savvy agribusiness leaders have the potential to obtain limited funding from pools of interested impact investors. However, this potential has not yet developed.
- **“Blended finance” smart subsidies to enhance and improve investment.** Much is needed to build capacity to expand the number of investment-ready businesses, and strengthen the enabling environment through legal and regulatory reforms and smart subsidies such as loan guarantees, vouchers and consideration of a TA facility.

References

The case study was prepared by Calvin Miller building on his personal involvement on boards and investment committee of impact investment funds in agricultural and microfinance, including founding the MicroVest investment fund and chairing the board of the Fairtrade Access Fund, exclusively focused on smallholder and SME agricultural investments. This experience was complemented by dialogue with fund operators and resource materials.

Useful information links include:

Council for Sustainable Agricultural Finance (CSAF). 2017. *State of the Sector 2017*. CSAF. (also available at http://www.csaf.net/wp-content/uploads/2017/07/2017-CSAF-State-of-the-Sector-Report_Web_FINAL_LR.pdf).

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Questions for discussion

1. What is the highest risk for AIFs investing in agricultural producer organizations? What approach(es) are needed to mitigate that risk?
2. What are the key elements for consideration by an agribusiness SME or agribusiness SME when approaching an investment fund for funding?
3. What are the pros and cons of agribusiness SMEs seeking equity financing versus loans from an investment fund?
4. How can investment funds move beyond export commodities to provide financing and support in other sectors and agricultural VCs?
5. Could your organization benefit from partnering with an agricultural investment fund?
 - If not, why not?
 - If so, what benefits would you expect and what would be needed to attract an investment fund?

Table 17.1: Investment funds case study summary table

Name of case study innovation	Agricultural value chain financing with investment funds - Council on Smallholder Agricultural Finance (CSAF) summary data
Type of intervention	<ul style="list-style-type: none"> • Composite of 11 CSAF members’ agricultural investment funds • 89 percent of CSAF funds aim for market rate financial returns and positive social returns; equity – 11 percent, loans 75 percent and mixed 15percent)
Sector and regions	<ul style="list-style-type: none"> • Global and regional funds.
Business model	<ul style="list-style-type: none"> • Cash flow and trade contract based financing
Financing instruments used <ul style="list-style-type: none"> • Service provided • Source(s) of funds 	<ul style="list-style-type: none"> • Trade finance – 76 percent; working capital 12 percent; LT asset finance 13 percent • Sectors – coffee 41 percent; cocoa 12 percent; nuts 12 percent • Public investment agencies and private investors
Financing <ul style="list-style-type: none"> • Repayment rate • Estimated finance • Estimated finance cost/client financed and/or cost/volume 	<ul style="list-style-type: none"> • USD 682 million ag IF disbursements globally (USD 222 million in Sub-Saharan Africa (SSA)) • 54 percent more than USD 500 000 per investment; median of USD 547 000 • PAR 7,8 percent; restructured loans 10 percent
Key results <ul style="list-style-type: none"> • Amount financed/year or crop cycle • Persons/families involved • Change in income/household 	<ul style="list-style-type: none"> • Investment fund 10 year growth – 27 percent per annum • 2,1 percent ROI for loan funds • CSAF – 33 percent (253) agr-SME borrowers in SS Africa • CSAF – globally 2,3 million producers; average of 2.6 hectares of farmland; USD 7,6 billion enterprise revenue
Constraint and limitations	<ul style="list-style-type: none"> • Limited managerial capacity – 29 percent; crop failures – 17 percent; misuse of funds 13 percent
Lessons and recommendations	<ul style="list-style-type: none"> • Build capacity of investment ready businesses - TA facility; scholarships • Strengthen enabling environment and smart subsidies – e.g. loan guarantees; foreign currency, incentives for reaching high impact, underserved markets



An AFRACA delegate consulting a greenhouse operator ©AFRACA

VII. Case examples

VII. Case examples

Annex 18: Buy-In and change is a slow process

Development agencies seeking to promote innovative changes in inclusive VCs and financing find the process slow and costly. Innovation funds, competitive grants and other incentives are employed to facilitate the process of change. Access for Finance Rwanda (AFR) facilitates innovation through competitive grants and support. As expected, some pilots and initiatives are successful and others less so. However, it has found that even when the desired results are shown, there can be a reluctance to continue or expand the services by the financing or VC actors.

AFR, for example, supports the following initiatives:

1. Working with the NGO Heifer International to enable digital dairy payments, develop collection centres and link to finance.
2. Working with NGO TechnoServe for a coffee cash flow, expense and information monitoring system for smallholders and processors using cloud technology.
3. Training and provision of technical assistance for financial institutions to undertake agricultural lending.
4. Partnering with Sport NGO and Kenya Commercial Bank on potato collection centres and warehouse receipt financing.

While these initiatives are successful in meeting their project objectives, AFR also knows from experience that longer-term change cannot be guaranteed. For example, while their work with warehouse receipts was accepted in principle by all parties, the use of them still struggled to take off. The banks remained sceptical, and only when a guarantee fund from USAID's Development Credit Agency (DCA) was added did they engage, and continue to do so after the guarantee program ended. On the farmer side, a strong history of local trader buying interferes with storage and payment commitments by smallholders expecting money at harvest or before. Such traditions add to the complexity of change and affect the viability of other useful innovations, such as the ability of the Rwandan commodity exchange to reach its potential.

Case developed by Calvin Miller with interviews with Livingstone Nshemereirwe, Head of Agriculture and Rural Finance, AFR, Rwanda

Questions for discussion

1. Why do banks remain sceptical of non-conventional collateral methods of financing and VC innovations, even when presented with evidence of successful implementation?
2. What is needed for effective and proactive innovation and a change in mindset of leaders of financial institutions?
3. Local and traditional trader presence is a reality; in what ways could these traders be a part of innovative change rather than an obstacle to change?

Annex 19: Connecting markets, growing trade and facilitating financing through the East Africa Exchange (EAX)

The East Africa Exchange (EAX) has quickly grown to be a valued resource for banks financing commodities. EAX E is a private company established in 2013 in Rwanda to serve the East African Community markets for staple food crops, primarily maize and beans, with storage services to other commodities. It provides four key services for VC actors and finance organizations, namely:

- **warehousing and collateral management** – managing 11 certified warehouses totalling 30 000 tonnes for quality, quantity, insurance and security with related services of drying, grading, bagging and issuing of warehouse receipts (WHRs);
- **electronic WHR financing** – partnering with six banks working with agriculture to extend USD 2 million in financing since 2015;
- **WHR trading** – using a NASDAQ-style electronic trading platform with remote trade access, EAX facilitates the trading of the commodities from the warehouses and throughout the country and region, and
- **information and market data services** – providing its 280 members, comprising producer organizations (60 percent), buyers, sellers and financial institutions with price and trade information important for their trading and financing.

How does EAX exchange work? A common challenge of EAX as a new type of service provider is raising the awareness of its role and what is expected of the farmers with whom it works. For example, informing them of its quality standards and grades, the costs of its various services, and the financing arrangements it can provide. The WHR system follows three steps: 1) grain deposit at any EAX certified warehouse; 2) grain handling and storage for a maximum duration of nine months, and 3) grain financing from any EAX certified bank or grain trader at the exchange that is facilitated by EAX. The buying and selling are done through an exchange using settlement accounts to ensure prompt and full payment is made for the purchased commodities. Transfer of payment is made within two days of the purchase and delivery of the commodity is within seven days.

The benefits of EAX extend much beyond the storing, trading and facilitating of financing. The exchange serves as a source of “price discovery” of commodity market price information across the nation, which in turn also reduces credit risk. Furthermore, its strict adherence to quality standards serves to promote improvements throughout the sector, while its trade settlements and delivery systems promote transparency and trust in the system.

What is the role of the government? The support of the government has been important to EAX in various ways. Firstly, transferable warehouse receipts (WHRs) could only be possible with the government’s support in the development of legislation for them. Secondly, the warehouses for storage are created in a private-public partnership with the government. Governmental support for compliance of contracts is needed, while the government also benefits from the regulated EAX system, improved trade and from higher levels of food security.

Moving forward is both promising and challenging. There is much work to be done to build awareness of EAX and improve the aggregation of farmer organizations, especially among the harder to reach farmers and aggregators. The number of commodities served and the warehouse capacity to grow are challenges. Yet, EAX has learned that all VC actors have acknowledged the benefits of their services and are fuelling its growth within the current commodities and in new ones and neighbouring countries.

Case prepared by Calvin Miller, with Olivier Ngoga, EAX,

www.ea-africaexchange.com

Questions for discussion

1. How does EAX help in reducing risk in financing?
2. How can smallholders benefit from the EAX?
3. What are four lessons to be considered when developing a commodity exchange system in your country, or outside of Rwanda?

Annex 20: M-Birr mobile platform for financial institutions

A common limitation of mobile money systems is that they are restricted to specific telecommunications systems, limiting their effectiveness to reach those on others systems. For example, mobile banking and mobile extension messaging to smallholders does not easily reach those on other systems. M-Birr is designed as a matrix and is the only payment service in Ethiopia to allow a customer of one MFI or bank to easily send money or payments to an M-Birr customer of another MFI or bank. This is because it is a bank-led mobile solution run and operated by six large microfinance and credit and savings institutions with 800 000 clients. Through M-Birr, these institutions use almost 750 agents to extend their services across rural areas that cannot be reached through their combined 800 branches.

M-Birr, a for-profit company, generates its income from mobile usage fees of birr 10-30 (3,5 cents to USD 1) depending on service and location. It currently manages three million transactions per year. Its outreach in rural areas has allowed agribusinesses, smallholders and financial institutions to communicate and make purchases and payments between each, other improving VC efficiency. Loan disbursement and payments, as well as savings, are also facilitated and the government uses the M-Birr mobile system for extension messages.

Case example prepared by Calvin Miller with employee interviews.

www.mbirr.com

Questions for discussion

1. What are advantages of a mobile platform that reaches multiple financing institutions? How could this be expanded?
2. What is an appropriate role of the government, if any to promote M-Birr expansion to other institutions are regions?
3. M-Birr can expand into new areas with its current services and/or add new services to its current clientele. Which services would you advise the board of M-Birr for agribusinesses and agricultural VC financing?

Annex 21: Value chain financing for youth in Rwanda

Rwanda, like many countries, is confronted with large numbers of rural youth requiring opportunities for employment. Agriculture and agribusiness hold promising opportunities to address this challenge. Youth in Rwanda are recognised to possess the creativity for entrepreneurship and hope for the future, and as such are targeted by the government and development agencies for support. However, bankers and even MFIs are reluctant to finance them owing to a lack of agribusiness and financial management experience, and a lack of collateral and invested capital.

The Rwanda Youth Agribusiness Forum (RYAF) was formed to collaboratively address the constraints youth face in agriculture and agribusiness. With the self-initiative of youth leaders and the support of government and development agencies, it focuses on five sectors: a) primary agricultural production; b) livestock; c) agro inputs and services; d) agro processing, and e) ICT in agriculture. The 1 446 RYAF members pay a monthly fee of RWF 1 000 per month (USD 1,20) for the services. RYAF is organised with a volunteer board and district coordinators. It focuses on specific needs identified as well as advocacy and linkages to markets and resources. Over 400 university interns are helping RYAF to map the needs, interests and VC opportunities for agribusinesses in the districts. The government's Business Development Fund provides members with funding support comprising a 70 percent low-interest loan and a 30 percent incentive grant. For youth that can provide 25 percent of their own investment, the government will also provide a bank guarantee of the remaining 75 percent to commercial banks to finance their initiatives.

RYAF indicates that it is very appreciative of this support in addressing financing, but is quick to note that financing must not come first. Capacity building, through technical support and mentoring and learning events, such as FAO-supported exchange visits and responses to specific needs of individual youth enterprises, are needed before financing is provided. Development partners, governments and banks must also believe in youth.

Case example prepared by Calvin Miller with RYAF Director and employee interviews

<http://ryaf.rw/>

Questions for discussion

1. Governmental policy to support youth has been instrumental in the development of RYAF. Do you agree with their approach? What else, if anything should be done?
2. RYAF uses university interns to help in agricultural VC mapping? What are the benefits to youth agri-entrepreneurs and to the university interns? Would this work in your country?
3. RYAF indicates that capacity development must come before financing. How can training institutes and agribusiness mentoring programs be incentivised to provide capacity development for rural youth in a long-term, sustainable manner?

Annex 22: From microfinance to agricultural finance for smallholders

Metemamen Micro Financing Institution in Ethiopia, owned by CARITAS, began to offer VC financing for agriculture to its smallholders. More than half of the MFI's 25 000 clients are involved in agriculture and 69 percent are women. The agricultural crops are teff, wheat, maize and barley, as well as goats, sheep and cattle.

The Metemamen MFI, which has a portfolio of approximately USD 7 million, primarily uses solidarity group lending for its members. The groups have 15-20 members per solidarity group with loan sizes averaging USD 350 per member within the groups. Metemamen also offers individual small business loans of larger amounts and employee consumer loans. All loans have monthly repayments except for the more recently introduced agricultural loans, which have balloon payments after 12 months, or sometimes sooner. Interest rates for all loans range from 15 to 20 percent per annum. Overall only 4,7 percent of the portfolio is at risk with the agricultural loans being somewhat higher due at least in part to a drought, since all crop production is rain fed.

Agricultural lending uses a group methodology similar to that of the Metemamen non-agricultural products. The process involves group formation by the farmers, an assessment of the sector and VC(s) of the group and a few training sessions on agriculture and group loan management. Loan officers are not versed in agriculture. Loans are prepared using the group or individual's price and production estimates. A group loan is prepared and disbursed in cash in one disbursement to individuals but with the group guarantee and/or collateral as additional security. Individuals purchase their own inputs with the loans as well as selling individually or through their community farmers' cooperative unions, if they are a part of one. Metemamen MFI is planning to offer mobile banking to offer more lending flexibility. The Metemamen management sees high potential for expansion of its agricultural lending and is looking for advice.

Case developed by Calvin Miller with interviews with Wegaychu Asrat, General Manager, Metemamen MFI

Questions for discussion

1. What adaptations has the MFI made to its agricultural loans?
2. Is the MFI following an agricultural VC finance approach? Why or why not? Explain your reasoning.
3. The overall PAR is acceptably low for the institution. However, what hidden risks can be foreseen in following their current methodology for financing agriculture?
4. As experts in agricultural VC finance, please provide advice to the management on how to strengthen or change their lending approach and suggest what is needed to implement those changes.

VIII. Comparative table of case study innovations and learning

AFRACA African case study summary by type of intervention									
producer and buyer driven business models (with facilitated capacity development support)									
Case study key elements	Afriland First Bank - SOCAPALIM / Hevea (Cameroon)	Farm Concern Commercial Villages (Kenya)	MADE, with Excel BitCom (Ghana)	Bonzali Rural Bank and Farmers Union (Ghana)	Kenya Commercial Bank (KCB)	Research facilitation driven (Nigeria)	SNV VC approach (Rwanda)	AFR change process (Rwanda)	
Description	Oil palm plantation transfer to smallholders with off-take agreement of oil palm company, with long-term financing. Model replicated in the rubber sector	Commercial approach of sustainable AVC development and financing	MADE NGO in Ghana builds/strengthens private agribusinesses for contract farming with inputs, offtaking and farmer organization and extension	Tripartite cashless financing partnership with a Farmers Union and multiple coops, a rural bank and an NGO facilitator	A commercial bank moving beyond its conventional banking model to finance agriculture with a VC approach	An unusual model where a government research center leads in VCF development	Capacity building and ongoing support to small farmers VCs	Incentives program for agricultural VC innovation	
Approach/ instrument/ technology	Land transfer buyout by small farmers with processor buyer contract	Producer-driven market-based village model of development based on VCs and VCF	Small holders using building capacity of input suppliers and buyers with maize and soya	Focus on the decision to take action from top policy level	Use of contracts, moveable collateral and other transaction based collateral substitutes	Capacity development, guarantee and insurance facilitation and producer organization	Warehouse receipts and policy and risk mitigation support of guaranteees and insurance from government	Competitive incentives for agricultural VC innovation	
Main target	Smallholder VC partnership and IT financing	Rural agricultural smallholder households	Agribusiness capacity building to help small farmers	What works for smallholders and bank	Financing all VC actors in selected VCs	Smallholders with rice and maize	Small farmers	Innovative agricultural finance organizations	
Business model and partnerships	Facilitated buyer driven	Facilitated integrated model	Buyer driven with facilitation and incentives	Buyer driven with initial facilitation	Facilitated buyer driven model	Facilitated producer driven model	Facilitated business model	Development agency incentives	
Innovation	Innovative and complex partnering for smallholder land purchasing and renovations	Innovation is the grouping and capacity building with a commercial business approach	Building contract farming and outgrower schemes	Comprehensive policy driven approach -- cashless finance, NGO capacity development for strong producers' unions	Major African commercial bank using VCF approach to reach smallholders	Applied research with farmers to develop a replicable model	Successful, longer vision approach	Lessons from competitive grants for change	
Comments	Complex land partnership with large company, government, farmer org., and NGO	Updated long case of a community level VC approach to development	Short case of contract farming agribusiness firms with smallholder farmers	Short - medium case fo successful farmers union and financing	Bank buyer-driven model	Unique approach that works well in harsh environment	General replicated model and potato example	Mini-case for reflection on the difficulties of sustainable change	
Highlight case	X	X							
Short case			X	X	X	X	X		
Case example								X	

AFRACA African case study summary by type of intervention

Case study key elements	Risk models						Technology applications	
	ACRE insurance (Kenya/Rwanda)	Nyala insurance (Ethiopia)	ACEP credit guarantees (Senegal)	Risk sharing facilities in Africa (NIRSAL, GIRSAL, Tamwil el Fellah, PROFIT & RARSEFF)	EAX Commodity Exchange (Rwanda)	ECX Commodity Exchange (Ethiopia)	Talaa IT solutions (Kenya)	M-Birr/Moss (Ethiopia)
Description	A quasi commercial agri insurance institution and two distinct country models	Description of the history, evolution and learning of the agricultural insurance for smallholders	Larger scale Credit Union financing for agricultural VCs with guarantees from USAID DCA	Comparing five comprehensive risk sharing facilities to increase financing through risk reduction and incentives	Fully commercial commodity exchange, especially for cereals	Fully commercial commodity exchange, especially for export crops coffee and sesame	Innovative ICT for agri VC and VC financing using mobiles and an IT platform	Mobile money platform and applied to rural finance, including data management
Approach/instrument/technology	Index based insurance and yield insurance	Indexed and yield agricultural insurance with microfinance	DCA 50 percent portfolio guarantees for AgVCF, plus factoring and other instruments	Focus is on how Central Banks and governments are addressing a market failure through a comprehensive risk mitigation policy approach	The use and role of the commodity exchange for financing and price risk mitigation, plus WHR	The use and role of the commodity exchange for financing and price risk mitigation, plus WHR	IT platform connecting input suppliers, farmers and buyers plus finance and TA messages	ICT and data management
Main target	Small farmers	Small farmers	Small producer clients	Bankers, to provide more agricultural lending	Traders and producer organizations	Traders and producer organizations	Small farmers with inputs, marketing and finance	Rural microfinance working with VCs
Business model and partnerships	Partnership approach	Finance and insurance	Credit Union facilitated	Policy approach	Commodity futures and warehouse management	Commodity futures and warehouse management	Private sector partnerships with VC actors	ICT wit buyer driven
Innovation	Applications of agri insurance	Indexed insurance with a longer track record of experience	Application of guarantees of portfolio for VCF and integrated finance and capacity development	Policy actions of risk sharing and incentives	Successful commercial commodity exchange	Successful commercial commodity exchange and warehouse management	Comprehensive ICT in multiple applications	A large, extensive mobile platform and its use in VCs
Comments	Common and unique versions between countries	Donor support initiated some of the work and now is continuing mostly on its own	Governmental state bank intervention	Comparison and reflection cases of macro problems and multi-faceted responses	Rapidly advancing private sector model	Many years of experience and evolution of services and delivery	Complex and innovative model, with long operational history and growing involvement	Fast-growing model with unique, multi-bank platform
Highlight long case							X	
Short case	X	X	X	X				
Case example					X	X		X

AFRACA African case study summary by type of intervention						
Women and youth		Financing needs and investment funds				
Case study key elements	Huckleberry women's VC (Cameroon)	RYAF youth (Rwanda)	SCL agribusiness financing (Nigeria)	Vintage farms (Ghana)	Metemamen smallholder AVCF	AVCF investment funds (Africa)
Description	Daily flows of huckleberries by women from NW to urban centers through multiple actors and payments	Youth forum organization, activities and lessons	Funding constraint and costs competition lending to viability issues	Agri SME entrepreneur struggling with finance for processing pineapples; with small farmer association producers, local bank and KfW funded Outgrower VC Fund	A MFI 's experience to attempt agricultural finance	Comparative highlights of agricultural impact investment funds working in Africa
Approach/ instrument/ technology	Indigenous VC arrangement and financing flows led by women	Collective youth action	Outgrower producers with niche market focus	Focus on health and survival of buyer-processor and financing	Understanding of differences between AVCF and MFI financing	Impact investing to help SME and smallholder agriculture
Main target	Small farmer women	Rural youth in agriculture and agribusiness	SME agribusiness with outgrowers	Agribusiness SME	Small farmer clients	Agribusinesses and smallholders
Business model and partnerships	Women-led producer driven model	Public-private SME partnerships	Buyer driven model	Buyer driven small agribusiness	MF business approach	International investor group's impact investment partnerships
Innovation	Informal, women led VC integrated VC and VCF flows among multiple stakeholders	Youth organization and enabling support	Niche market R & D with niche product development	SME innovation into agro-processing and an outgrower arrangement and the struggles	Learning focus on issues of moving into AVCF without understanding	Investment assessment processes and non-collateralized lending with trade finance/investment
Comments	Innovative case of women's informal, well-coordinated, multi-party VC integration and funds flow	Youth in action	Teaching and reflection case of the struggles of agri SME finance and competitiveness	Teaching and reflection case of the struggles of agri SME finance	Teaching and reflection case of not understanding AVCF	Compilation of strategies and experiences of impact investment models that work
Highlight long case	X					
Short case			X	X		X
Case example		X			X	

Tables

Table no.	Table name	Source /reference
1.1	Financial model descriptions	Authors S. Numbem and C. Miller
4.1	Value chain costs and returns	Authors S. Numbem and C. Miller
10.1	ACRE Africa partners in Kenya, Rwanda and United Republic of Tanzania	Authors W. Muthike, B. Kaimuri and C. Miller
10.2	Group organizational remedies	Authors W. Muthike, B. Kaimuri and C. Miller
10.3	Insurance lessons learned	Authors W. Muthike, B. Kaimuri and C. Miller
11.1	Portfolio insurance coverage fees	Authors S. Sarr and C. Miller
Summary table	Summary table – comparison by type of intervention	Author C. Miller

Boxes

Box no.	Box name
1.1	Excel BitCom Limited description using the MADE agribusiness development value chain model
2.1	Product – Replanting Guarantee Product (RPG)
2.2	Key lessons and observations made by ACRE Africa
3.1	DCA fee on portfolio
3.2	White rice value chain
4.1	Fairtrade access fund
4.2	Partner investee assessment
4.3	Pearl capital investment criteria
4.4	Small enterprise assistance fund
4.5	Triodos agricultural value chain investment approach
4.6	Root capital finance-plus model
4.7	African Agriculture Fund (AAF)

Figures

Figure no.	Figure name	Source /reference
1.1	Value chain map of the SOCAPALM oil palm plantation	Authors S. Numbem and C. Miller
1.2	Financial model of scheme showing outflows and inflows of financial transactions	Authors S. Numbem and C. Miller
1.3	HEVECAM smallholder rubber plantations value chain	Authors S. Numbem and C. Miller

Figure no.	Figure name	Source /reference
1.4	HEVECAM smallholder rubber plantation finance model	Authors S. Numbem and C. Miller
2.1	TAV commercialisation processes (from weed to cash crop)	S.K Mwangi S.K. and K. Mumbi K
2.2	Savings trends per farmer and place of saving	Source – Farm Concern International, 2016
2.3	Catalysing financial inclusion through smallholder farmers' collective marketing	S.K Mwangi S.K. and K. Mumbi K
4.1	Njamajama value chain map	Authors S. Numbem and C. Miller
5.1	Yield potential	MADE Ghana
7.1	Value chain analysis	KCB bank
7.2	Closed circuit value chain financing of maize	KCB bank
7.3	Value delivery through MobiGrow eco-system	KCB bank
8.1	Facilitator led financing – stage one	S. Abubakar, NAERLS
8.2	Facilitator led financing – stage two	Source – S. Abubakar, NAERLS
9.1	Potato value chain financial solution flow	SNV
9.2	Unguka Bank tripartite agreement	SNV
10.1	ACRE insurance service value chain	ACRE Africa
10.2	Creditlinked agricultural insurance	ACRE Africa
10.3	Value proposition of creditlinked agricultural insurance	ACRE Africa
12.1	Integrated financing model	S. Sarr
13.1	NIRSAL risk sharing facility in Nigeria	NIRSAL
13.2	NIRSAL Approach to implementation	Source - NIRSAL
13.3	GIRSAL risk sharing pillars	Source – T. Essel, GIRSAL
13.4	AFC risk profiling process	Source - AFC
13.5	Kenya Risk Sharing Facility	Source - AFC
13.6	Five pillars of RARSFF	Source - RARSFF
14.1	ECX warehouse receipt financing flow charts	Source – A. Belozertsev
15.1	SCL soybean agribusiness value chain	Author – C. Miller
17.1	Points of financing by investment funds	Author – C. Miller

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