



Core Group on the Consultative Forum
6th meeting
25 September 2014
London, United Kingdom

**World Bank/ICO compendium of case studies
related to improving risk management and
access to finance in the coffee sector
Request for advance review and feedback by
Core Group Members**

Background

1. The representative of the World Bank will introduce the attached draft compendium of case studies related to improving risk management and access to finance in the coffee sector at the Core Group meeting on 25 September 2014. It is circulated in an electronic format only in view of the length of the document. Core Group Members are requested to provide feedback at the meeting on the compendium and ideas on how best to disseminate it and achieve most impact, as follows:

- **Review:** The draft compendium requires detailed review and commentary from coffee sector peers prior to finalizing it. **To this end it is critical that Core Group Members consider it in detail, including whether the report is useful; whether it is accurate; and how it could be improved.** The authors appreciate that the report is quite large but would urge Members to review the case studies and opening sections in particular, to enable them to incorporate their feedback and suggestions.
- **Dissemination:** Traditionally final documents of this type are published and shared both electronically (using the ICO and World Bank websites) and physically (in document format), however at times these approaches may fail to maximize the readership (and hence the value) of the report. **What suggestions do Core Group Members have for maximizing the usage of this report and how may this be achieved?** Possible ideas may include creating a specific website dedicated to sharing knowledge on access to finance and risk management in the coffee sector; creating a forum online resource where interested parties may post information and exchange thoughts and ideas; and producing further case studies to build up the resource.

2. In addition to the Core Group, all ICO Members and members of the Private Sector Consultative Board are requested to review this document and provide feedback to the World Bank during the week of the 113th Council Session or by email to: rparizat@worldbank.org by **30 September 2014**.

Action

The Core Group is invited to provide feedback to the World Bank and ICO on this document.

A Compendium of Case Studies Related to Improving Risk Management and Access to Finance in the Coffee Sector



THE WORLD BANK



Ministry of Foreign Affairs of the
Netherlands



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra



INTERNATIONAL COFFEE ORGANIZATION

Acknowledgements

This study is the outcome of a collaborative approach between the International Coffee Organization (ICO) and the World Bank's Agricultural Risk Management Team. The concept of this report emerged during the September 2012 meeting of the Core Group of the ICO's Consultative Forum on Coffee Sector Finance. Its objective is to identify risks at different stages of the value chain, to determine their impact on the availability and the cost of finance, and to propose feasible remedial measures that could mitigate these risks. To meet these goals, this report brings together interesting and relevant case studies from coffee-producing countries showcasing risk, risk management, and improved access to finance. The authors of this report would like to thank all of the ICO members and coffee sector participants who contributed information, data and especially case studies to this report.

This report was prepared by a team led by Roy Parizat, Senior Economist at the World Bank and comprising Jan van Hilten (Consultant, Coffee Specialist), Erin Tressler (Consultant, Risk Management Specialist), Michael Wheeler (Consultant, Coffee Specialist), Robert Nsibirwa (Consultant, Coffee Specialist), Rebecca Morahan (Consultant, Coffee and Risk Management Specialist), Manel Modelo (Consultant, Coffee Specialist), Humberto Spolado (Risk Management Specialist), Jan De Smet (Consultant, Coffee Extension and Production Specialist), and David Pinto (Consultant). Damian Milverton served as external consulting editor to the final document.

A wide range of people and organizations involved in the coffee sector very generously contributed case studies and associated information, including: Denis Seudieu (ICO), the African Fine Coffee Association (AFCA), Paul Stewart (Technoserve), Sustainable Harvest Coffee Importers, Peter Baker (CABI), Luz Diaz (World Bank), Reji Varghese (BASIX India), CRDB Bank Tanzania, Elizabeth Teague (Root Capital), the Board and Managing Director of Coopertarrazu, Nsangi Coffee Farmers Association, Rabobank Foundation, Progresso, and Twin Trading, London.

The Coffee Guide, a website and resource provided by the International Trade Centre (ITC)¹, also shared a great deal of helpful information

The World Bank and the Multi-Donor Trust Fund, supported by the Netherlands Ministry of Foreign Affairs and the Swiss Secretariat for Economic Cooperation (SECO), contributed the finance for this initiative.

¹ - <http://www.thecoffeeguide.org/>.

Table of Contents

Acknowledgements.....	2
Table of Contents.....	3
Executive Summary.....	5
Section 1: Taming Risk, Unlocking Finance for a Vibrant Coffee Sector.....	6
Unrealized Potential: The Costs and Financing Implications of Unmanaged Risk.....	6
Access to Credit and the Ability to Manage Risk Effectively is Not Equal	7
The Greatest Potential for Improvement in Risk and Finance Exists at Origin.....	7
The Use of Case Studies to Illustrate Improvements in Risk and Finance	8
Section 2: Risk in the Coffee Sector	9
The Major Risks and Constraints in Coffee Production and Trade	10
Section 3: Finance and the Coffee Supply Chain	12
Availability of Finance	13
Constraints in Accessing Finance	14
Section 4: The Dynamics of Risk and Finance	16
Section 5: Case Studies	17
Risk and Risk Management.....	17
Enabling Environment.....	17
Market Risk	17
Production Risk	17
Improving Bankability for Coffee Sector Borrowers	17
Aggregation: the Challenges and Opportunities to Increase Finance	17
Value Chain Approaches to Risk Management and Finance	17
Case Study 1: The importance of a supportive enabling sector environment; Uganda, Tanzania and Kenya—A Comparative Case Study	18
Case Study 2: The value of Regional Private/Public Sector Initiatives: The Example of the African Fine Coffees Association (AFCA).....	25
Case Study 3: Managing Price Risk for Coffee Businesses: A World Bank Partnership with the East African Fine Coffee Association	30
Case Study 4: Futures Markets in Coffee Producing Countries	34

Case Study 5: Implementing Price Risk Management in the Rwandan Market Place.....	42
Case Study 6: Minimizing Price Risk through Variable Sales Using Call Options	46
Case Study 7: The 2012 Latin American Coffee Rust Outbreak: ‘Black Swan’ or ‘New Normal’?	51
Case Study 8: Recent Experiences of Coffee Replanting Programs in Colombia.....	58
Case Study 9 – Utilizing Technology and “Boots on the Ground” to Reach New Customers in India – the Sub-K Approach	69
Case Study 10: Farmers’ Access to Credit: Experience of Coffee Farmers in Ethiopia and Rwanda	72
Case Study 11: Incorporating Price Risk Management Into the Lending Operations of a Tanzanian Bank – 2005-2007	78
Case Study 12: Cédula de Produto Rural: A Tradable Receipt in Brazil	82
Case Study 13: COMRURAL Honduras – Crowding in Commercial Banks Through Matching Grants....	91
Case Study 14: De-risking the “Missing Middle” – the Case of Root Capital, a Socially-Oriented Lending Institution.....	96
Case Study 15: Warehouse Receipt Systems in the Coffee Sector – African Experiences.....	105
Case Study 16: The Benefits of Modernizing Costa Rican Coffee Cooperative, COOPETARRAZU.....	109
Case Study 17: Nsangi Coffee Farmers Association, Uganda.....	117
Case Study 18: Strengthening the Financial Capacity of Smallholder Businesses – the PorFin Project	121
Case Study 19 – Facilitating Lending to Smallholder Producer Groups – The Twin Approach.....	129
Case Study 20: Evolving Supply Chain Management – An Example From China.....	139
Case Study 21: Extending Access to Finance through the Use of Supply Chains.....	144
References	149

Executive Summary

Millions of coffee farmers and coffee trading enterprises lack sufficient credit. This is partly due to myriad challenges and considerable costs that formal lending institutions face serving rural, often isolated markets. It is also due to the inability of coffee farmers and enterprises to manage risks that keep risk-averse lenders at bay. To bridge this critical credit gap in the coffee supply chain, a better understanding of these risks is needed to respond with strategies, training and tools that can help farmers, and enterprises, mitigate their exposure to risk and strengthen their resilience against inevitable shocks. Such efforts could also help to increase the upstream flow of credit, to catalyze new productivity-enhancing investments, and to contribute to more profitable and more sustainable livelihoods for coffee farmers.

This report explores the role that producer associations, governments, non-profit organizations, the private sector, and other intermediaries can play in making risk management and financing tools more accessible and more workable for smallholder coffee growers. It examines the global coffee sector and outlines: 1) the major risks and constraints facing the sector; 2) how risks vary across the sector and how unmanaged risk constrains finance; 3) potential opportunities for improving the management of key risks; and 4) the relationship between access to finance and improved risk management.

Through the use of detailed case studies taken from a number of coffee-producing countries, this report seeks to demonstrate: how risks can arise that adversely impact on the coffee sector and those working within the sector; how risks can be better managed so that the sector is able to improve its resilience; how financing constraints can be overcome through a variety of innovative approaches; and ultimately how the improvement of risk within the sector can assist in improving access to finance. The rationale for utilizing case studies is to enable best practices to be shared more widely. Even today, there are gaps in research and understanding of these subjects, and these case studies can provide a means of considering interventions and informing thinking. Many of the cases detailed in this report have not been widely shared across other coffee-producing countries, despite these countries sharing similar risks and facing similar financing constraints. As such, it is the aim of this report to both raise awareness as to the potential means for improving the management of risks, and to demonstrate innovative approaches to expanding the provision of finance to the sector.

This report highlights the need for collaboration among all stakeholders within the coffee sector, both nationally and globally. Specifically, a number of the cases show that while individual actions may succeed in improving the management of one risk or reducing one of the constraints that limit financing, a more fundamental improvement in risk, as well as an expansion of financing, is not possible without a more holistic approach. However, where stakeholders work together to proactively tackle multiple risks and overcome multiple constraints, the impact can be dramatic, with a virtuous circle of improved risk management that generates improved access to finance, which itself facilitates further improvements in risk management.

To this end, this report considers the global coffee supply chain and the actors operating within it, and demonstrates, through the use of selected case studies, how collaborative efforts by actors and stakeholders can improve risk management and access to finance. It shows how risks can be mitigated and/or transferred between supply chain actors, and how coping can be facilitated through cooperative arrangements for when risks arise.

Section 1: Taming Risk, Unlocking Finance for a Vibrant Coffee Sector

As with other agricultural industries, the global coffee sector daily confronts risks that could hamper production, curtail potential markets, decimate margins, and even ruin entire networks of growers, roasters, marketers, traders and exporters. The prevalence of these risks reduces the incentives and willingness of financiers to lend to the sector, and also curbs the interest of coffee sector actors in borrowing to invest in their enterprises. Accordingly, better risk management could well be a step toward easier access to finance.

Compounding these issues is the reality that actors within the supply chain often have an inadequate appreciation of the risks they face, hampering their efforts to mitigate them and preventing adequate assessment and pricing by lenders.

The objective of this report, by showcasing a selection of case studies, is to demonstrate how improved risk management and the use of innovative lending products and processes can facilitate the expansion of lending to the coffee sector. This report outlines a number of potential opportunities for improving both risk management and access to finance in the coffee sector.

However, it must be noted that not all coffee supply chain actors are equal, and not all coffee supply chains are identical. As the report will show, a range of actors within the coffee supply chain face different exposure to risks, have varied levels of ability to manage such risks and similarly will face various degrees of difficulty in accessing finance. Similarly, no two coffee supply chains are identical, and while all supply chains have similarities, the major differences between supply chains in countries and regions, in terms of the participants and in terms of the structure of the industry, demands that there cannot be a “one size fits all” solution to improving risk and improving access to finance. Any existing mechanisms to improve risk and expand finance in one location will need to be tailored to the local context.

Unrealized Potential: The Costs and Financing Implications of Unmanaged Risk

The coffee sector, as with any other, has experienced tightened credit conditions during difficult financial times. Perceptions of increased risk have led lenders to cut the number of loans and the value of loans made, to raise interest rates, reduce exposure, and tighten lending criteria and terms and conditions. This kind of credit squeeze has hit coffee traders and, in particular, smallholder farmers.

The apparent lack of confidence in lending to the coffee sector is not completely due to historic repayment difficulties but also reflects the general challenges associated with lending to agriculture and the rural sector. These challenges include: relatively high transaction costs; weak credit cultures; lack of collateral (and collateral realization on default); and frequent climatic events that disrupt the industry. There is also the perception, often borne out by events, of high risk and ineffectual risk management.

The coffee trade and growers operate with a great deal of uncertainty and, as a result, must carry out their activities with imperfect information. Risk, therefore, has direct negative impact on the overall profitability of their operations and their ability to access finance. Additionally, while all coffee businesses are familiar with risk, they are often less familiar with how to quantify many of these risks and, in some cases, how to manage them. However, risk is one of the key costs associated with borrowing. Lenders will simply decline to lend when sector risk is perceived as unacceptably high. Risk, therefore, is one of the main reasons that the demand for financing in the coffee sector has not been met and has left many growers and traders without the financing to optimally run their businesses.

Even when risk is perceived to be at a level to encourage lending, the level of risk will play a significant role in determining the interest rate charged. Lenders need to determine an interest rate that accurately reflects their costs, the risks they are taking, and their profit margins. In most instances, the institution determines the appropriate interest rate for lending to a sector and to clients.

Access to Credit and the Ability to Manage Risk Effectively is Not Equal

In this limited credit environment, larger and more established borrowers are more likely to be able to access finance at an affordable rate. What this means in practice is that traders and other coffee agribusinesses face less challenges accessing finance than producers. While traders often also struggle to find finance, many of them have collateral or income from other businesses to support their credit requests, and many will have proven track records of proactive risk management. Producers, especially smallholders, usually do not have collateral available to secure loans and will often have the least access to risk management tools and procedures.

The differences in creditworthiness are also driven by the nature of the coffee sector, specifically that value increases as coffee moves along (or up) the supply chain. There is significantly more value, profit, and income as one moves up the supply chain, and as such those actors are better placed to meet the lending criteria of banks and access finance. Accordingly, the origin end of the supply chain faces the greatest shortage of financing, as it generates the lowest value. In addition those further up the supply chain are usually much more able to effectively manage their risks.

It should be noted that not all actors at the same point in the supply chain face the same challenges (Figure 1). Larger producers (estates) are often able to access sufficient finance and have the expertise and skills to effectively manage many of the risks that they face. Similarly, traders vary significantly in their ability to manage risks and to access finance. It is commonly perceived that smaller domestic traders can struggle to secure adequate finance and at times may be compelled to operate in a sub-optimal manner due to financing constraints, while larger traders with global reach may have access to finance both from domestic and international banks. Similarly, global traders will often have risk management expertise that is not as readily available to their domestic counterparts. However, in general it can be stated that the greatest challenge in terms of managing risk and accessing sufficient finance lies at the origin end of the supply chain.

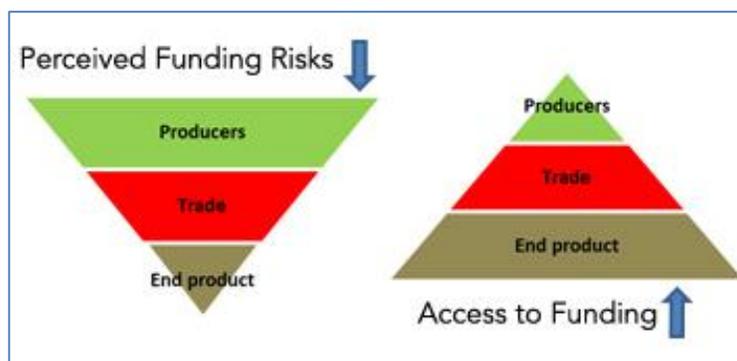


Figure 1. Inter-relationship Between Risk and Access to Finance

The Greatest Potential for Improvement in Risk and Finance Exists at Origin

Producers and domestic coffee enterprises face the most difficulties in accessing finance and improving their skills in risk management. At the same time, this end of the supply chain also presents the greatest opportunities if risk management can be improved sufficiently to bolster credit supply to these players.

The impacts of a lack of finance in the coffee sector have been significant and the estimated global demand for smallholder finance of US\$450 billion has largely remained unsatisfied². In addition, the lack of access to finance is a vicious cycle, in which the lack of finance prevents coffee farmers and enterprises from investing in their businesses and in risk mitigation techniques. Easier access to financing can enable producers to improve yields as well as the effectiveness of their risk management, realizing significant benefits.

The Use of Case Studies to Illustrate Improvements in Risk and Finance

This report has selected case studies from across the coffee-producing world that illustrate the inter-relationship between risk management and access to finance. Risks can be associated with the production process and also with the coffee market itself, and the case studies here include examples drawn from both categories. Enabling-environment risks cut across both production and market activities and are examined in the first two case studies here. Market risks – namely sudden and dramatic price shifts – are the focus of Case Studies 3-6, from the creation of domestic exchanges to facilitate price risk management through to technologically driven approaches and innovative cooperative programs using call options. Case Studies 7 and 8 look at the risk management implications stemming from recent rust outbreaks in Latin America, including the use of tree replanting in Colombia in an effort to avoid repeat losses from this disease.

These risks and the often-inadequate attempts to mitigate or manage them have served to discourage lending to the coffee industry, a constraint further exacerbated by its reliance on smallholder farm production and hence cooperatives for processing and marketing; both groups rank well outside the traditional client bases for risk-averse formal lenders. Accordingly, finding a means to broaden access to finance (in addition to improvements in risk management) is the central focus of Case Studies 9-18. Ideas range from utilizing mobile banking technology and agent networks to bring formal financiers closer to the coffee sector, to government attempts to “crowd in” private sector funding through grants. Some projects aimed to build management capacity among growers and cooperatives, while others aimed to address the perennial challenge of identifying collateral acceptable to financiers. The objective is to highlight specific solutions that, with tailoring, can be successfully applied in other environments and across all relevant sectors. However, poor adaption to local conditions and requirements can hamper successful replication of proven approaches, as illustrated by the case study of the CFC project in Rwanda and Ethiopia (Case Study 10).

² Dalberg Report: “Catalyzing Smallholder Agricultural Finance” [2012]

Section 2: Risk in the Coffee Sector

The apparent increase in frequency of commodity price spikes and crop failures, added to concerns over climate change, have increased global interest in risk management for commodities. In addition, millions of farmers are dependent on “non-food” commodities, including coffee, for their household income. They face both a highly risky production system and an arguably more complicated market, one that is more dependent on macroeconomic drivers in developed countries. For both sets of producers, the supply chains that link them to markets and their governments mean that the realization of agricultural risks can have a catastrophic impact. In addition to producers, a large number of other stakeholders are also involved in the coffee supply chains and they carry out a diverse range of activities throughout the continuum, from farm to cup. These stakeholders include input suppliers, traders, processors, banks and financial service providers, transporters, retailers, and government agencies. In one form or another, all of them are exposed to agricultural risk.

Not all risks are of equal importance and as such it is important when considering coffee sector risks to understand how each risk affects each set of supply chain actors. This process enables a financier to understand which risks should demand the borrower’s closest attention. It can be helpful to classify risks into one of three principal types of risks and prioritize them based on their probability of occurrence and severity of losses. It is important to note that there are often interconnections between risks, and additionally that managing one risk may lead to the creation of another, new risk.

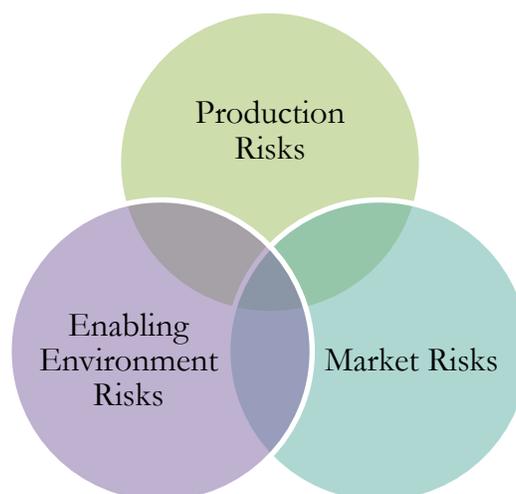


Figure 2 The Three Principal Types of Agricultural Risk³

The three risk categories are defined as:

Production risks: Weather events (droughts, floods, hurricane, cyclone, sudden drop or increase of temperature, frost, etc.), pest and disease outbreaks, bush fire, windstorm, etc., are major risks that lead to production volatility and livestock morbidity.

³ Taken from the World Bank’s approach for agricultural risk assessments.

Enabling environment risks: Changes in government or business regulations, macro-economic environment, political risks, conflict, trade restrictions, etc. are major enabling environment risks that lead to financial losses.

Market risks: These are risks that materialize on the market-level. They include commodity and input price volatility, exchange rate and interest rate volatility, and counterparty/default risk. Often these risks have backward linkages to the farm gate, thereby affecting all stakeholders.

While all of these risks, when they arise, have impacts across the supply chain, some are often borne more by one set of actors than others. Production risk in coffee impacts most greatly on farmers, as can be seen from the recent outbreaks of rust in Central America. However, the impact is also transmitted to other actors in the supply chain, as reduced coffee production and lower quality impacts their enterprises. Market risks such as price volatility tend to impact the origin, processing, and exporting parts of the supply chains most severely, and while roasters and importers no doubt encounter losses due to such volatility, the impact is most significant for those further down the chain. Coffee is often a highly politicized commodity in producing countries and can entail significant enabling environment risk. Changes to regulatory structures can affect all domestic activities (production through to export), while changes to research and extension services can greatly impact productivity at the farmer level.

The Major Risks and Constraints in Coffee Production and Trade

It is also important when considering risks to also consider the major constraints facing the sector. While risks raise the cost of financing and impact upon the willingness of financiers to lend to the sector, constraints also act as a barrier to lending, as they raise challenges both for lenders and borrowers. It is often the case that programs introduced to mitigate the risks required to improve access to finance will also need to consider how to overcome prevalent constraints.

A constraint is regarded as an existing condition or bottleneck that hampers smooth functioning of the supply chain and leads to sub-optimal performance of the supply chain. Risks and constraints are closely linked, with constraints often raising the potential for a risk to arise or increasing the losses experienced when the risk is realized. Additionally, many of the constraints limit the ability of actors to effectively mitigate risks. For example, in the coffee sector many countries have limited extension and research facilities; this is a key constraint that also worsens the impact of risks such as pest and disease outbreaks. Coffee trees can be left more vulnerable to outbreaks of pests and diseases when a lack of effective extension results in weaker agricultural practices.

As such, risks cannot be considered alone but rather in the context of the supply chain and its existing constraints, including the business-enabling environment. The business-enabling environment includes norms and customs, laws, regulations, policies, international trade agreements, and public infrastructure that either facilitate or hinder the movement of a product or service along its value chain. The business-enabling environment at the national and local levels encompasses policies, administrative procedures, regulations, and the state of public infrastructure. Analysis of the business-enabling environment at these levels may need to be further broken down in terms of firm size as there may be distinct constraints and opportunities facing micro- and small enterprises. In addition to these more formal factors, social norms, business cultures, and local expectations can be powerful aspects of the business-enabling environment. Understanding these unwritten rules of society is essential if

practitioners are to understand why value chain actors behave the way they do, and reasonably predict how they will behave in response to value chain interventions.⁴

Bearing in mind the definition above, the enabling environment for the coffee sector in a coffee-producing country will include: all the laws and regulations governing the sector; infrastructure in place, which will include roads, washing stations, processing facilities, etc.; coffee extension and research services; and all other public sector elements that determine how the coffee sector in that country operates. Enabling environments often vary substantially between countries, and are also subject to change over time as sector policies adapt and evolve, often driven by domestic government priorities and global market factors.

In short, an identification of risks and an appreciation of constraints can help provide a framework by which supply chain actors can manage risk. This does not necessarily mean that any risk can be eliminated but, rather, managing risk is an approach that can help reduce or contain the impact of risk when it is realized. In addition, there is often a cost in managing the risk and each person or enterprise will need to determine whether the cost is worth the protection offered. For example, sector participants can seek to protect against coffee price volatility by using coffee futures contracts (traded on commodity exchanges). However, these instruments come at a cost and also represent an opportunity cost as they eliminate the potential for users to take advantage of upswings in the market. It is also important to note that often a risk management tool may not fully protect against total risk.

⁴ Definition and other descriptions taken from USAID Microlinks Website: <http://www.microlinks.org/good-practice-center/value-chain-wiki/business-enabling-environment-overview>

Section 3: Finance and the Coffee Supply Chain

The scale of the financing needed to facilitate the global coffee trade emerges when considering that in 2013 exports totaled 6.79 million tons of green coffee, valued at US\$19.2 billion, while a further 2.68 million tons were sold domestically. It is helpful to consider financing of the coffee supply chain by considering the financing needs, and the availability of financing, for actors at each stage of the chain. As noted in the Introduction, lenders perceive that risk is greatest at the origin end of the coffee supply chain, which at least partly explains why access to credit is easier for those at the retail end of the chain than for producers.

Table 1 shows the needs, duration, and providers of finance at each stage of the value chain, both in producing and consuming countries. It also illustrates that actors at different stages of the value chain have a different range of financing sources available and require different types and durations of finance.

Activity	Providers of Credit	Common Value Chain Actors	Duration	Types of Finance	Reason for Finance
Production	Moneylenders, Credit Unions, Banks, Traders, Input Suppliers	Small, Medium, and Large Producers, Cooperatives	Short-/ Medium-term	Pre-harvest Finance, Seasonal Loans	Land Preparation, Crop Maintenance, Harvest
Purchase	Banks, Exporters	Traders, Middlemen, Exporters, Cooperatives	Short-/ Medium-term	Overdraft; Collection Credits and Stock Advances	Capital to Purchase Coffee Funds for Storing Coffee Fixed Operations Costs
Processing	Banks, Credit Unions, Exporters	Traders, Cooperatives, Processing Facilities	Short-/ Medium-term	Operating Finance	Storage of Coffee Operations of Coffee Mill Fixed Operations Costs
Export	Banks, Multinational Buyers and Importers	Exporters, Cooperatives, Large Traders	Short-/ Medium-term	Trade Finance Pre-shipment Finance	Storage of Coffee Transportation of Coffee
Importers/ Roasters	Banks	Roasters	Short/ Medium-term	Operating Finance	Operations of Roasting Facility Working Capital

Table 1 - Supply Chain Activities and Financing Sources and Requirements

There exists a wide range of lenders involved in providing financing to the sector, both formal (regulated financial institutions) and informal lenders (unregulated individuals and organizations who provide finance). Formal lending institutions include banks, microfinance institutions, credit unions, and other types of financiers, while informal lenders include moneylenders as well as other value chain actors who provide financing to secure supplies of coffee. It is notable that inter-value chain lending is a critical element of the financing arrangements of some actors. For example, a great many traders/collectors provide financing to farmers at the start of the season to secure access to their coffee, and many of these traders in turn receive financing from the exporters who similarly wish to secure their own supplies. Depending on the local market conditions, some exporters may at times receive financing from their importers. What is common to the inter-value chain lending flows is that all lending is based upon the needs of the actors to lock-in supplies of coffee⁵.

There is a mix of financing required both in terms of duration and purpose. As a rule of thumb, the shorter the maturity of the loan required, the easier it is to access the finance. For example, it is commonly perceived that producers will more easily secure harvest finance than pre-harvest finance or longer-term financing for investment. The vast majority of financing is for short-term purposes, namely for coffee trading (collection, processing, exporting, importing). Longer-term financing usually is required for investment in production facilities.

Availability of Finance

It is clear that not all actors in the coffee supply chain have the same level of access to finance and that a shortage of finance can greatly impact the efficiency of actors in undertaking their coffee sector functions. Availability varies based on both position in the supply chain and the duration of loan, with those further up the chain generally having much easier access to more affordable rates of finance (Figure 3). This is both due to the nature of the borrowers (enterprises versus farmers) and also the nature of the activities being financed, with financiers much more comfortable lending to activities where the coffee (the underlying commodity being financed) is on hand and can be utilized as collateral. In addition, the availability of finance varies markedly based on the loan term. All things being equal, the shorter the loan maturity, the greater the availability of financing, with longer-term loans being perceived as carrying far greater risk.

⁵ Source: Coffee Supply Chain Risk Assessments (Haiti, Uganda, Vietnam) – PROVIDE ADDTL Data

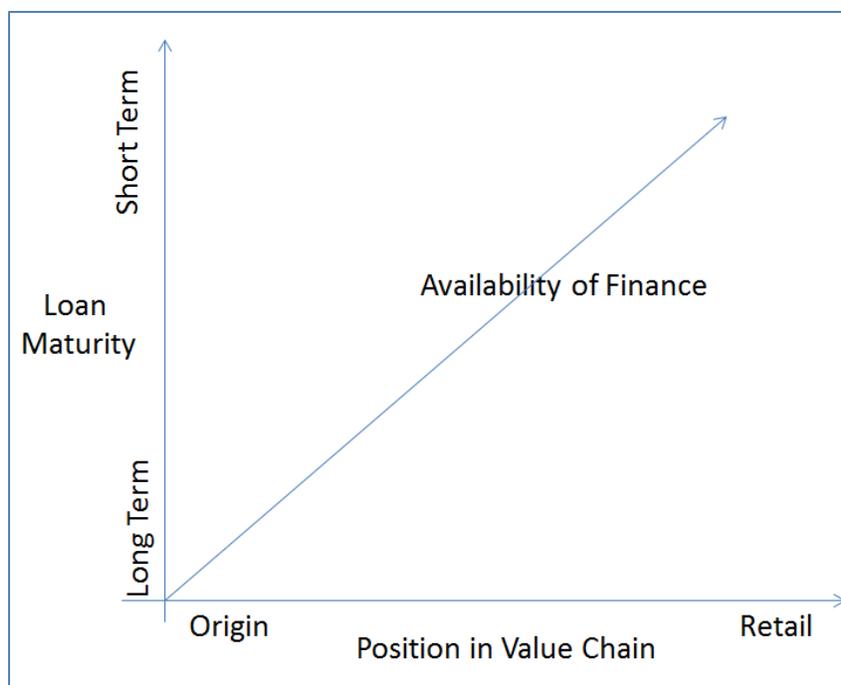


Figure 3. Availability of Finance

However one must also acknowledge the different experiences in accessing finance among actors at the same level of the chain. For example, exporters often vary significantly in their ability to access finance, in the range of financing options, and in the rates, fees, terms and conditions applied. Most dramatic are the differences in finance availability between domestic export operations and subsidiaries of multinational firms in terms of their ability to access finance. Multinational exporters (and their subsidiaries) often have access to lower-cost funds from across the globe and may have the ability to borrow not just from banks but also from a large range of non-bank financial institutions (if not from their parent company). Domestic exporters, by contrast, could be faced with much more expensive loans, with far more stringent lending requirements. The same is true of farmers. Smallholders, typically with a few hectares of coffee trees, might struggle to secure bank lending, whereas a much larger coffee estate will often find more willing financiers.

Constraints in Accessing Finance

While it is helpful to view funding availability based on the coffee supply chain, its actors, loan duration, and the level of risk, it is also imperative to consider some of the existing constraints specific to the coffee sector that can similarly limit access to finance. As the case studies demonstrate, many of the interventions aimed at improving access to finance often consider risk management alongside interventions to overcome existing constraints. Such constraints will be considered in the financing chapter of this report, and include:

Bankability Constraints

- Limited financial literacy of potential borrowers
- Lack of borrowing or credit history of borrowers
- No or limited (realizable) collateral
- Remoteness of producers and enterprises in rural areas as regards formal banking services
- High transaction costs/low profitability of lending to small borrowers (producers)

- A lack of credible aggregated associations of smallholder farmers (to overcome transaction cost issues)

Enabling Environment Constraints

- Regulatory challenges of lending to the coffee and agricultural sectors
- Historical performance issues when lending to the coffee sector (including debt forgiveness programs and a history of non-performing loans)

Constraints are highly significant and can be seen from two sides: the ability of the banks to lend to the coffee sector, and the ability of coffee sector actors to borrow from the banks. The most successful programs to expand lending by tackling risks also often involve reducing the impediments to finance imposed by the constraints. For example, the lack of realizable collateral held by coffee farmers often is a major barrier to the provision of financing. Banks generally will not lend without sufficient collateral that can be realized in case of default, both to meet internal lending rules and also to meet central bank requirements on loan classifications. As such, some interventions aimed at improving access to finance will directly address the lack of realizable collateral while also tackling risks that impact on farmer profitability; a combined constraint and risk approach. A good example of this holistic approach is the project implemented in Rwanda and Ethiopia for smallholder farmer cooperatives that provided guarantees as an alternative to realizable collateral. This case study is detailed later in this report.

Section 4: The Dynamics of Risk and Finance

The case studies strongly suggest there numerous opportunities to improve risk management and better facilitate access to finance for actors across the coffee sector. Indeed, the case studies contained in this compendium illustrate that actors across the coffee supply chain have been and continue to be focused on addressing individual risks and constraints, including a paucity of finance, that are considered to hamper the full potential of the industry. Some efforts have focused purely on production risks, such as disease outbreaks or climate impacts, while others have sought to reduce the potential for similarly catastrophic price falls in coffee markets or state-instigated changes to regulations and laws.

However, this report also considers the inter-relationship between risk, finance, and other constraints. Specifically, it addresses the opportunities that improved risk management can have for expanding access to finance, and how improved access to finance can enable investment in risk management for the sector. In essence this becomes a virtuous cycle with improvements in risk management leading to reduced exposure to losses from risks when they arise, that result in improved access to finance, which itself enables investment in improved risk management.

In the case of Root Capital (Case Study 14), the lender undertook responsibility for encouraging and guiding cooperatives' in their choice and use of credit products, graduating the borrowers to more complex and longer-duration loans in line with their success and their growing needs. Similarly, Sustainable Harvest (Case Study 6) provides an example of an importer that set out to encourage cooperatives in Latin America to become more adept at managing their price risk exposures by subsidizing their use of call options. The example of Twin Trading in Case Study 19 emphasizes the importance of complementing efforts at financial management capacity building at cooperatives and among growers with improvements in risk assessment, monitoring, and mitigation at lenders.

Building on such instances of symbiotic relationships within the coffee supply chain, the report concludes with two case studies (20 and 21) that highlight this positive relationship between improvements in risk management and improvements in finance. Specifically these are brought about by a "tightening" of the supply chain, with increased collaboration between the supply chain actors, which result in improved risk management and improved access to finance. In both cases, it is evident that there is a strong mutual benefit that derives from this supply chain collaboration, with the producer gaining in income potential while the buyer benefits from secure coffee supplies. This mutually beneficial approach to risk and finance often also includes the tackling of other sector constraints (e.g. lack of extension, research, and training), while the improved productivity of all actors justifies the costs involved.

Section 5: Case Studies

Risk and Risk Management

Enabling Environment

1. The Importance of a Supportive Enabling Sector Environment – Uganda, Tanzania, and Kenya: A Comparative Case Study
2. The Value of Regional Private/Public Sector Initiatives: The Example of the African Fine Coffees Association (AFCA)

Market Risk

3. Managing Price Risk for Coffee Businesses: A World Bank Partnership With the East African Fine Coffee Association
4. Futures Markets in Coffee-Producing Countries
5. Implementing Price Risk Management in the Rwandan Market Place
6. Minimizing Price Risk Through Variable Sales Using Call Options

Production Risk

7. The 2012 Latin American Coffee Rust Outbreak: “Black Swan” or “New Normal”?
8. Recent Experiences of Coffee Replanting Programs in Colombia

Improving Bankability for Coffee Sector Borrowers

9. Utilizing Technology and “Boots on the Ground” to Reach New Customers in India – The Sub-K Approach
10. Farmers’ Access to Credit: Experience of Coffee Farmers in Ethiopia and Rwanda
11. Incorporating Price Risk Management Into the Lending Operations of a Tanzanian Bank – 2005-2007
12. The Cédula Produto Rural (CPR): A Tradable Receipt in Brazil
13. COMRURAL Honduras – Crowding in Commercial Banks through Matching Grants
14. De-risking the ‘Missing Middle’ – the Case of Root Capital, a Socially-Oriented Lending Institution
15. Warehouse Receipt Systems in the Coffee Sector – African Experiences

Aggregation: the Challenges and Opportunities to Increase Finance

16. The Benefits of Modernizing a Costa Rican Coffee Cooperative — the Case of COOPETARRAZU
17. Nsangi Coffee Farmers’ Association
18. Strengthening the Financial Capacity of Smallholder Businesses – the Porfin Project
19. Facilitating Lending to Smallholder Producer Groups – the Twin Approach

Value Chain Approaches to Risk Management and Finance

20. Evolving Supply Chain Management – An Example From China
21. Extending Access to Finance through the Use of Supply Chains

Case Study 1: The importance of a supportive enabling sector environment; Uganda, Tanzania and Kenya⁶—A Comparative Case Study

This case study considers the experiences of three East African coffee-producing countries and their respective performances over the past two decades. It reviews the impacts on coffee production that were, in part, driven by different market structures, economic factors, and regulatory environments. Evidence suggests that in a country with a less challenging regulatory environment, the coffee sector could perform better in terms of production. However, it also notes that other factors including other economic activities may reduce the attractiveness of producing coffee.⁷

Compared with the early 1990s, coffee production has grown strongly in Uganda, remained more or less unchanged in Tanzania, and dropped sharply in Kenya. The question to consider is what has driven these different production outcomes, particularly as much of Kenya's coffee sells at above-average prices.⁸

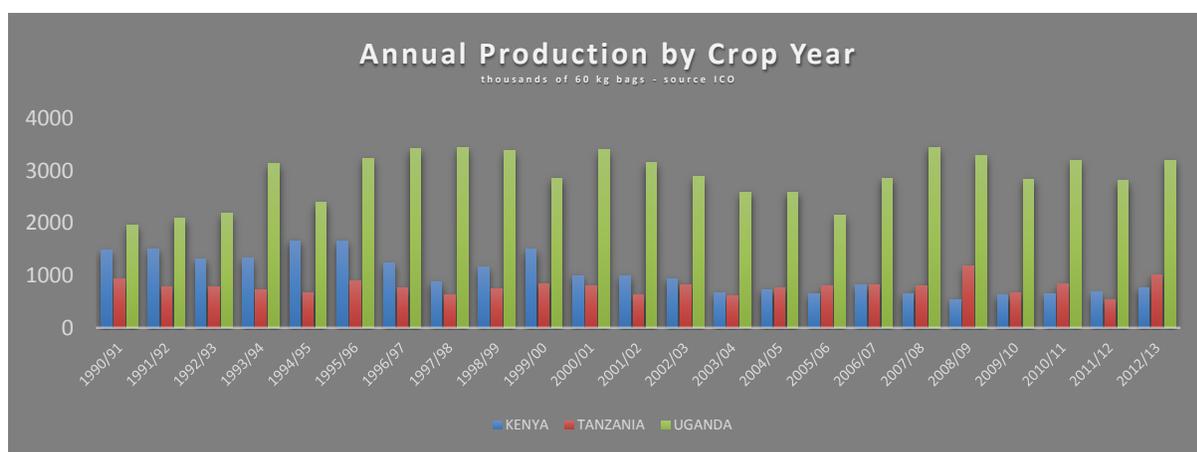


Figure 5.1 - Availability of Finance

1. Differences in Market Structures and Regulatory Environments

Uganda – a move to a less regulated environment: The collapse in 1989 of the 26-year international system of coffee export quotas left many countries ill-equipped to deal with free market conditions, which brought sharp price falls as accumulated surplus stocks were released. During this upheaval, a number of then-existing marketing monopolies eventually ceased to function, including the Uganda Coffee Marketing Board. Its withdrawal in 1991 ultimately caused most Ugandan cooperatives to collapse or exit the coffee business with major debts, leaving the sector as a whole in considerable disarray. Having previously been turned into little more than buying agents for a Marketing Board that set fixed prices for the season, the vast majority of cooperatives proved unable to cope with fluctuating

⁶ The term “enabling environment” refers to a set of inter-related factors that are often but not only government policies or actions, which jointly and severally influence the ability of a coffee sector and its stakeholders to prosper.

⁷ For example, the discovery and exploitation of energy sources could drive up domestic exchange rates, negatively impacting coffee production and export unless otherwise mitigated.

⁸ Uganda and Tanzania produce both Arabica and Robusta. Kenya only produces Arabica, although trials to grow also Robusta are under way.

prices in a liberalized market and the accompanying resurgence of both domestic and international private sector competition. As a result, much of the supply chain (that now consisted almost entirely of widely-dispersed smallholders and inexperienced intermediaries unable to develop new strategies to cope with the new realities) lost its erstwhile cohesion, leading to a dramatic reduction in the provision of key services such as extension, input supply, and credit. However, despite the upheavals that accompanied the industry's liberalization, the farmers' share of export value rose strongly; today Ugandan farmers on average receive between 70% and 80% of the value free on truck Kampala.⁹

Kenya and Tanzania – continued government regulation, support, and oversight: In Kenya and Tanzania, the long-established central auction systems (through which all coffee was transacted on a willing seller–willing buyer basis) had provided a relatively stable and continuing framework before the end of the global quota system. While increasingly seen as a constraint by some, at the time those systems were arguably better able to deal with the shocks that arose from the lifting of export quotas. This enabled the coffee supply chain in these countries to retain its cohesion to a significant extent, and to function more or less as before, albeit also at lower prices.

Despite the Ugandan coffee sector experiencing the most dramatic changes from the end of the global quota system, it is all the more surprising that Ugandan output should today outstrip that of both its neighbors, not just in Robusta but also for Arabica coffee.

2. Production of Coffee in Each Country Today

2.1 Kenya is economically the most developed of the three countries, with high demand for both real estate and labor around major centers. Production is divided between commercial estates and smallholders, with the former cultivating around 38,000 ha in the early 1990s and the latter around 122,000 ha. By 2012, however, these measures had fallen to about 24,000 ha and 85,000 ha respectively. Driving these changes has been a large-scale conversion of estates near main centers to commercial and residential use. While there have been some similar conversions of smallholder farms, much of the reduction in this sector is attributed to waning interest in coffee growing. This is surprising given that smallholders produce some of Kenya's best coffees, fetching very high prices internationally. However, yields are low, with average production in 2012 on estates around 1 MT/ha and that for smallholders just 367 kilos¹⁰. Unsurprisingly, coffee export revenues have fallen from first to third place nationally, well behind tea and Horticulture. Most coffee continues to be marketed through weekly auctions, but a second window also allows direct sales. ICO data put total 2012/13 production at 767,000 bags compared with 1.49 million bags in 1990/91.

The internal marketing chain is complex with a string of intermediaries. This is especially so for smallholders as some 200 cooperative societies handle a relatively small amount of coffee that is delivered as fresh cherry (Total production of 31,000 MT green bean in 2011/12, on average around 150 MT green bean per cooperative). This is then channeled to the auction through a number of cooperative unions, millers, and marketing agents. Fragmentation, small farm sizes, and a frequent lack of good corporate governance all contribute to low smallholder productivity, as does the apparent failure to fully exploit the potential of Kenya's relatively well-developed savings and loans cooperatives (SACCOS) in

⁹ The cooperative system has a long history in all three countries. It continues to be a major factor in both the Kenyan and Tanzanian coffee sectors despite a number of constraints and, particularly in Kenya, incidences of corruption causing many farmers to complain they receive too small a share of the actual auction price.

¹⁰ Source: CBK Data

terms of channeling payments and providing financial services to individual coffee growers. Finally, farmer revenues are subject to a number of taxes and levies, totaling 4.1%.

2.2 Tanzania has more agricultural land than Kenya, and in most coffee growing areas there is less population pressure. Although Tanzania has always produced some Robusta, output traditionally consisted of Mild Arabica, with smallholders delivering about 90% of total output from farms ranging from 0.5 ha to 3 ha, with some 110 estates accounting for the remainder.¹¹ In recent years, total production has more or less stagnated, but at some 40% of the national total in 2011 the share of Robusta had risen to double what it was in 1990. This does fluctuate however, in part due to unrecorded exports to Uganda. Arabica production in the south is being extended, given the availability of suitable land. The recently-launched Tanzania National Coffee Industry Development Strategy aims to increase production to 100,000 MT by 2021, in part by raising productivity from the current average of just 225 kg/ha (Arabica and Robusta combined).

The majority of smallholders (450,000 families who produce about 90% of Tanzania's coffee with estates providing the balance¹²) process on-farm to the parchment stage and deliver to their primary society or private collectors, however cherry is also delivered to a number of central processing units or wet mills. Prior to 2003, exporters bought and milled parchment directly, a practice that ceased with the introduction of the 'one license' rule, meaning exporters were no longer able to also act as collectors or millers.

The bulk of Tanzanian coffee is marketed through weekly auctions but, as in Kenya, there is also a second window permitting direct sales if the price matches or is better than what comparable quality obtains in the auction. The marketing chain is subject to a complex system of licensing and different statutory deductions totaling 6.1%. The Tanzanian cooperative sector also faces issues and constraints similar to those that prevail in Kenya, but not to the same extent. ICO data put total 2012/13 production at 1.02 million bags compared with 932,000 bags in 1990/91.

2.3. In Uganda, there have in recent years been severe setbacks to the industry, particularly from wilt or die-back disease in the Robusta sector; all in addition to the dramatic changes following the end of the global quota system. Nevertheless, the sector as a whole has shown strong resilience to bring it back to erstwhile production levels, rising from about 1.96 million bags in 1990/91 to about 3.20 million bags in 2012/13. Furthermore, whereas previously Arabica accounted for only a small share of national production, it now represents around 22% of total exports (2012/13) compared with about 14.5% in 1998/99. This incidentally means Uganda currently is not only East Africa's largest coffee producer overall (and the second-largest in Africa after Ethiopia) but that it also is on track to become the single-largest exporter of Arabica in East Africa, overtaking Tanzania and almost equaling Kenya. However, unrecorded imports of Arabica from the Democratic Republic of Congo (DRC; where a 15% provincial export tax applies) and Robusta (from both the DRC and Tanzania) play a certain part in this.

In contrast with its neighbors, Uganda levies only a 1% tax on coffee proceeds. The licensing and oversight regime in Uganda is light, with the Uganda Coffee Development Authority only intervening in industry operations when serious issues arise. Accordingly, there are no real restrictions on who operates where, or who does what. As a result, the marketing chain is both simple and efficient, which is as well, considering Uganda is landlocked and exports have to travel in excess of 1,000km to reach the Indian Ocean ports of either Kenya or Tanzania. Nevertheless, Uganda is also arguably disadvantaged by

¹¹ Tanzania also produces a small amount of Natural or Sundried Arabica.

¹² Source: Tanzania Coffee Board – www.coffeeboard.or.tz

having relatively weak coffee research facilities in place, especially when compared to the much larger research services of Kenya and Tanzania.¹³

3. Farmer aggregation. Farmer aggregation is often seen as the best way to enhance smallholder viability by providing farmers with improved market access, better agronomic extension and input services and, particularly in recent years, as a route to entry into sustainability standards. However, the history of the cooperative movement in many countries is mixed in terms of performance, sustainability, and effectiveness in improving the position of farmers.

3.1 In Kenya, much of the coffee cooperative sector is not only inefficient but also subject to corruption and political interference at different levels. The erstwhile apex organization, The Kenya Planters Cooperative Union, was placed under receivership in 2009, leaving a legacy of unpaid debts including non-payment for coffee delivered by individual cooperative societies. As a result, many co-ops remain in poor financial health. Kenyan smallholders are required by law to deliver their coffee to cooperatives and are prohibited from selling, for example, to private processors. Nonetheless, side-selling or 'hawking' still occurs.¹⁴

Furthermore, in many instances the bulk of local added value (which is substantial on premium Kenyan coffees) accrues at the marketing/export levels, whereas the final net remuneration per grower varies widely depending on which cooperative union or society handles the grower's coffee and its proceeds, with some growers receiving minimal returns. Previous attempts to improve the cooperative payment system (such as under the second phase of the Smallholder Coffee Improvement Project¹⁵) achieved mixed success in different areas, mainly due to having to deal with poor management structures and a lack of adequate capacity to administer funds effectively. However, there are encouraging signs in areas where the payment systems these initiatives promoted have become well-entrenched. In addition, legislation now stipulates that cooperatives may deduct no more than 20% from their total gross proceeds to cover processing and overhead expenses. Yet reports persist of both unauthorized deductions and delayed grower payments, ranging from three months to, in some instances, up to 1 year.¹⁶

Commercial growers or estates, on the other hand, generally present coffee to the auction directly, and as such they also receive the sales proceeds directly, less statutory deductions.

3.2 In Tanzania, farmer organization also takes the familiar form of primary societies at the village level, organized regionally under umbrella cooperative unions. These latter groups are responsible for financing, transporting, marketing, and supervising the sale of coffee supplied by their primary societies. Currently, Tanzanian cooperatives account for some 90% of total production. In recent years some primary societies have broken away from their unions to form separate entities; for example, to join third party certification schemes such as Fairtrade, but also in order to have more control over their own affairs and to access the second window for direct sales. Furthermore, the traceability of both coffee

¹³ A 2010 World Bank report noted only five full-time researchers were stationed at the then Ugandan Coffee Research Center that was also responsible for research in tea, cocoa, and palm oil. Today however, coffee research Center is once again the purview of a stand-alone institution (the National Coffee Research Institute or NaCORI) and plans are in advanced stages for its adequate staffing and funding.

¹⁴ See for example A. Mude, *Dismal Performance of Kenya's Coffee Cooperatives – 2006*; and Miriam Vorlauffer et al., *Determinants of Collective Marketing Performance: Evidence from Kenya's Coffee Cooperatives – 2012*.

¹⁵ Second World Bank 'Smallholder Coffee Improvement Project'. [ADD LINK](#)

¹⁶ See for example 'The impact of Coffee Certification on farmers in Uganda, Kenya and Ethiopia' by CIDIN, Radboud University of Nijmegen for Solidaridad – February 2014.

and proceeds provided by the auction system and its negotiable warehouse receipts system has enabled cooperatives to raise short-term finance against coffee stocks pending sale. Nevertheless, Tanzania’s National Coffee Development Strategy 2011/2021 aims to strengthen both the capacity and efficiency of cooperatives generally, recognizing that not all work well and that some areas need improvement.

3.3 In Uganda, there are increasing signs in recent years of farmers voluntarily creating farmers’ groups or associations to fill the vacuum left by many erstwhile cooperatives. This is mainly to access some extension support and to benefit from certification, and in so doing improve the marketability of their coffee. Donor and government support is increasingly channeled to such groupings of which there now may be close to 1,000 of different sizes and capabilities (possibly accounting for between 5% and 8% of total production), suggesting they are beginning to make an impact. This appears to be a positive development, although only time will tell which will be sustainable and whether the necessary internal cohesion can be achieved to safeguard the integrity of group finances.

Some market participants consider the formation of intermediary entities as cooperatives and associations as bringing additional layers of bureaucracy into the marketing chain. Nevertheless, the basic functions they perform are essential and are in effect the same as those performed by private buyers in the process of assembling the coffee produced by growers, processing it, and transporting it to the market, be that at an auction or for direct export. The real issue is the degree to which these entities can and do represent grower interests transparently, honestly, and in an efficient manner (efficiency is critical as the greater the efficiency of the activities the greater the grower’s share of the sale value of the coffee). Nevertheless, there is some evidence to suggest that if such entities function correctly, they can play a major role in advancing smallholder interests.

4. Characteristics of the Coffee Industries of Kenya, Tanzania, and Uganda

	GDP Per Capita ¹⁷	Approx. farm gate price as % of export values	Taxation & levies ¹⁸	Licensing/oversight	Marketing system	Farmer aggregation
Kenya	1,736.9	Estates around 90% of the auction value. Smallholders extremely variable, ranging from 70% to much lower. ¹⁹	4.1%	Complex and highly regulated	Closed - central auction/limited direct sales	Weak cooperative sector. Corruption. Smallholder sector highly politicized.
Tanzania	1,574.8	Between 65 to 70% of the FOB value but variable	6.1%	Complex and highly regulated but review is ongoing	Closed – central auction/limited direct sales	Relatively weak cooperative sector; some political interference.
Uganda	1,329.8	Between 70 to 80% of the Free on Truck Kampala value.	1.0%	Straightforward and lightly regulated	Open All direct sales	Growing trend towards farmer aggregation. Little political interference.

Table 5.1 – Coffee Industry Characteristics

¹⁷ 2012 –World Bank Development Indicators.

¹⁸ Coffee exports do not attract Value Added Tax but some value chain services do.

¹⁹ Recent ICO statistics do not feature prices paid to growers in these three countries and the data for this table are from different sources plus own estimates. Kenya estates are paid directly but of course cover their own overheads and processing costs whereas smallholders supply fresh cherry. To note also that particularly for high quality Kenyan smallholder coffee there is reportedly a large amount of added value between sale in auction and export, making a direct comparison with Tanzania and Uganda difficult.

4.1 Taxation levels detract from coffee's attraction in both Kenya and Tanzania, particularly so where growers feel they are not benefiting from the taxes and research levies they pay, especially local levies for roads maintenance and other local government activities. This encourages diversion where informal cross-border transits are physically possible, which to some extent probably has contributed to at least some of Uganda's progress. Alternatively, as is demonstrated by the case of Kenya's coffee sector, farmers may exit coffee in favor of other crops that are either not as highly taxed or whose farm gate prices are higher due to the absence of 'deductions' by an often non-transparent cooperative movement, as encountered in coffee.²⁰

4.2 Complex licensing and restrictive oversight often result in reduced competition and encourages inefficiency in marketing chains. Exporters in both Kenya and Tanzania are prohibited from participating downstream from the auction, whereas in Uganda they are free to purchase from local collectors. Some multinational coffee groups in Uganda are now engaging in actual production as well. This generally raises the competition for coffee at the farm gate and drives up the returns available to farmers. Following Tanzanian independence in 1962 and the imposition of export quotas in 1963, the state became a significant presence in the coffee sector, posing regulatory challenges for commerce. Until 2014, the coffee sector was still subject to no less than 15 different types of licenses, and the adverse impact of this regulatory environment was recognized in the Tanzania National Coffee Industry Development Strategy, which states, "the business climate can be improved".

4.3 Marketing systems are likely to be more efficient when open and transparent at all levels. This is not to say that central auctions are not efficient price discovery mechanisms (although the time gap between delivery and sale can be substantial and as such exacerbates exposure to price volatility risk), but without a tamper-proof mechanism to transfer the proceeds to the farmers, multiple layers after final sale result in additional costs that reduce the end-price received by the farmer. This is the main reason why so many of Kenya's smallholders complain of receiving very low prices, even when much of their coffee realizes high prices in the central auctions. There are a number of reports of farmers exiting coffee production for crops of potentially lesser value but for which they receive cash on delivery and a greater share of value.

5. Conclusion

Success in improving farmer incomes and attracting investment into the coffee sector is, to a large extent, dependent not only on the prevailing environment in a coffee sector but also on the presence of alternative economic opportunities that may be more attractive (as seems to be the case in Kenya). Where the regulatory environment is generally considered cumbersome, it is more challenging to encourage farmers to invest in their production (or to continue growing coffee), and similarly challenging to encourage private sector actors to invest in additional coffee sector activities.

As a result of its looser regulatory framework, the Ugandan coffee sector has in recent years benefited from significant private sector inflows (with direct investment in both production and processing), accompanied by a number of development programs focusing on productivity, quality enhancement, and building grower capacity generally. In Uganda, development partners are increasingly working with the private sector through matching grants to encourage moves towards value chain partnerships between the private sector, farmer groups, and the public sector. This approach has managed to

²⁰ The GDP figures demonstrate the much higher level of economic activity and therefore alternative economic opportunity in Kenya, particularly when compared with Uganda.

leverage resources for both impact and sustainability of the effort and could in time perhaps also impact positively on the ability of farmers to raise finance independently.

In Tanzania, there are signs of an emerging realization of the need for change and for a more encouraging environment for public/private partnerships, recognized once again in the National Coffee Development Strategy. In Kenya, on the other hand, major changes to broad agricultural oversight functions, including the proposed absorption of the Coffee Board of Kenya into a newly formed Agricultural, Fisheries and Food Authority with numerous responsibilities, might well impact the timing of necessary reform of the current regulatory regime.²¹

This study provides a brief sketch of three different sector environments. Two maintain a highly regulated approach that many consider impacts adversely on the health and growth of the coffee sector, with the third more lightly regulated while the state nevertheless provides a necessary minimum level of oversight. However, for all three countries, low productivity remains a concern, alongside ageing farmer populations and exposure to risks posed by both climate change and price volatility.

²¹See Agriculture Sector Functional Analysis – A Policy, Regulatory, and Legislative Perspective by: Abraham Rugo Muriu, IEA Kenya, and Hillary Biwott, IILA Kenya. See www.internationalbudget.org/wp-content

Case Study 2: The value of Regional Private/Public Sector Initiatives: The Example of the African Fine Coffees Association (AFCA)

Overview

This case study examines the ways in which the African Fine Coffees Association (AFCA, previously EAFCA) has evolved beyond its initial role as a regional coffee sector organization focused on marketing, policy, and sector advocacy to being able to add substantial value to the process of improving coffee sector environments in individual countries.

While many of AFCA's activities could have been undertaken directly by each member country, the Association has proven adept at undertaking these on behalf of all its members by aggregating resources and aligning them with emerging opportunities. It has also displayed an ability to attract donor funding for its activities, bolstered by the introduction of the now prominent annual AFCA coffee events.²² A growing realization by policymakers and industry bodies that AFCA represents a worthwhile and knowledgeable discussion partner has enabled the Association to assist with the development of appropriate sector policy and regulation in different African coffee-producing countries. This confirms that regional private/public initiatives can bring both positive results and greater exposure. Other coffee-producing regions would benefit from this example by embracing the view that the sharing of knowledge, and experience, augmented by active promotion, can bring benefits to all. AFCA's case also highlights that only major coffee-producing countries can catalyze the large-scale attention and exposure that AFCA has achieved for its smaller coffee-producing member nations.

Background

The Eastern African Fine Coffees Association, the precursor to today's AFCA, was established in 2000 as a result of an initiative by coffee professionals from different backgrounds who held to some common views, namely:

- As the birthplace of both Arabica and Robusta coffee, Africa is home to a wide diversity of unique coffees. However, to benefit from this advantage, producers needed to understand their markets and buyers better.
- The future belonged to the organized. This presumption was already well appreciated in East Africa, but numerous challenges remained that affected all African coffee-producing countries.
- Addressing these challenges required a regional, apolitical sector body, not only to promote fine coffees from Africa but also to collaborate with government authorities in producing countries and to liaise with important interregional bodies elsewhere, such as the specialty coffee associations of America, Europe, and Japan.

Incorporated in Uganda in 2000 with both public and private members from Burundi, Ethiopia, Kenya, Rwanda, Tanzania, and Uganda, the initial objectives were to address the following challenges:

- A lack of institutional arrangements in addressing issues affecting specialty coffees.
- Inadequate quality/specialty coffee orientation among many producers.
- Inadequate coordination with research institutions and limited technology transfer.

²² Today, 2014, AFCA is however entirely self-funded for all its administrative and operational costs, and it funds a large proportion of its program activities from internally-generated income.

- The need to better understand both the market and the product and to join the specialty and sustainability movements that were afoot at the time.
- Generally weak linkages with both the international trade and roasters.

Resource constraints made these objectives difficult to achieve by individual countries, demonstrating the need for a regional industry organization.

By 2003, another five country chapters had already been established in the Democratic Republic of the Congo, Malawi, South Africa, Zambia, and Zimbabwe. In 2012, AFCA transformed itself into a pan-African organization with members joining from Cameroon and African and Malagasy Robusta Coffee Agency (ACRAM), a body that brings together African Robusta producers.

By early 2014, AFCA had country chapters in 11 countries and 252 members, ranging from individuals to companies and public entities.²³

How was this achieved?

In 2002, USAID began supporting AFCA due to concerns that the East African coffee sector was failing in the wake of a global glut of extremely low-priced mainstream or commodity-type coffee. This assistance (initially through the Regional Agricultural Trade Expansion Support Program, and subsequently through the Competitiveness and Trade Expansion Program) enabled AFCA to show the value of bringing together industry stakeholders from across the region to focus on both improving product quality and raising the profile of the region's truly unique coffees. This was done by establishing and promoting a network in the Eastern Africa coffee-growing region to:

- Exchange information and promote the production, processing, export, and consumption of the finest quality coffee through education and training for coffee professionals and other stakeholders.
- Encourage the development, establishment, and implementation of a modern, regional marketing infrastructure in order to:
 - Increase the purchasing power of coffee growers
 - Improve buyers' accessibility to fine coffees from the region
 - Promote the rewarding of coffee quality with premium prices
 - Improve industry accountability, transparency and professionalism
- Liaise with any organizations on matters relating to the promotion of the fine coffee industry, inform all members of all such developments, and facilitate joint activities where considered appropriate.
- Encourage sound business and professional practices.
- Enhance consciousness of environmental and social as well as socioeconomic issues related to the industry.

Until 2007, however, AFCA was entirely donor-funded, with an insufficient emphasis on commercial values or results. A thorough review led to AFCA being rebranded and its goal amended to increasing the value and volume of African fine coffee exports, and to promoting the domestic consumption of coffee in Africa by improving market linkages and building business relationships through trade conferences.

²³ AFCA chapters: Burundi, DR Congo, Ethiopia, Kenya, Malawi, Rwanda, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. A new chapter is being established in Cameroon.

Additionally, AFCA aimed to become fully self-funded through commercial activities, such as providing training and hosting annual conferences.

To expand market and trade activities, AFCA facilitated member attendance at premier specialty coffee events held worldwide to promote and prominently feature Africa's coffees. Additionally, AFCA hosted the annual *African Fine Coffee Conference and Exhibition* and organized trade missions for its members to selected import markets to enhance market linkages and business relationships. AFCA also hosted "Meet the Buyer" cocktail events in conjunction with international coffee events and established networking "Coffee Clubs" in its member countries.

AFCA conducted annual national cupping competitions and regional 'Taste of Harvest' events to promote awareness of fine coffee within member countries and enhance coffee quality. These competitions evolved into the 'African Taste of Harvest Competition' and, as a result of this the very first Cup of Excellence Competition and Auction in Africa was held in Rwanda in 2013.²⁴

Training has been expanded using the AFCA-developed 'Know your Cup' sessions in which farmers, traders, and processors are informed about coffee quality and grading, and how to improve quality, including the basic premise that "coffee is food" and should be treated as such. On the domestic consumption side, AFCA, through its national chapters and members, organizes barista training and barista championships to promote both the brewing and consumption of fine coffee.

Even so, following a review of AFCA activities, a new strategic plan was adopted for 2010 that narrowed its focus from eight to four key priorities. It is now directed to areas where there is high constituent demand and where AFCA already has a track record of delivery.

AFCA as partner in policy dialogues.

Whilst AFCA's value as a promoter of African fine coffee is widely acclaimed, there is another equally important part to its work, that of influencing sector policy and regulation where this is in the interests of coffee growers and exporters. As AFCA established a name for itself it became increasingly possible for it to meet and present compelling cases for change to relevant ministries and other authorities in member countries. AFCA's approach utilized its unique position in several key respects:

Insider Information: Stakeholders in different AFCA member countries would provide data and issues to AFCA to present to their country's authorities. These stakeholders might perhaps have feared adverse reactions if they engaged these authorities themselves or could previously have failed in discussions with them. Most authorities tend to view AFCA as neutral and working without any particular political agenda and as a result are sometimes more receptive to its suggestions than they are to suggestions from their own industry stakeholders.

Projection of authority and respect on coffee issues: AFCA has built a strong brand and in the countries where they hold their annual conferences there are many interactions at the personal level with policymakers and government officials before each event. Most, if not all, have been appreciative of the fact that these events bring many buyers and coffee professionals to their country and as a result have become receptive and supportive to suggestions on how to improve their coffee industries.

Comparative evidence of better performances: AFCA would provide empirical data on how other countries were progressing in terms of increased production and investment, or on matters such as the

²⁴ Visit www.allianceforcoffeexcellence.org

farmers' share in the export price, payment systems, research funding, etc. Such evidence is usually very compelling and powerful in support of AFCA's advocacy.

Easy access to government officials: AFCA has cultivated easy access to government officials. In all countries in which they have hosted a conference, AFCA has been able to meet the head of state, as well as the line ministers with whom they usually meet several times. This is not always the case for the country coffee industry players.

Coffee board membership: Most if not all coffee boards from the 11 AFCA member countries are paid-up members of AFCA, and a few are represented on the AFCA board. This allows effective engagement on trends in the global market both in the AFCA board and during the annual conferences.

Annual African Coffee Policy Forum: AFCA initiated the Africa Coffee Policy Forum, which is hosted prior to the AFCA Annual Conference. This forum picks a topical policy or regulatory issue affecting regional coffee trade and development that is researched, presented, and discussed. The forum includes coffee board officials, policymakers from the respective countries, donors, and key coffee experts. The last forum, held in Uganda in 2013, reviewed the barriers to regional coffee trading among AFCA countries, and transit issues in the Northern Corridor that runs from Bujumbura, Kigali, Kampala, and Nairobi to Mombasa and carries 90% of the coffees from this Great Lakes region.

The Impact of AFCA on Coffee Policies

AFCA has been instrumental in influencing sector regulation or policy in different countries by meeting and presenting compelling cases to the concerned ministries or authorities.

In Kenya and Tanzania, AFCA made the case for relationship coffee²⁵ and the growth of sustainability/certification segments in the market that could not be supported adequately through the Nairobi and Moshi auctions. This resulted in what was termed as a "second window", first in Kenya and subsequently in Tanzania. The direct trade through these windows has grown, especially so in Tanzania.

The reform of the Tanzania coffee taxation system (2003/04) was heavily influenced by the example of Uganda where taxation amounted to just 1% as compared to the heavy mixture of district and national taxes levied in Tanzania before the reforms, with AFCA facilitating some of the necessary exchanges and provision of comparative data. In another tax-related issue, The Democratic Republic of Congo Chapter is seeking AFCA support to reduce the government coffee tax that now stands at 15%.

The liberalization of the Burundi and Rwanda coffee sectors, as well as the planning of coffee sector reforms in Tanzania, relied in part on case studies from Uganda, and benefitted from AFCA's ability to arrange for delegations to visit and experience how Uganda managed its own liberalization exercise.

AFCA advocacy contributed to the defeat of the so-called Tetu project in Kenya that in 2005 proposed to buy all Kenyan coffee, roast it, and export it in what amounted to an export and import monopoly. The AFCA Secretariat briefed the Kenyan authorities on the dangers posed by this proposal, leading to its ultimate rejection.

Uganda's coffee research institution was reinstated as an autonomous entity, with its own staff and resources, purely because the AFCA Uganda chapter was able to provide data on coffee research

²⁵ Coffee marketed directly between growers and roasters with a focus on longer term collaborative relationships between the sellers and buyers.

support from Ethiopia, Kenya, and Tanzania. These showed the superior level of funding and human resources that these coffee research institutions had at their disposal when compared with the prevailing arrangements in Uganda, This despite the fact that Uganda was producing five times more coffee than either Kenya or Tanzania, but where coffee was just one of about 36 crops under the purview of a national research institution.

AFCA's experience demonstrates that the comparative analysis of different country performances has the most impact when the analysis is shared with countries where the coffee sector environment might still require further liberalization and adjustment if it is to respond more adequately to the demands of to-day's coffee world. AFCA therefore plans to continue with the policy dialogue agenda by consolidating the interventions that have had the most impact to ensure that the African coffee industry as a whole becomes more competitive and to boost trade. Not only with importing nations abroad but also between AFCA member countries by promoting also regional trade in green coffee as a way of supporting prices.

Conclusion

AFCA has demonstrated the benefits of marketing, with the experience in Rwanda probably the most widely-known and obvious example. That country's coffee industry moved from almost total collapse to the point when, in 2013, the first-ever "Cup of Excellence on African" soil was held in Kigali. This provided a compelling demonstration of the country's emergence from years of turbulence to a prominent position as a supplier of specialty coffee, as well as AFCA's ability to generate the publicity and attention that brought a large number of coffee professionals and coffee buyers to that event. Similarly, the 2014 AFCA conference brought almost 700 international attendees to Burundi, an equally small country also attempting to promote itself as a supplier of fine coffees and where no coffee conference had ever been held before. Similarly there is general acknowledgement that awareness of and prices for Mzuzu smallholder coffee from Malawi have both increased substantially since that country first participated in an AFCA conference. Other coffee producing regions can benefit from this experience recognizing that only major coffee-producing countries can attract the large scale attention, and that regional events may raise the profile of smaller coffee nations.

Case Study 3: Managing Price Risk for Coffee Businesses: A World Bank Partnership with the East African Fine Coffee Association

Objective: In 2009 the African Fine Coffee Association (AFCA) hoped to assist its members in better managing price risk in order to improve the sustainability and profitability of their operations, as well as to ensure they could access the credit needed to optimally run their operations.

Response: AFCA partnered with the World Bank to provide its members and other interested parties in East and Southern Africa access to training on price risk management techniques.

Background:

The East African Fine Coffee Association, now the African Fine Coffees Association (AFCA), began in 2000 as a regional, member-driven association representing coffee sectors in 11 member countries: Burundi, the Democratic Republic of the Congo, Ethiopia, Kenya, Malawi, Rwanda, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. Membership in AFCA is made up of specialty coffee professionals from the entire coffee value chain, including production, trade, export, import, retail, consumers, roasters, cafes, and the allied coffee industry. The work of AFCA focuses on marketing, quality, advocacy, promotion, and research for African Specialty Coffees.

AFCA formed just before the coffee crisis in 2001/2002 when world market prices tumbled. Many of AFCA's members lost both money and access to finance because of the fall in prices. In order to assist its members in responding to similar price changes in the future and better prepare them to deal with intra-season price volatility, AFCA decided, as part of its ongoing training initiatives, to provide training on price risk management for its members. It was hoped that by better preparing clients to deal with price volatility they would be able build the financial resilience to ensure that their clients could maintain their operations and continue to repay their loans finance when prices moved unfavorably. This in turn would help with continued access to the credit needed by coffee businesses to produce high quality and specialty type coffees.

During this same period, the World Bank, in response to the negative effects that price volatility was having on the coffee industry, began working in earnest on pilot programs that would identify how producers, traders, and cooperatives could best utilize price risk management instruments to manage risk. These pilots programs were undertaken in partnership with cooperatives, traders, and individual growers and focused on the use of physical and financial (futures and options) risk management instruments to manage risk. The pilot programs were ongoing for more than five years in Africa, Latin America, and Asia and provided a good deal of information about the best use of risk management instruments and some of key elements and activities for producers, traders, and cooperatives that hoped to manage risk. Using the experience gained from these pilot efforts, the World Bank designed a course on price risk management for coffee that brought together the lessons learned. The course was a culmination of the work that had been carried out by both the World Bank and others working on managing price risk in the coffee sector.

The course has five modules:

- Module 1: Introduction - The first module defines how price risk is created while operating a coffee business. While those operating in the sector often appreciate the existence of price risk, it is not completely understood how normal trading operations are creating this risk.
- Module 2: Marking to Market - In the second module, the course shows how to quantify price risk and how the magnitude of that exposure changes with price movements. Because price risk is not static and is heavily influence by the risk position of the trader, changes in price can have significant impact on the client’s risk position and potential profitability.
- Module 3: Introduction to Physical Risk Management Strategies - Next the course provides strategies for managing this risk through physical risk management approaches. Physical risk management strategies are typically less expense and also often more accessible to coffee businesses in developing countries.
- Module 4: Thinking in Two Markets – This section summarizes financial risk management instruments such as futures and options and how these can be utilized to manage risk.
- Module 5: Implementing a Price Risk Management Program – Finally, the course shows how these strategies can be implemented in a coffee business. This module brings together all the previous modules. It describes how to use the instruments from Module 3 and 4 to manage the risk a business has created through its trading operations (Module 1 and 2).

With this step-by-step pedagogy, the course is meant to serve as a practical guide for small- and medium-sized coffee trading businesses and cooperatives. It should make these businesses aware of how price risk is created and some of the opportunities for managing it. It is hoped that by the end of the course participants would be able to:

1. Understand the dangers of not managing their exposure to price risk
2. Be able to implement simple procedures to assess and monitor their exposure to price risk
3. Know how to use physical and financial risk management tools available to them to manage their price risk
4. Implement these tools within their operations to manage price risk for a coffee trading business

Box 4.1 Overview of Risk Management Courses

In addition to this price risk management course for coffee, the World Bank has developed a menu of courses on agricultural risk management issues. These courses highlight various risks that agricultural businesses and producers face and aim to provide training on the tools available to manage them. All of the courses are unique but follow the same modular format. Each module has core reference material that summarizes the topic of the module. This core material is usually presented in a book, PowerPoint presentation, or both. To support the core reference material there is additional material included that aims to reinforce the topic. For all of the courses, participants are required to learn the core material, review written materials (books, PowerPoints, links, articles, etc.) and participate in discussion forums. The majority of the modules also have homework associated with the course work and each module has a quiz. At the outset, the courses were designed and posted online, but the World Bank has also delivered these courses to live audiences as needed and requested. Summaries of the courses are currently accessible at:

<https://www.agriskmanagementforum.org/content/world-bank-agricultural-risk-management-team-training-materials>

Action

Based on the desire of AFCA to provide training on risk management to its members and the availability of the coffee price risk management course from the World Bank, the two organizations partnered in 2009 in order to roll these courses out to AFCA members and to build the capacity within AFCA to run these courses on its own. The aim was to train AFCA members in price risk management to protect their operations, which would in turn make AFCA members better credit risks for lenders.

Approach

In order to allow AFCA to provide this training on an ongoing basis and as part of its normal operations, one of the goals of this partnership was to train AFCA to deliver the course on its own. This capacity building was carried out through a series of events aimed at training AFCA trainers to deliver the course and supporting them in their course work with AFCA's membership. The first of these events was held in October 2009 in Uganda, where an initial training was provided by the World Bank to AFCA staff and trainers from the AFCA Quality Training Institute. This event was carried out over the course of five days and run by World Bank staff who had designed the course. AFCA staff were given guidance on how to deliver the course materials in their own training efforts, and they conducted some mock delivery sessions under the guidance of World Bank staff.

This initial train-the-trainers event was followed the next week by a training course for a group of East African coffee traders and associates. To see how much the AFCA trainers had learned during the training and to provide additional mentoring on how to deliver the course, the training was delivered by the two AFCA trainers selected from the previous week's instruction. It also included a variety of people working in the coffee business. The World Bank staff observed and supported the staff throughout the week to improve the course as needed.

This initial training led to subsequent sessions delivered by the AFCA team with World Bank support. These training sessions were typically conducted over three to five days and covered all the modules of the course including quizzes, exercises, role-playing games, and homework.

Box 4.2 Examples From the Price Risk Management Course

In 2011 the course was delivered in Arusha, Tanzania by the World Bank, and it covered the dangers of unmanaged price risk for a coffee trading business, monitoring and assessing price risk, managing price risk through physical risk management tools and financial instruments (futures and options), and the implementation of a price risk management training program within a coffee trading business. Attendees were divided between coffee trading enterprises (primarily sustainable certified cooperatives from Eastern Africa) and capacity building organizations that work with sustainable certified cooperatives. The goal of the training was to both assist coffee trading enterprises in better managing the price risk that they experience in their day-to-day operations and to raise awareness of the issue of price risk management with capacity building organizations so that they may build price risk management into their ongoing programs.

In 2011 the course was also delivered in Ethiopia with a trainer from the World Bank supporting the AFCA trainers. The trainees consisted mainly of managers and staff of coffee producer and trading organizations, as well as staff of the Ethiopian Commodity Exchange and the National Bank.

Outcomes and Lessons Learned

Content and Usefulness of Training. At each of the trainings, the content, delivery, and materials were all received positively. Participants seemed satisfied with the content of the training and believed there was a need for training on these topics within their organizations. Feedback from the students rated the AFCA trainers very highly and provided positive feedback about the usefulness and appropriateness of the course materials. At the Arusha training, a number of capacity building organizations were invited and all of these organizations noted the ongoing need for this type of training and stated their desire to integrate this material into their existing programs.

Technical Ability to Deliver Course. It is believed that the capacity building work carried out by the World Bank prepared AFCA to deliver the course as needed to members dealing with price risk. After the training sessions, it was believed that the “master trainers” were capable of working through the course material with a group of students and adding in local context as needed to provide a robust course on price risk management. AFCA was then ready to provide training across the region. However, this rollout was limited since AFCA had insufficient funds to provide the course to all its members. In addition, the master trainers worked for AFCA on a contract basis, which meant they could be pulled away for other assignments or be otherwise unavailable for delivery. Accordingly, the course was not disseminated on an ongoing basis.

Improving Risk Management Techniques. While there was no ongoing evaluation and follow-up with the participants who were trained, there was some evidence that those who took the course were also utilizing the training to improve their risk management practices. One example was contained in anecdotal evidence provided by the local market agent of a small estate farmer from Kenya. The estate farmer had returned to Kenya in May 2011 after having undertaken the coffee course and worked to manage price risk. The farmer conducted a detailed breakeven analysis and subsequently identified a suitable hedging strategy for his business. Using his marketing agent, he hedged approximately half of his forecasted coffee crop for that season and locked in a price. His transaction was facilitated by his marketing agent, who recognized the value of assisting clients in securing their financial positions through the use of price risk management instruments. There was no systematic research done on the impact of the price risk management training carried out by AFCA, but it is hoped that others participants utilized the knowledge gained through these trainings in the same way as this Kenyan participant.

Case Study 4: Futures Markets in Coffee Producing Countries

Overview

This case study examines why, other than in Brazil and despite a number of attempts, to date no viable futures markets for coffee exist in coffee producing countries. In India, despite no less than four attempts (with some initially encouraging results), no active coffee futures trading has emerged, basically because the market there is too small to support it; Indian production of about 5 million bags per annum is split between Arabica and Robusta. Conversely, in Vietnam, production is large enough to support a domestic futures exchange but to date the two attempts to establish a viable coffee futures contract have failed to gain traction.

Interest in developing alternative or domestic futures markets in coffee-producing countries appears to be growing, the reason for this growth in interest is not fully understood but some industry commentators in part appear to attribute to a suspicion that the world's leading futures markets in New York (Arabica) and London (Robusta) at times witness price movements not fully related to regular supply-demand type price discovery. The lesson appears to be, however, that domestic futures markets for coffee will only gain traction if the support base (production) is large enough and there is true industry demand; i.e. there are enough interested participants to create the necessary liquidity. To date this has not been the case in any coffee-producing country other than Brazil. Additionally, the regulatory environment has to be supportive, the integrity of the contract has to be guaranteed, there has to be a clear link with the physical market, and there should at least be the opportunity for arbitrage with the New York and London futures markets.

But even so, whereas a positive enabling and regulatory environment in Brazil resulted in a thriving Arabica coffee futures contract (for 100 bags), Figure 5.2 suggests that interest has been diminishing. One explanation is that low coffee prices and differentials in 2012/13 reduced the allure of arbitrage with New York, whereas increasing volatility on the New York Coffee "C" Futures Contract (NYKC) market has caused the arbitrage between the coffee futures contract of the Bolsa de Valores, Mercadorias & Futuros de São Paulo (BM&F) and NYKC to become more and more erratic. Additionally, in recent years Brazilian growers have extensively diversified their production so that today they offer substantial volumes of Specialty Coffee, Washed Arabica, and Pulped Natural Arabica, as well as the traditional straight Naturals. Yet the BM&F futures contract remains based on Naturals type 4/5 or better, good cup or better.

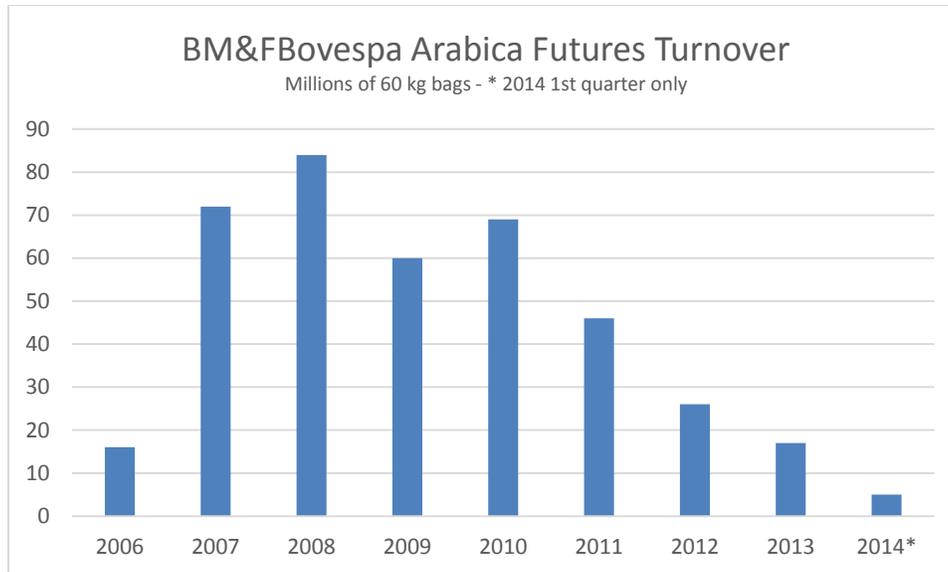


Figure 5.2 – BM&F Arabica Futures Turnover

Background. Case Study 15, entitled ‘Warehouse Receipt Systems (WRS) in the Coffee Sector’, illustrates that without an option to sell forward, holders of such receipts remain fully exposed to price risk. Yet the introduction of WRS in a number of countries was mainly intended to facilitate access to finance that in turn would avoid forced early season selling by farmers when prices are low. As the case study noted, however, in the coffee sector, warehouse receipts are almost exclusively used to finance already aggregated semi-processed coffee that is stored in licensed coffee mills/warehouses pending final processing/sale/export (or spot selling as in Ethiopia), leaving the owners exposed to notoriously volatile price fluctuations until sold.²⁶ This scenario again raises the question as to just why, with the exception of Brazil, there are no functioning futures markets for coffee in any coffee-producing country.²⁷ As mentioned, only two other countries – India and Vietnam – have pursued the establishment of such markets, with little success.²⁸

1. Futures Markets in India

1.1 Coffee Futures Exchange of India. Following liberalization of the industry, the Coffee Futures Exchange of India (COFEI) introduced the first coffee futures contract in 1997, trading both Arabica and Robusta. Contract size was 1 MT (Arabica) and 600 kg (Robusta), reflecting the makeup of the Indian producer community, which is predominantly smallholder-based.²⁹ At its peak, COFEI recorded trades of 77,036 contracts or almost 50,000 MT in 2000 (see: Figure 5.3). Interest subsequently dwindled, mostly

²⁶ The study also noted that collateral management is the most prevalent form of secured lending in the coffee trade.

²⁷ Brazil: BMF-Bovespa: <http://www.bmfbovespa.com.br/en-us/markets/commodities-and-futures/commodities-and-futures.aspx?idioma=en-us>

²⁸ There are two leading futures markets in the world: New York for Arabica (The InterContinental Exchange or ICE – www.theice.com) and London for Robusta (<https://globalderivatives.nyx.com/nyse-liffe>). ICE controls both markets.

²⁹ India has a number of actively trading commodity and metals exchanges, and all come under the ambit of the Forwards Markets Commission (FMC) of India, which is itself under the Ministry of Finance. The FMC regulates all aspects of futures trading and settlement.

as a result of the coffee crisis when speculators lost heavily and growers also exited the market amid steep price declines. Trading finally ceased altogether on August 31, 2005, and COFEI was liquidated.

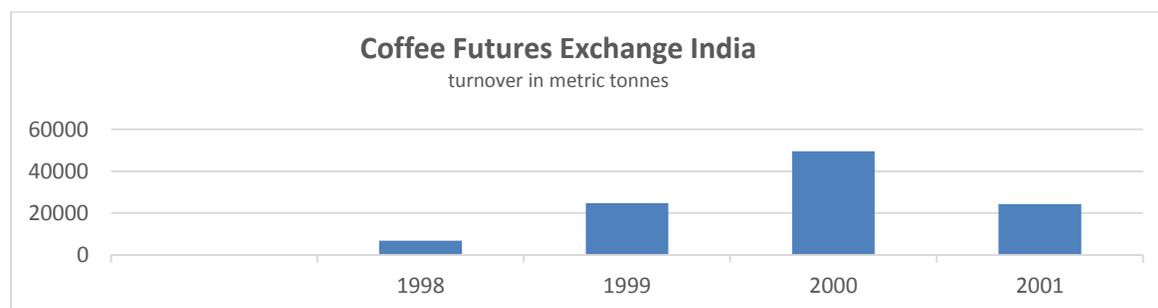


Figure 5.3 – Turnover (MTs) – Coffee Future Exchange India

1.2 National Commodity and Derivative Exchange (NCDEX). The National Commodity and Derivative Exchange introduced a 2 MT Robusta futures contract in April 2005, with trading hours to coincide with the London Robusta closing time. Interest was limited, causing the contract to be re-launched in September 2007 but it did not gain traction and was finally withdrawn altogether in mid-2008.

1.3 The Multi-Commodity Exchange introduced a 1 MT Robusta futures contract in January 2007 that initially attracted strong speculative interest, with 128,319 contracts traded during the first three months of operations. Once speculators realized that the potential returns were meager compared to other commodities, turnover fell sharply and from November 2007 onwards trading was in single digits, causing the contract to be abandoned later in 2008.

1.4 The National Multi-Commodity Exchange (NMCE) launched both Arabica and Robusta futures contracts in early 2005, but poor levels of participation soon caused the Arabica contract to be halted, with only limited trading continuing in Robusta. The Robusta contract (1.5 MT) was re-launched in October 2007 with extended trading hours. Today, NMCE is the only Indian exchange to still trade Robusta futures, although recent turnover figures have been uneven: 38,220 lots or 57,330 MT in 2012; 24,245 lots or 36,376 MT in 2013, and 10,615 lots or 15,922 MT as at March 10, 2014.³⁰

1.5 Discussion. Indian commodity exchanges (softs and especially precious metals) are very successful and active thanks to both excellent organization and a large pool of both small and large investors who help provide the necessary liquidity. This makes the failure of the coffee market all the more puzzling, although there some explanations have been suggested.

Successful soft commodity contracts in India represent essential commodities that are produced and consumed in large quantities by the Indian population. Not only does the general population know these commodities well but there is also a strong link with the physical or spot market because such commodities are physically traded daily in designated market places known as 'mandi'.

By contrast, coffee is less prominent in what is predominantly tea-drinking culture, and is traded only among a limited group of stakeholders (mainly in the South of India). The lack of a large domestic market makes establishment of a successful, liquid futures contract difficult. If the market lacks

³⁰As per FMC regulations the NMCE website (www.nmce.com) also shows a spot price for Arabica but this is for information purposes only; no trade or delivery takes place.

operators who are interested in taking physical delivery, for example domestic roasters, then over time the link with the physical or cash market becomes tenuous at best.

In general, futures prices for mainstream commodities traded on the Indian commodity exchanges relate to Indian fundamentals; i.e. supply and demand and the weather (particularly the monsoon). As a result, spot and futures prices for mainstream commodities in India are closely related but this is not the case for coffee because the quality of most Indian graded Robusta and Arabica for both export and domestic consumption is much higher than what is represented by both the domestic and the London and New York futures markets. Nevertheless, Indian coffee futures rely for direction mostly on price movements on the two international markets, even though quality and domestic prices in India are much higher. As a result, for Indian coffee, particularly Robusta, there is no real link between futures and physicals, and this undermines the entire strategy of tendering physicals against futures.³¹

Accordingly, while physical delivery of coffee against futures has always been possible, it was little used mainly because there were so few parties interested in taking delivery, with most (especially speculators) preferring settlement instead. The few physical deliveries that have taken place often resulted in quality disputes because, perhaps not unsurprisingly, the tendered quality did not suit the purposes of the recipient, only further discouraging potential interest.

In the absence of correlation between the physical product and the futures market, there is little point in using such a market for hedging purposes, as the two show different price levels and may also move in opposite directions. Hedging, however, assumes the two prices will eventually converge or at least move more or less in tandem. Without hedgers, a futures market comes to rely on speculative activity alone, which is unsustainable; over time all come to share the same view, i.e. all want to buy or, all want to sell. As a result volumes fall and liquidity is lost.

As demonstrated by the vibrancy (liquidity) of other commodities on the Indian futures markets, it is clear that actively-traded commodities and the links between futures contracts and physicals are well understood, and prices in the physical spot market reflect prices on the exchange (showing a domestic demand for such commodities). However, this is clearly not the case for the domestic coffee market, where fundamental information is sparse and there is no obvious link between futures and spots, resulting in limited interest and low liquidity for the coffee futures contracts available on Indian exchanges. Low liquidity always poses risks for holders of open positions because, as mentioned, when all or most participants have the same objective, it becomes impossible to quickly close out a position. The strength of liquid futures markets is that one can always and immediately buy or sell thanks to the continuing presence of market makers, traders, and speculators. Where this is not the case, the market has no real value as a hedging platform because one cannot 'lift' a hedge when required.³² In any case, given that the annual Indian production of around 5 million bags is split between about one-third Arabica and two-thirds Robusta, the Indian coffee sector is in fact too small to support a viable domestic futures contract.

³¹ Of course prices for commodities as cotton, edible oils, sugar, and soya are to a certain extent also influenced by international price movements, but not so the locally-produced and consumed pepper, copra (dried coconut), guar gum, guar seeds, cardamom, mustard seed, castor seed, barley, potatoes, turmeric, chillies, coriander, cumin, etc.

³² For example, an exporter sells physical coffee forward to an overseas buyer; coffee that the exporter does not yet have and that it must buy later in the season. To mitigate the risk that prices might rise before it can purchase coffee, the exporter hedges it by simultaneously buying an equivalent amount of coffee futures. When it comes to buying the physical coffee to fulfill the forward contract, the exporter must be able to lift the hedge (i.e. sell the futures) simultaneously. If this is not possible because of an absence of buyers for the futures, then not only is the futures market of no use as a means of hedging one's risk, but the exporter might incur a substantial loss as well.

1.6. Warehouse Receipts in India. While, at least in part, insufficient education and information played a role in the failure of coffee futures trading to gain traction and the contracts failed to take hold, the work of the exchanges nevertheless benefited the coffee sector. The establishment of a coffee futures contract requires a systematic approach that ensures that all of the prerequisites for a successful contract are put in place, including the availability of transferable warehouse receipts, collateral management, and the involvement of commercial banks. These services obviously offer real value to a commodity sector even without an exchange in place. In this respect NCDEX did establish a fully-fledged collateral management scheme in 2004 through a company called National Collateral Services Ltd. (NCMSL).

NCMSL no longer deals with coffee as such but today provides services for a range of 42 different commodities including soya, wheat, sugar, and so forth through 486 warehouses spread over 131 locations, and provides formal collateral management services for some 14 major commercial banks. In addition, warehouse receipts are widely issued against physical stocks (under The Warehousing Development and Regulation Act) that are negotiable instruments of title. These can be pledged as collateral, traded, and transferred and can be used as tender against an open futures position. This confirms the role commodity exchanges can play in developing warehouse receipt systems.³³

2. Futures Markets in Vietnam

2.1. The Buon Ma Thuot Coffee Exchange Center (BCEC) in Dak Lak commenced operating in 2008 as a spot market for physical coffee, which would be warehoused and inspected by the exchange prior to sale. The aim was to provide a transparent market system that allowed farmers and collectors to access all available pricing information and so negotiate better prices, whereas buyers would be assured of both quality and contract integrity. BCEC partnered with a settlement bank, an independent quality control agency, and a warehouse operator (which was itself active in coffee trading/exporting). This approach initially appeared successful, with turnover of some 20,000 MT in its first year. However, the turnover was probably assisted by the fact that the settlement bank also offered warehouse receipt financing for up to 70% of the value of the underlying goods. Even so, interest soon dwindled when it turned out that against many sellers there really was only a single buyer; the company running the warehousing function. As a result, the spot contract lost traction with farmers who seemingly objected to having to deliver to coffee warehouses in Buon Ma Thuot that were controlled by a single buyer; the growers preferred to sell to more easily accessible collectors instead. Some may also have been under the impression they would receive a subpar price because of the market position of the warehousing company. It would also seem likely that other exporters would object to having their purchases handled by a competitor. During 2012, turnover fell to just 137 MT which, incidentally, also led to the dissolution of the warehousing partnership. As a result, there was no turnover whatsoever in 2013.³⁴ However, through a new partnership with Ho Chi Minh Development Bank, BCEC is now finally able to offer a fully independent warehousing package that appears to have rekindled interest in the spot trading service with a turnover of 3,200 MT in the first quarter of 2014.

As early as 2011, BCEC had also received regulatory authorization to add futures trading and started offering a 2 MT contract, designed to enable individual farmers to take part. This has failed to gain traction, however, in large part because BCEC has been unable to attract outside partners with the requisite expertise to help develop the futures trading side of its business. Impending government

³³ Other collateral managers include NBHC, Arya Collateral, Geo-Chem, and Star Agri.

³⁴ The longer-term intention was always that BCEC should invest in its own warehousing and processing facilities, enabling it to offer a full range of services to farmers, but this never materialized for a variety of reasons.

regulations are expected to facilitate such partnerships. To date, most of the small turnover has come from market makers themselves.

2.2. The Vietnam Commodity Exchange (VNX) in Ho Chi Minh City was established as Vietnam's first fully-fledged commodity derivatives exchange in 2010 and it commenced offering a 5 MT Robusta futures contract in 2011. It was expected that linking the contract to both the London Robusta market and the Singapore Commodity Exchange (SICOM) Exchange in Singapore would encourage participation (by providing two separate quality specifications). This link should have assisted liquidity in that VNX could offset contracts on either of these exchanges should local liquidity be insufficient. Exchange-licensed warehouses would store coffee to be tendered and the objective was to arrange for grading to take place at the London exchange, eventually leading to LIFFE-certified coffee being available ex-warehouse Ho Chi Minh City.³⁵ This arrangement was expected to assist stockholders in raising finance against such London-graded stocks and so further increase liquidity on VNX. Sadly, VNX seemed to be ahead of its time; the necessary legislation to facilitate such arrangements with outside partners, such as the London exchange, was not yet in place. Additionally, there was no in-house coffee trade experience at the exchange, leading to an absence of understanding of market fundamentals and dynamics. Moreover, the potential client target group of large producers, traders, and exporters was in any case directly or indirectly active on the LIFFE market already. In the event, none of the proposed arrangements materialized and by 2013 VNX had closed down entirely.

2.3 Discussion. In contrast with the experience in India, the export price for Vietnamese Robusta market is directly linked to the London futures market, with individual growers actively monitoring price developments through mobile phones, tablet computers, and the like.³⁶ Given this, any Vietnamese domestic futures market should be linked to the London market in some fashion and should offer opportunities for arbitrage between the two to promote interest as, for example, can be done between the Brazilian and New York Arabica exchanges.³⁷ In theory, Vietnam, with an annual production well in excess of 1 million MT, should be able to support a viable coffee futures exchange, if there is sufficient liquidity. There has to be interest from both sellers and buyers (including producers, collectors, exporters, domestic roasters, and investors/speculative traders): if only sellers or only buyers appear, then trading becomes impossible. This essentially led to the demise of three of the four Indian coffee contract initiatives. Additionally, there also should be links with the physical market, in that there have to be parties who are interested to receive or deliver actual coffee. In contrast to Brazil, current domestic demand in Vietnam is far too small to be a factor and it seems unlikely that other parties, locally or abroad, are really interested in taking delivery through a domestic exchange. The same is true for India's sole surviving coffee futures contract, where a lack of interest in taking physical delivery has starved the market of liquidity.

³⁵ Ho Chi Minh City is Vietnam's main coffee export port.

³⁶ Prices for physicals are closely related to developments on the London market, and given Vietnam's importance as a supplier, this cuts both ways, with differentials narrowing or widening depending on Vietnamese domestic fundamentals.

³⁷ In this context, arbitrage means trading the difference between two markets in the belief that the value of one is over- or under-stated vis-à-vis the other.

As with any market, futures contracts for coffee in Vietnam will only gain traction once there is real industry demand to provide the necessary market liquidity, which, to date, has not been the case.³⁸ That said, other factors could also play a role in promoting such a market:

- The regulatory environment has to be supportive, not only in terms of attracting experienced and financially strong partners, but also in terms of recognizing that there has to be at least the opportunity for arbitrage with the London futures market.
- There has to be an appropriate operating environment, i.e. the integrity of all contracts is guaranteed by a well-resourced clearinghouse, and there is adequate independent supervision.
- The status in law of both the public warehouse operators and the negotiable warehouse receipts they issue for exchange-graded coffee is clear and unambiguous.

However, this still leaves unresolved the question of the quality of physical deliveries and who would be interested in taking delivery.

Exchanges trade a standard, average product based on a requirement that the quality of coffee tendered has to conform to a standard specification. As domestic demand in Vietnam is still small compared to total production, it would seem likely that most tenders (physical deliveries against futures contracts that are not offset) would end up with exporters. However, except for truly unusual circumstances, it seems unlikely major exporters would take delivery of exchange-graded coffee to fill export contracts. Not only do such contracts have their own quality stipulations, but increasingly final buyers also require traceability back to the producer under whatever sustainability standard that they subscribe to. This suggests that general interest in taking physical delivery could remain limited to domestic roasters and internal traders, which again emphasizes the need for some form of linkage with the London futures market; otherwise there will be a risk of domestic coffee futures becoming disconnected from the physical market.³⁹

3. The requirements for establishing a sustainable and liquid derivatives market include⁴⁰:

Purpose. The primary purpose of derivative contracts is the ability they provide to participants in the commodity value chain to mitigate price risk on both the sell and buy sides on an economic basis. It is imperative that the establishment and operation of a futures market is fundamentally based on this objective. It is also important that the aim of a futures market is not only understood but also shared by all participants in the industry, particularly by policymakers.

Policy. A supportive policy environment would include a national regulator to oversee a smooth-functioning market and a commodity policy that is conducive to the operation of the free market without interference from government or its agencies in the market mechanisms that influence the price and trade flow of the products. The rules and directives of the market operator together with those of the central clearing house must be clear, concise, and consistently applied across all market operations.

³⁸ Experience with, for example, gold futures trading in 2008 suggests there is no shortage of purely speculative interest in the Vietnamese economy, but whether coffee would attract the same interest of course remains to be seen.

³⁹ For the 2013 crop year the ICO estimated total Vietnamese production at 27.5 million 60 kilo- bags and domestic consumption of about 1.5 million bags. Major domestic roasters mostly procure their own coffee directly from farmers and/or collectors/traders.

⁴⁰ Requirements derived from: "Guidebook on African Commodity and Derivative Exchanges" from the African Development Bank; and "The Coffee Exporter's Guide" (International Trade Center)

Participation. Active participation in the futures market by both buyers and sellers not only delivers liquidity and cost efficiency, but also builds integrity in the market. Participation should not be forced by legislation, although incentives could be encourage activity. However, participation should be the natural result of the value-add that the market offers the participants.

A functioning futures market also requires the participation of speculators who are prepared to take on the risk of others in the hope of earning a return. Speculation is a necessary part of futures markets, as it allows hedgers to enter and exit the market quickly and easily when required.

Product. The product specifications of the contracts should be based on and reflect the physical spot product flow. Although the volume of trade flow is certainly an important factor in the success and liquidity of a derivative market, it is essential to have a well-designed contract that closely reflects physical trade and that facilitates well correlated hedging.

Conclusion. To date, no exchange in Vietnam has fulfilled all of the necessary prerequisites for establishing a sustainable and liquid derivatives market, hampering trade in domestic coffee futures. However, given the size of Vietnam's production and the number of participants in its coffee sector, it seems likely some form of domestic Robusta futures trading could attract sufficient interest, provided the rules encourage maximum access, offer protection for international participants/investors, and the physical delivery process is both functional and dependable. In India, production is too small and fragmented (between Arabica and Robusta) to generate the necessary interest and liquidity, even though existing infrastructure and regulation offer undoubted potential for a domestic coffee futures contract.

Case Study 5: Implementing Price Risk Management in the Rwandan Market Place

Issues

The goal was to protect producer organizations or cooperatives that operate coffee wet mills against potential loss or default due to major price moves, and create access to hedging opportunities.

Response

Technoserve, an international nonprofit organization, works with exporters buying from producer cooperatives that own coffee wet mill stations, providing services that help reduce or avoid the losses and defaults that can arise from sharp movements in both local and global coffee prices. The scheme is innovative in its use of cellphone technology to track the daily volume of coffee cherry purchases, the volume of coffee parchment yielded by the coffee washing process, coffee stock movements, and wet mill station operating expense data. This data keeps exporters informed of how much coffee is being held at the stations they buy from, and allows them to use this volume data on the futures market to lock in a price. The program was initiated in 2010 and by 2012, approximately 1,000 MT had been hedged on the New York futures market.⁴¹

Background

Rwanda's coffee sector has similarities to many other coffee producing countries. Farmer associations and cooperatives buy coffee cherry from smallholder coffee farmers, process it at their wet mill station, and subsequently sell that coffee to exporters. The exporters then mill, market, and ship green coffee to buyers across the globe. Many exporters are subsidiaries of global trading houses, with some domestic exporters active as well. When purchasing coffee, exporters and buyers reference the international market price when determining their offer price.

As with any other market, a challenge for the Rwandan coffee market is that sharp price movements can occur in relatively short periods of time. Contrast this with the coffee harvesting and production process, in which there is typically a lag of at least 2-3 months between harvest of coffee cherry and sale due to the time required to wet-process and dry-process green coffee. As a result, coffee harvested when the market is strong could be sold at a point when the market has collapsed, adversely impacting the position of cooperatives and their member farmers. As an example, after a significant period of rising prices in 2010, the international price of coffee started to fall dramatically in 2011. Cooperatives in Rwanda suddenly found their profits wiped out, with some at risk of making losses. The risk of default became quite real and answers had to be found to avoid similar occurrences in future. To avoid such exposure to price fluctuations, cooperatives could consider agreeing a price with a buyer for an entire season (i.e. forward selling), allowing them to know exactly what price to expect once their coffee is harvested and processed. However, despite the benefit of price stability, such agreements (informal or contractually bound) are also exposed to their own risks. In particular, should prices fall during the season, a buyer might try to renegotiate a contract to obtain more favorable terms. Conversely, should prices rise, farmers might not sell their coffee cherry to the cooperative, choosing instead to sell to a competitor paying a higher price.

⁴¹ Rwanda produces Arabica, a small percentage of which is processed in modern wet mill stations. The 1,000 MT that was hedged represented about 25% of the total 2012 wet mill station output of some 4,000 MT. The bulk of Rwandan coffee output is processed using conventional means.

Hedging as a Solution

Price risk is an issue for all actors operating within an agricultural commodity supply chain. Commodity exchanges or futures markets provide access to futures contracts that can be used to manage and protect against price risk. The coffee futures contract traded on the New York exchange represents the global market for Arabica coffee. This market allows coffee sector firms to both buy and sell coffee for a future date, protecting themselves against price movements caused by their position in the physical coffee market⁴². However protecting one's position against price risk can be both time consuming and costly, requiring in-depth expertise of the global markets and these financial products, known as derivatives.

For producer organizations and cooperatives, accessing the futures market is a challenge logistically (distance from market), financially (the need to have sufficient funds to cover hedges and meet margin calls), and in terms of complexity (the risk of increasing rather than reducing risk if a hedging strategy is poorly implemented and managed). As such, the vast majority of trading on the exchanges is by coffee exporters and buyers rather than by producer organizations. Such enterprises have the in-house skills and resources to effectively utilize these markets. With hedging nevertheless representing the best approach against price volatility, the question remained: how could produce organizations benefit from such strategies?

Providing Price Risk Management to Producer Cooperatives

As described above, the cooperatives in Rwanda had been struggling with the adverse effects of volatile prices. They neither had the expertise, the financial resources, nor the access to markets to enable them to directly manage their exposure to such price volatility. By working with Technoserve (which had helped to establish relationships between these producer cooperatives and coffee exporter companies), producer organizations were able to benefit from a hedging strategy implemented by coffee exporter companies. In Rwanda, in addition to milling and marketing services, coffee exporters also provide working capital financing to the producer organizations. Working at first with one local exporter, Technoserve began a program to better enable that exporter to manage the price risk of coffee purchases by utilizing the coffee futures market.

The mechanism included an exporter paying a cooperative a price determined by the current international coffee market at the time the purchase was negotiated. The exporter would, in turn, hedge the volume of coffee it purchased through a sale on the futures market, therefore locking in its own price and justifying the price agreed with and paid to the cooperative. As such, all parties in the transaction would no longer be exposed to price fluctuations, minimizing future default risk.

In order to execute on such a strategy, the exporter required accurate, daily coffee volume information regarding daily cherry purchases at the cooperative level as well as how much green coffee that cherry could be expected to yield. By knowing how much coffee the cooperatives had purchased daily, the exporter could use pooled information from its member cooperatives to hedge its exposure and reduce price volatility risks.

Challenges of Hedging via an Exporter Service Provider

This approach is not without its own challenges. Specifically, exporters provide marketing services to many farm cooperatives at once, require accurate, daily coffee cherry purchase volume reports from

⁴² The physical market is where the actual green coffee changes hands.

each of these rural businesses in order to hedge. Additionally, exporters provide credit services to many cooperatives and need to oversee these loans. The most effective way to do this is to monitor the farm-gate prices paid daily by cooperatives to farmers for the cherry they deliver to the wet mill stations and to ensure that these prices are in line with what the international market would justify. With an accurate monitoring tool, exporters can ensure cooperatives do not overpay for coffee cherry, thereby risking a loss at the time of sale and defaulting on loans. If exporters were geographically near to their member cooperatives, they could more easily monitor these businesses closely; however most wet mill stations are rural, located far from where the exporters are based. As such, a more transparent inventory management system was needed to allow exporters to obtain accurate pricing and stock volume information from rural wet mill stations in order to execute on their hedging strategy, as well as for their loan monitoring purposes.

Traditionally, cooperatives have used paper-based records to monitor volume and operating expense information. But paper-based records are difficult to share and easy to falsify, causing delays in information dissemination and difficulties in monitoring for fraud, theft, or poor management.

A More Transparent Inventory Management System Solution

Technoserve worked closely with Rwandan exporters and cooperatives to find a solution to these issues. As a result, an SMS bookkeeping tool was developed, linking simple cellphone text message technology to a sophisticated cloud-based platform. The move to SMS bookkeeping enabled daily data collection at wet mill stations that could then be shared real-time with exporters, enabling them to use this volume data to hedge coffee at appropriate scale and times and monitor the risk associated with lending working capital to these cooperatives.

The benefits of using cellphones and SMS technology are widely recognized: cellphone usage is extremely widespread in Rwanda, including among wet mill station accountants. Taking advantage of existing technology removed the need for expensive or complicated hardware (such as computers). Additionally, these phones are relatively simple to use, sparing the need for expensive training. Finally, data sent via SMS is both inexpensive and fast. SMS data can arrive almost instantly rather than be delayed by conventional postage. In short, this program utilizes existing, readily available, and easy-to-use technology enabling speedy adoption, rapid expansion and reduced user-error.

How the System Works

SMS bookkeeping requires wet mill station accountants to send daily and weekly messages that are recorded on an online platform, accessible to affiliated lenders and export companies. The daily message reports the kilos of cherry purchased, the cash/credit spent on cherry and the cash advanced to satellite buying sites. The weekly cash message contains opening cash balances, working capital received, and operating expenses at each cost center. A weekly stock message includes data on parchment moved to storage from the drying beds, and the parchment shipped to the dry mill. The cloud-based system collates this information from all wet mill stations, allowing an exporter to view its entire portfolio of wet mill stations at once.

With this information, an exporter at any point can know exactly what the stock position of each wet mill station is; where coffee sits in the chain; and the pricing and cash position of each wet mill station, providing them with sufficient information to ensure that funds are being spent appropriately and to know when they should hedge the exposure. The system promotes financial transparency but also protects private information. Producer organizations, exporters, and other related parties agree on the data that will be viewable to each party at the beginning of the beginning of the season. The system also

can be programmed to send performance reports to cooperative leaders and farmers directly, via SMS, thereby promoting financial transparency within producer associations.

Improving Access to Finance

The program and the inventory management system enabled cooperatives and their smallholder farmer members to benefit from a sophisticated hedging strategy, thereby avoiding price risk and related losses. Exporters, in their role as credit providers, are able to underwrite greater amounts of working capital to the producer organizations, as well as disburse them more timely and efficiently, thanks to the availability of real-time information and the resulting improvement in the performance of producer organizations. This has caused an increase in financing available to producer cooperatives at a time when many businesses and banks continue to be hesitant to extend loans to small, rural, agriculture-based borrowers. At the end of 2012, SMS bookkeeping had been implemented at more than 50 of Rwanda's 215 cooperatives. Beginning with the next coffee season (2013), TechnoServe will begin implementing this approach in Tanzania and Ethiopia.

Case Study 6: Minimizing Price Risk through Variable Sales Using Call Options⁴³

Cooperatives that sell coffee forward on a fixed price basis run the risk that subsequent price rises will cause their members to default and side-sell instead. Selling forward on a price-to-be-fixed (PTBF) basis and fixing the sales price at the time coffee is bought excludes most (if not all) price risk, as the two transactions (buying green coffee and fixing the PTBF sale) are literally back-to-back. In both instances, however, buying a call option ensures a cooperative can still benefit from subsequent price rises should they occur; the cost being an integral part of managing price risk. The choice as to whether to buy options is therefore a strategic decision.

Background – Price volatility complicates the timing of marketing decisions for the entire supply chain, particularly for managers of coffee cooperatives who take sales and pricing decisions on behalf of their members. If prices rise subsequent to sale, then the members may refuse to supply (default); conversely, if prices fall subsequent to buying coffee, then a cooperative will lose money. Taking sales decisions in this environment is not only difficult but can also be quite hazardous. Even where a guaranteed floor price, such as provided by the Fairtrade model, is in place, volatility still impacts on the decision-making process, as not all of a cooperative’s production is necessarily traded under Fairtrade conditions. Realizing that poor decision-making processes were detracting from an efficient and sustainable supply chain, in 2009 the Portland, USA-based firm Sustainable Harvest Specialty Importers

Harvest	Start	End	Variation
2011/12	290	186	-/- 35.8%
2012/13	165	136	-/- 17.5%
2013/14	115	185	+ 60.8%

Table 5.2 – Seasonal Price Volatility

created an extended program to improve financial literacy and market insight and to promote price risk management. Today, 41 cooperatives have joined up, including 27 in Peru and 14 across Central America (Costa Rica, Guatemala, Honduras, Mexico, and Nicaragua).⁴⁴ The need for such an approach has again been highlighted by the extreme volatility of the New York C Contract during the last three harvest seasons in Latin and Central America, as shown in Table 5.2.

Financial literacy, audited accounts, and an ability to demonstrate value-added are all prerequisites for any business case for all types of commercial enterprise in all types of industries and sectors.⁴⁵ In terms of accessing finance, having confirmed sales on the books to pre-approved buyers makes it easier to obtain seasonal funding to finance coffee purchases. All 41 cooperatives taking part in the Sustainable Harvest program had previously demonstrated their reliability as suppliers, both in terms of coffee quality and respect for contract execution, but all had difficulty in coping with the complexities of taking pricing decisions, including how to manage PTBF sales.⁴⁶

⁴³ With thanks to Sustainable Harvest Coffee Importers, Portland USA

⁴⁴Partly funded by grants from USAID and other donors. Total cost circa US\$1,000 per participating cooperative who also make a small contributions themselves to ensure solid buy-in.

⁴⁵ Without financial literacy, a cooperative may not know its true costs (and cannot present a good business case to potential lenders), whereas a lack of market insight may result in blind speculation or indecision. While trading back-to-back (buy and sell simultaneously) sounds simple in terms of risk avoidance, in reality this does not really make the pricing decision any easier.

⁴⁶ In terms of supply and demand producers need to confirm sales for their production and roasters need to fill their supply line but neither may necessarily wish to set the price at the same time as they make those arrangements. Selling/buying green coffee at a defined differential to the futures market (called Price To Be Fixed

In addition to promoting broad financial literacy and financial discipline, the Sustainable Harvest program consists of ongoing (and annual refresher) training encompassing the functioning of markets, market analysis, the role of futures, using put and call options, and related subjects such as daily position analysis. Initially, a total of four training seminars were held. Participating cooperatives subscribed to independent real-time price information through an account established by Sustainable Harvest, and were charged a minimal fee.

To understand the nature of price risk facing those in the coffee sector, it is helpful to review the two sales methods it employs:

- **Outright sale:** In addition to all usual terms and conditions, the contract immediately stipulates the final price.
- **Sale PTBF:** Seller and buyer agree quality, quantity, delivery, the differential and against which futures position the sale is to be fixed. The sale is 'sellers call', in that the seller calls for the fix (within the time period and in the manner agreed). The seller is not involved in any futures transactions but simply calls for the price to be fixed using the method laid down in the contract.⁴⁷

The pricing decision is made immediately in the case of the outright option, and is postponed under PTBF. Accordingly, cooperatives need to have clear internal guidelines that govern the fixing of PTBF contracts. PTBF contracts can also be made under Fairtrade conditions, in which case the seller will still receive the guaranteed Fairtrade floor price if the market falls and the contract remains open.

The Problem – When physical coffee is received, a cooperative should either sell it outright or fix an outstanding PTBF contract; if it does neither, it is engaging in speculation. However, decision-making is complicated by the prospect that the seller can forego potential problems if the market rises subsequent to selling or fixing a price. In the case of pre-season forward sales at outright or fixed prices, such subsequent price rises may even lead to members defaulting by refusing to deliver coffee and side-selling it instead, knowing their cooperative cannot match the spot market price at the time the member's coffee is ready. When prices are near the guaranteed Fairtrade floor price, some cooperatives may decide not to fix, as they are covered as long as the contracts in question are Fairtrade-based. But for many cooperatives Fairtrade sales only account for part of their total turnover.

The Answer: Variable Sales Using Price Insurance. Participating cooperatives can purchase call options (the right to buy coffee futures forward at a set price) at the same time they sell physical coffee outright or fix an existing PTBF contract, utilizing a Sustainable Harvest-sponsored account. This combination of fixed price and call option is called a variable sale, as the net result can still vary even after the sales price has been fixed; if for example the futures market rises, so will the value of the call option. On expiry, the option will then be cashed in and the profit, minus the option cost, will accrue to the cooperative. Should the market fall, then the option is simply allowed to expire and the cost (the

– PTBF) leaves the final price decision until later, yet accommodates these conflicting interests. At the same time outright or price risk is changed into differential or basis risk. Basis risk is usually much lower than price risk. Nevertheless, also such sales still require a pricing decisions in that someone has to decide when to 'fix' the futures price that, together with the agreed differential, will constitute the final sales price. In the mainstream coffee trade the 'fixing' of PTBF is often done through the buying and selling of futures contracts, something that may producers may find complicated but this is not the case under the Sustainable Harvest approach.

⁴⁷ With the Sustainable Harvest system the cooperatives need not concern themselves with futures transactions.

‘insurance premium’ that was paid to benefit from a possible price rise after sale) will be drawn from the original sales transaction.⁴⁸

While the notion of buying protection against price rises may seem strange to some, the validity of this approach for cooperatives or other types of farmer organizations who market coffee on behalf of their members has once again been amply confirmed by the price movements in the 2013/14 season. Table 5.3 shows the actual outcome for a cooperative in Nicaragua that purchased call options during the 2013/14 season.⁴⁹

Contract issuance	Shipment	Fixed price	Cost Call option	Liquidation date	Weighth lb	Value recovered / lb
November	March	2.05	4,481.25	2/4/2014	42,600.00	0.11
November	February	2.05	7,500.00	2/18/2014	42,600.00	0.18
December	February	1.75	5,043.75	2/5/2014	42,600.00	0.12
December	February	1.75	5,043.75	2/5/2014	42,600.00	0.12
December	March	1.75	4,031.25	2/6/2014	42,600.00	0.09
December	March	1.75	4,031.25	2/6/2014	42,600.00	0.09
December	March	1.75	4,968.75	2/6/2014	42,600.00	0.12
December	April	1.75	7,293.75	2/14/2014	42,600.00	0.17
December	April	1.75	7,293.75	2/14/2014	42,600.00	0.17
December	April	1.75	7,293.75	2/14/2014	42,600.00	0.17
December	May	1.75	27,937.50	3/7/2014	42,600.00	0.66
December	May	1.75	27,937.50	3/7/2014	42,600.00	0.66
December	February	1.75	5,043.75	2/5/2014	42,600.00	0.12
					Average	0.21

Table 5.3 – Outcome from call options utilized by Nicaraguan cooperative 2013/14 season.

Outcome. The cost of call options was subsidized by 50% in Years 1 and 2 for all participants, but some now pay the entire cost alone. There are also instances of buyers paying the entire cost. The average cost of call options purchased to date has been US\$1,317 each. The proportion of sales that result in the purchase of call options varies considerably, depending on market conditions. Generally, most interest arises at the beginning and end of the season when the price outlook may be less clear or when fears of frost in Brazil come into play. When prices are very low, as seen in 2013, Fairtrade accredited cooperatives tend to rely on the guaranteed minimum price, but this is not always possible if their total volume exceeds their Fairtrade sales opportunities.

⁴⁸ Options can be traded daily, meaning the buyers alone decide whether or not to hold them until expiry or to sell them earlier. The cost of options varies and individual cooperatives decide whether they consider the premium worthwhile. Clearly calls are cheaper in a falling market. Cooperatives seeking protection against falling markets can purchase put options (the right to sell coffee futures forward at a set price), but this is not part of the Sustainable Harvest program, as it does not relate to the import of physical coffee.

⁴⁹ Exercising options: the holders monitor both futures and the option value through the Sustainable Harvest sponsored account. Options showing profit can be exercised through direct orders to the broker; by giving a “good-till-called” order (the broker sells when the stated value is reached); or by stop-loss orders (the broker sells automatically if the value of a profitable option falls to a certain level).

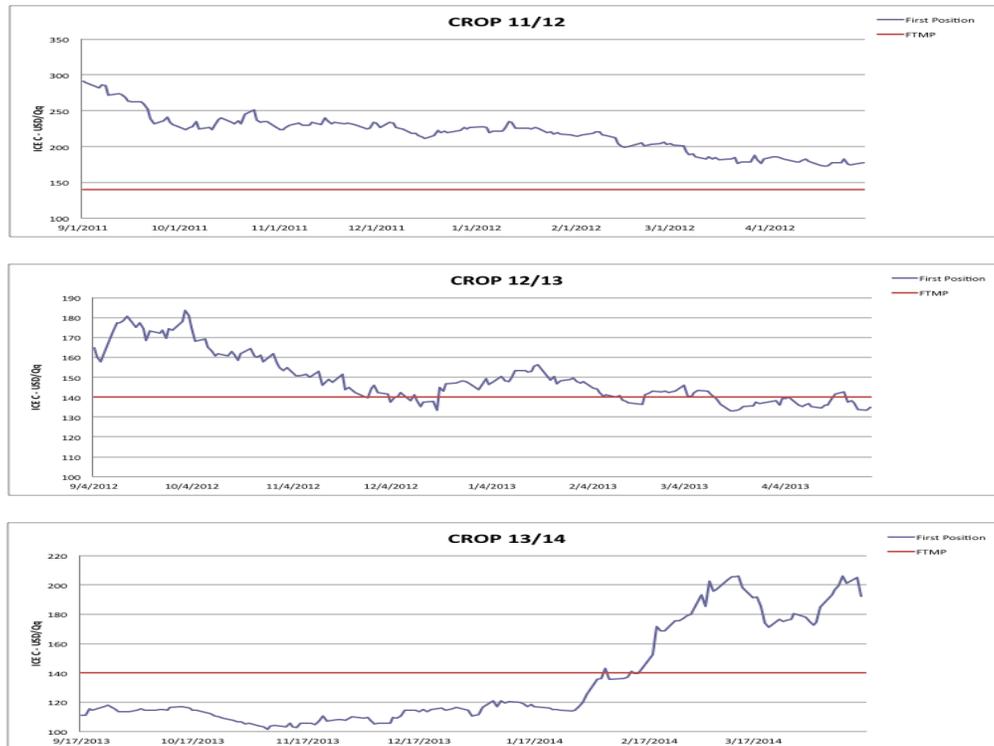


Figure 5.4 – Three Seasons and the Relationship between Price and Fairtrade Minimum Price

Given the uncertainty surrounding the availability of Brazilian coffee mid-2014, most of the participating cooperatives intended to market their 2014 harvest using PTBF contracts and to buy call options when fixing. Fixing when buying coffee at market price excludes most if not all price risk, as the transactions are literally back-to-back. Buying the call option ensures they can still benefit from subsequent price rises should these occur, the cost being an integral part of their price risk management strategy.

Today participating cooperatives know their cost price. They understand market behavior and mechanisms better, their decision-making processes have been formalized, and they have learned how to make use of market rallies to transact both physical coffee and options. They now use both fixed-price and PTBF contracts and do not necessarily fix entire positions all at once but judge market behavior. Improved monitoring, trading, and risk management has provided some of them not only with more but also with cheaper finance as lenders understand better how this system functions and the assurances it provides. On average, the result for PTBF contracts combined with call options has been better because the cooperatives fixed the price as soon as they had the physical coffee, knowing the call option gave them a stake in any subsequent market advance. Any delay in price fixing might sometimes result in better prices but naturally can also result in a much lower price.

The notion of what could be called “variable sales” is gaining acceptance, mostly in Peru where the Sustainable Harvest program was first introduced. Call options were bought by 20 cooperatives in all. This is notable because many lenders still believe that fixed price contracts are the best and safest option and so insist on them. This might be safer for them but obviously not necessarily for the

borrower. Variable sales therefore present an acceptable compromise that lenders should consider and, where required, they could assist with funding of the cost of call options.⁵⁰

Lessons Learned

Major lessons of the Sustainable Harvest program is the importance of having insights on both sides of the relationship (producer and roaster) and of being able to provide real-life information to cooperatives and, increasingly also to lenders.

The program demonstrates that once cooperatives begin to understand how the system works, they realize its advantages and are ready to pay the costs. Initially, however, costs need to be subsidized, requiring suitable promotion of the program's advantages to those who might provide the subsidies. Having said this, it needs also to be recognized that even with detailed education of cooperatives, in 2013 a number of cooperatives with prior exposure to the program did not wish to invest in call options. The prevailing view was that the market would remain depressed and that the cost of this insurance only increased the hardships imposed by an already low sales price. Ultimately, the market recovered and some cooperatives suffered extensive losses in that subsequently they had to pay their members the higher ruling price to be able to meet their contracts, having sold or fixed at much lower prices previously.

While the cost of options varies and is influenced by the duration, the strike price, and the general market view. It is also clear however that options are more affordable for producers of relatively high-priced coffees and the variable sales approach may not be as attractive or affordable for those producing lower-priced qualities (demonstrating once again there are no one-size-fits-all solutions). And as with all aspects of marketing, managing the variable approach requires a level of sophistication that is absent in many cooperatives and other types of farmer organizations. It takes time to understand the potential value of price risk management generally, and the variable approach in particular. Training programs should therefore be paced accordingly (extending even over a number of years) and need to be updated with real-life examples and situations encountered in the most recent season to ensure the programs transfer real hands-on knowledge.

The program also provides good insight into the question of why a buyer might consider subsidizing or sharing the cost of call options. The answer is that a default (coffee bought is not shipped) usually causes major disruption to the buyers' supply line. In the case of high-quality, such missing coffee cannot be replaced as the buyer likely has purchased (and may have sold on) a specific type of coffee from a particular supplier; details that are often key marketing characteristics. Much of this business is done on a forward basis, i.e. ahead of the actual harvest. Therefore, the motivation for buyers in this approach is to help ensure that the members will in fact supply the specific coffee that the cooperative sold forward.

A final feature of the program to consider is that being linked to a broker account has made the participating cooperatives more familiar with market behavior, yet the Sustainable Harvest system allows them to ask the advice of the importer and, most importantly, there is no need to directly involve themselves in futures trading.

⁵⁰ Of course, lenders should also appreciate the role put options can play when it comes to the funding of unsold coffee stocks.

Case Study 7: The 2012 Latin American Coffee Rust Outbreak: ‘Black Swan’ or ‘New Normal’?⁵¹

Coffee Leaf Rust (CLR, *Hemileia vastatrix*) is a serious fungal disease of Arabica coffee, which famously destroyed the Ceylon (Sri Lanka) coffee industry in the 19th century.

The disease reached Latin America in the 1970s, becoming ubiquitous by the late 1980s. Despite sporadic flares and outbreaks, the disease never quite lived up to its earlier notoriety and many farmers controlled it sufficiently with either routine calendar sprays or occasional ‘just-in-time’ sprays.

This situation now seems to have changed. Colombia suffered a serious outbreak in 2009/10, which coincided with a severe and enduring La Niña climate event. And whereas previously the rust was never problematic at more than 1,600 m above sea level, these high-quality Arabica zones now came under attack.

The 2012 outbreak appeared to be a similar but much more widespread event, ranging from Mexico in the north to Peru in the south, with increased attacks also reported in the Dominican Republic and Jamaica. The wide extent and severity of the outbreaks caught almost everyone by surprise and it seems now certain that the 2012 outbreak is the most severe since the fungus was first discovered in Latin America in 1970 and possibly the worst since the notorious Sri Lankan event.

⁵²When the outbreak was developing, some observers felt that the problem was somewhat exaggerated, but the most recent evidence confirms that it has indeed been a calamity for many of the region’s coffee farmers. The following study reviews evidence of what happened, why, and what might be done about it.

What happened?

In the latter part of 2012 and the first quarter of 2013, rust outbreaks were reported from 10 Caribbean and Latin American countries: Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, and Peru. Later in 2013, Ecuador also declared an emergency, bringing the total to 11 countries.

From United States Department of Agriculture Global Agricultural Information Network (USDA GAIN) reports published in May and June 2014⁵³, it seems that original estimates for 2012/13 production losses were somewhat overestimated for Mexico and El Salvador. However, all countries suffered declines in the crop year

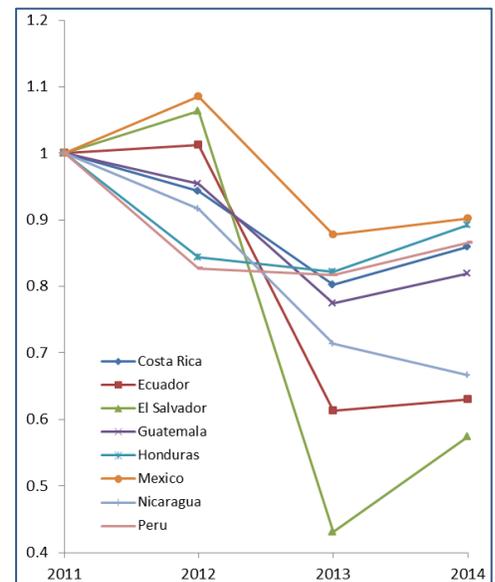


Figure 5.5 – Proportional Production Changes by Country

⁵¹ With thanks to P S Baker, CABI

⁵² Graph: Proportional production changes of the eight largest countries that reported rust outbreaks. Data from GAIN USDA reports; figures for year 2014/15 are based on estimates as of June 2014.

⁵³ E.g.

http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Coffee%20Annual_San%20Salvador_El%20Salvador_5-7-2014.pdf

2013/14 and estimates for 2014/15 suggest that production will still not be back to 2011/12 levels (Fig. 5.5). To date, production from these countries has declined by over 10 million sacks since the 2011/12 season, although it is not possible to claim that all losses are due to rust (other factors including drought may be involved). In the cases of Honduras and Peru, the full effect of rust may be disguised by the strong growth in production there due to significant and ongoing area expansion.

El Salvador seems to have been the hardest-hit country, with a loss of more than half of its production in 2013/14; its lowest harvest in 80 years. Nicaragua too has suffered serious losses, which may deepen over 2014/15. With the expected El Niño event in the latter half of 2014, decreased rainfall and high temperature could further retard recuperation.

Thorough survey data at a sub-country level is mostly lacking; the most detailed mapping by Anacafé Guatemala reveals a complex pattern of CLR attack across the country that displays neither a random nor a highly aggregated distribution. Regional production data from Guatemala since 2010 shows large fluctuations, suggesting that the problem may have been building for some time.

Anecdotal accounts (personal observations, communications and press reports) indicate that the CLR attack affected a broad range of coffee growers; sun and shade coffee, organic, other certified and non-certified coffee, large and small farmers – all have been affected (with the possible exception of the resistant Catimor varieties). A comprehensive breakdown by altitude, location, farming system, tree age, etc. is currently lacking and this is making it difficult to establish causality.

Why did it happen?

Some facts about CLR epidemiology need to be understood: a temperature around 22°C, the presence of liquid water, and darkness all favor germination, although a lower temperature (13-16°C) apparently encourages growth of the spore tube that forces its way into the leaf. The condition of the coffee tree is also important; poor nutrition and a heavy fruit load increase the likelihood of heavy infection. When trees in sun and shade have equal fruit loads, shade can bring on heavier attacks, but this is confounded by the generally lower fruit loads that occur under shade through reduced flowering.⁵⁴

Despite this knowledge, even two years after the problem started, there is a lack of understanding as to why CLR became such a widespread problem in 2012. Attempts to explain what happened fall into two main camps: either it represents a virulent new strain, or this is the impact of unusual weather conditions influenced by climate change.

The virulent strain hypothesis: The possibility of a mutated strain of CLR as the cause of the Colombian epidemic was investigated in some detail by Cenicafé scientists in 2012⁵⁵. They carried out quite extensive studies involving comparisons between pre- and post-2008 spore samples, which included genetic marker analysis and seedling infection experiments on a range of varieties to measure virulence. They could find no significant differences and concluded that a new strain was not responsible.

It seems likely therefore that the same conclusion can be applied to the 2012 outbreak. Indeed it would seem improbable that a virulent strain could spontaneously appear over such a very large geographic area in the same year.

⁵⁴ Avelino J., Zelaya H., Merlo A., Pineda A., Ordon M., Savary S., (2006). The intensity of a coffee rust epidemic is dependent on production situations. *Ecological Modelling* 197: 431–447.

⁵⁵ Yomara Roza Y., Escobar, C., Gaitán A., Cristancho M., (2012). Aggressiveness and Genetic Diversity of *Hemileia vastatrix* During an Epidemic in Colombia. *J Phytopathol* 160:732–740

Furthermore, there are reports of other coffee diseases, notably ‘Ojo de Gallo’ (American Leaf Spot, *Mycena citricolor*) increasing in several countries. Cenicafé for instance has recorded unusually high levels of *M. citricolor* on unshaded coffee in Cesar and Cauca (Colombia)⁵⁶ and HR Neumann Stiftung technicians in Central America working on the coffee and climate initiative⁵⁷ recently rated the disease as second in importance only to CLR⁵⁸. It is therefore stretching credulity to believe that two diseases are mutating to higher virulence and instead an explanation that accounts for all such changes is desirable.

The climate hypothesis: Climate change as the cause of the CLR outbreaks has been widely discussed and it is a fact that the fungus now attacks at higher altitudes than a decade or more ago (up to 2,000 m reported in Colombia). Since a clear warming signal can be found in the meteorological data across the region, it is virtually certain that climate change has caused this new outbreak pattern.

However, this does not explain why 2012 was such a bad year, especially since it was not a particularly hot or wet year; in terms of the El Niño/La Niña oscillation, 2012 was more or less neutral. A problem for scientists is that meteorological data from the region is poor, especially considering its complex topography. Additionally, available survey data does not help to determine the extent to which the upsurge might be caused by the inexperience of farmers at higher altitudes as opposed to increased CLR aggressivity at lower altitudes. Although increased rain is often indicated as a cause of fungal outbreaks such as rust, data from both Costa Rica⁵⁹ and El Salvador⁶⁰ suggests that rainfall was lower and more intermittent in 2012. Possibly, therefore, an unusual combination of rainfall and temperature proved ideal for rust proliferation in some zones. However, we are still far from a full understanding of the events that triggered so many outbreaks.

There is also a third hypothesis – *the ecological collapse hypothesis*. This proposes that increases in pests and diseases are due to increasing intensification, especially the eradication of shade. However, the 2012 experience shows that shade and organic coffee farms were sometimes heavily attacked. For example, at the El Programa Cooperativo Regional para el Desarrollo Tecnológico y Modernización de la Caficultura (PROMECAFE) – World Coffee Research (WCR) rust meeting in April 2013 Anacafé’s Miguel Medina said: “I don’t know how organic coffee can have a future. There is nothing that works to control rust in the field and I am not seeing anyone in the market offering more to create additional incentives for organic farmers.”

Since the best data comes from Colombia, which has an extensive network of meteorological stations, the following scenario is offered, based on a description of events in Huila (Colombia) in 2010⁶¹:

1. A long ‘La Niña winter’ in 2008 and 2009 left coffee trees in poor condition because of reduced efficacy of fertilizer applications under prolonged rain and low light. But CLR levels were not excessive at this time because flowering (and hence fruit loading) were low.
2. In the first half of 2010 there was an intense summer period that induced heavy flowering, leading to expectations of a bumper crop.

⁵⁶ Rivillas C., Castro A.M. (2011) Ojo de Gallo o Gotero de Cafeto. Bol. Téc. 37, 25pp.

⁵⁷ <http://www.coffeeandclimate.org/Trifinio.html>

⁵⁸ Baker P.S. unpublished report for HRNS.

⁵⁹ The Costa Rican Coffee Institute (ICAFE)

⁶⁰ Fundación Salvadoreña para Investigaciones del Café (PROCAFE)

⁶¹ Federación Nacional de Cafeteros (2010). Prosperidad Cafetera, Informe de Comités Departamentales. LXXV Congreso Nacional de Cafeteros. Bogotá, Colombia.

3. Wet conditions returned in the second half of 2010, with prolonged rain and high minimum temperatures (caused by heavy cloud) that produced ideal conditions for CLR proliferation.
4. Already weak coffee trees, now struggling to cope with a heavy burden of growing berries, easily succumbed to CLR attacks, shedding much of the expected harvest.

The above scenario may not correspond to the 2012 event, but it is likely that a similar combination of factors led to conditions ideal for CLR. A major difficulty is that without knowing the specific events that caused the outbreak, it is impossible to assess how rare they were and therefore how likely their return might be.

What should have been done differently?

At the Guatemala rust summit in April 2013, a working group compiled the following list of shortcomings:

- Chronically insufficient economic resources to deal with the rust; most farmers make very modest profits and spraying is costly, so why do it if CLR has not been a problem?
- The problem was underestimated; some warning signs were there but were not acted upon
- Ineffective application techniques (poor droplet size, wrong frequency and timing of applications) due to lack of training
- Poor infrastructure; very bad roads after storms in 2010 leading to more difficult access to farms
- Conflicting advice: technologists promote rust resistant varieties, roasters prefer susceptible varieties

The same working group recommended the following to prioritize limited resources to deal with present situation and lower its impact in future years:

- Improve information collection: systematize, analyze, distribute, and share with producers to take corrective/preventative actions
- Develop diagnostics and monitoring for early warning
- Increase use of new technology e.g. cell phones and improve producers' networking capacities
- More information and research needed on:
 - Weather: temperature, amount of rain and rain patterns, relative humidity, solar light and shade, El Niño y La Niña
 - Levels of infection, incidence, and severity
 - New crop varieties and more testing and improvement of quality of Catimors;
 - More socioeconomic information about farmers
 - Monitor not only CLR but other diseases
 - Trials on farming systems: tree density changes and shade modification to increase resilience of coffee plantations
 - More studies on rust, its genetic variety and virulence
- Campaign to renovate plantations and promote better farming practices
- Carry out physical and chemical soil analysis and promote better soil use and conservation
- Create insurance programs
- Better-equipped extension services for knowledge and technology transfer

Widely-expressed opinions were that an attitude change is now required by all stakeholders to understand the implications of more extreme and more prevalent climatic conditions and to acknowledge the need to be more proactive.

Current responses

Efforts are underway to regenerate coffee production in Central America, most notably a collective effort led by USAID and partners totalling US\$23 million.⁶² Generally though, responses have been slow with nothing like the amount of money and effort expended in Colombia, where reportedly the government has spent over a billion US dollars on coffee renewal since 2010.⁶³

Field studies being carried out by the coffee and climate initiative in the Trifinio region of Central America report that, to date, farmers have received little or no government assistance. Data from project farms show that production has fallen, especially in 2013/14, whilst spending on agrochemicals has risen sharply (Fig. 5.6).

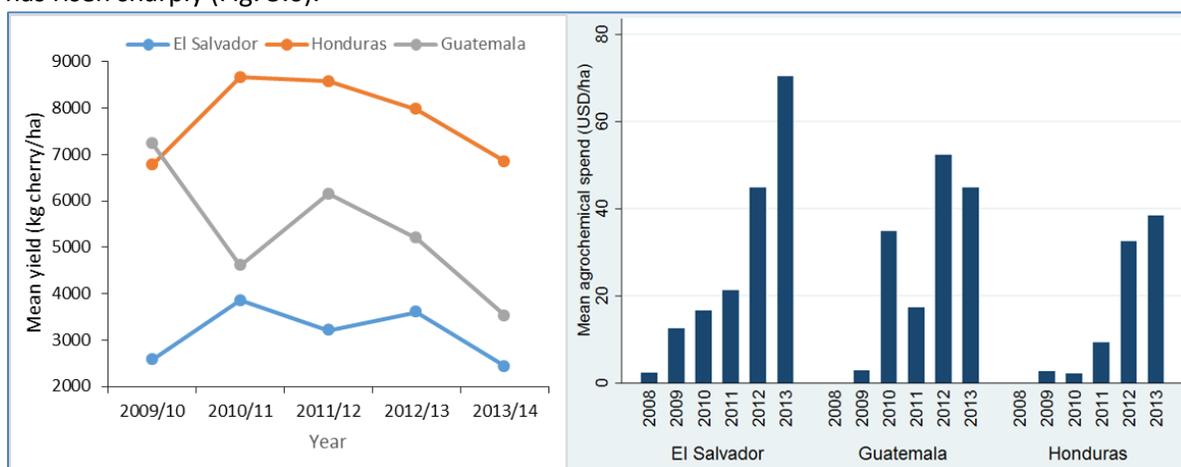


Figure 5.6 – Fieldbook data from coffee and climate initiative project farms in the Trifinio zone⁶⁴

Now in 2014, although the outbreak seems to have abated somewhat, it is by no means over. This implies that farmers wanting to retain coffee will have to either change variety or be prepared to proactively spend additional funds every year to prevent regular losses. The associated cost implications need to be quickly evaluated; more farmers are adopting high-yielding resistant varieties, but they tend to lack the funds to invest in the fertilizers required to fully benefit from them.

Although prices rose in February 2014 because of the Brazilian drought, it came after most farmers had already sold their crop. Prices are now falling again and it is far from clear under what conditions farmers can expect to make a profit. Should they borrow money to reinvest and intensify production as some agencies are urging, or should they diversify in the face of what seems to be increasing vagaries of both price and climate? This dilemma is currently the subject of close scrutiny by project staff.

Black swan or new normal?

A so-called black swan event is a rare occurrence, such as the global financial crisis of 2008 onwards. Was the 2012 CLR outbreak a similar peculiar event or a signal that underlying conditions have changed?

⁶² http://seattletimes.com/html/business/technology/2023841749_starbucksrustxml.html

⁶³ <http://www.marketwired.com/press-release/coffee-colombia-offers-millions-aid-help-countrys-coffee-plantations-adapt-climate-change-1754060.htm>

⁶⁴ Data from HRNS, analysis by E. Briggs

The fact that the 2012 event was presaged by the 2008-2010 experience in Colombia suggests that underlying conditions indeed may be changing and that it would be perilous to ignore them.

It is unclear the extent to which climate change may have contributed to this but there is convincing evidence that extreme weather events are now more common in Central America⁶⁵ (Fig. 5.6) and indeed also elsewhere, including events that favour one or more pests or diseases and disrupt a normal equilibrium.

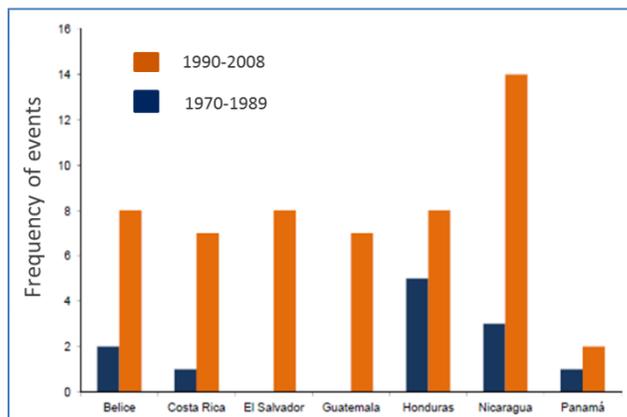


Figure 5.6 - Increase in tropical storms and hurricanes since 1990

As a result, farmers' risk levels have risen; it is becoming more difficult to farm in many localities because of changed weather patterns. It is especially risky for farmers of perennial crops, such as coffee, which require substantial investment with a long payback period. Hence, farmers' recent experiences of yield and quality losses, higher input costs, and little or no price compensation suggest that many lack a long-term sustainable strategy.

Conclusions

The gravity of the outbreak, together with the large degree of unpreparedness, points to a systemic failure – that is, a failure of anticipation, insight, and overall management by the coffee industry that underlies individual and institutional shortcomings.

This is surprising, given the extent to which the concept of sustainability has risen to prominence over the past 10 years. It is becoming clear that the shortcomings of this approach have been an over-concentration on micro-management of a large number of farm-level tasks and a relative failure to look at larger-scale material issues such as pests and diseases, water use, land use change, and overall economic farm performance.

This state of inadequacy is in turn a direct result of the history of coffee over the past generation, which has stressed market-driven measures to realize maximum value, whether through quality or some more symbolic attribute of sustainability. Unfortunately, the many NGO-driven initiatives to promote sustainable production have not been able to substitute for the long-term support of science and technology that has historically been provided by public institutions.

This in turn has led to a weakening of research and extension services, which are ill prepared for what is now most likely an era of accelerating change. The relative collapse in the field aspects of coffee science

⁶⁵ ECLAC (2012). La Economía del Cambio Climático en Centroamérica, Síntesis 2012. 114 pp.

can be seen from the decline in the number of CLR science publications relative to, say, those on the relationship between coffee and cancer (Fig. 5.6b); research on the medical effects of coffee consumption now greatly outweigh agronomic studies.

The coffee industry now needs to re-examine fundamental concepts about how it nurtures and protects the complex social-environmental system that supplies its raw material. Tacit and explicit assumptions of risk, stability, resilience, and sustainability need to be reviewed in the light of recent events.

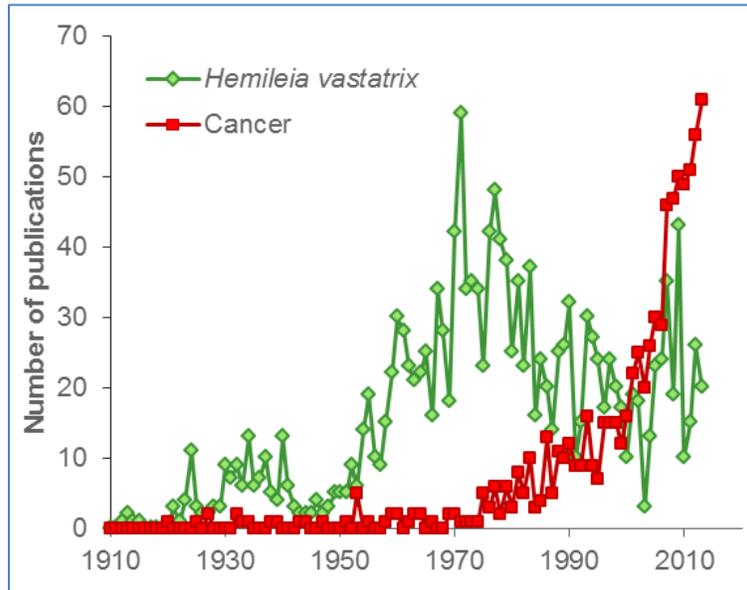


Figure 5.6b - The worried well: studies on how coffee affects consumers' cancer rates have trumped supply problems like rust⁶⁶

⁶⁶ CAB Abstracts

Case Study 8: Recent Experiences of Coffee Replanting Programs in Colombia⁶⁷

Overview

This case study reviews Colombia's efforts to modernize its coffee sector through replanting and technical innovation between 1998 and 2011. These efforts were largely successful but it should be recognized that this was largely due to a truly supportive or enabling sector environment. This comprised government, research institutions, strong grower organizations, and a concerted investment program funded by the National Federation of Coffee Producers and the government. Several lessons emerged from this episode: growers sometimes resist innovation and renewal as a result of risk-aversion, lack of knowledge, and/or the absence of the right incentives; multi-year program designs need constant review and adjustment, when necessary; and access to finance plays a major role in the success of such programs. The final conclusion is, unfortunately, that despite these efforts, prolonged periods of low prices, which greatly reduce farmer profitability, put this and similar undertakings elsewhere at risk.

1. Background. Until the mid-1970s, Colombia's annual coffee production exhibited a steady pattern, with average production estimated at 8.7 million 60 kg bags/year. Production started to increase during the second half of the 1970s following a modernization program launched by the Colombian Coffee Growers Federation (known by its Spanish language acronym, FNC)⁶⁸, favorable world market conditions, and technological innovations. These factors helped to lift productivity from an average of seven 60 kg bags per hectare in 1970 to 12-14 bags/ha in the 1980s. During the early 1990s, production increased significantly, reaching a peak of 16 million bags in 1992/93, but subsequently declined again to the levels seen in the 1980s. It remained at those levels (around 11.5/12 million bags) until 2007, when it fell sharply again (Figure 5.7). Government and industry pointed to a combination of contributing factors as causing this situation, including: declining productivity per hectare (estimated at only 8.48 bags/ha/year in 2011—Figure 5.8); slow adoption of technological innovation, particularly in terms of improved varieties; low levels of fertilizer use; aging producers and plantations; and the atomization of production (i.e. coffee production by a large number of growers utilizing relatively small plots).

⁶⁷ With thanks to Luz Diaz, World Bank

⁶⁸ The FNC was created in 1927 by the collective effort of the coffee producers. The FNC was to be financed through a tax on exports and was also granted the right to manage the tax funds through a grant agreement with the government. Since its creation, the FNC has been the major organization through which sector policy is coordinated and directed.

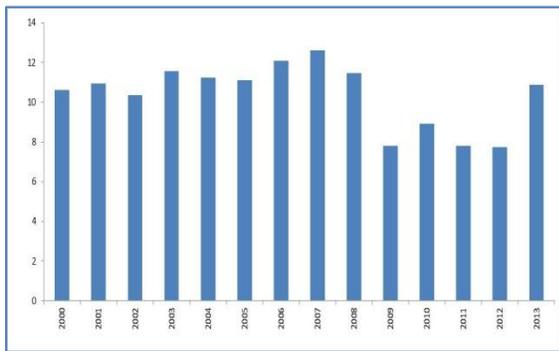


Figure 5.7 - Colombian Coffee Production (Million bags)

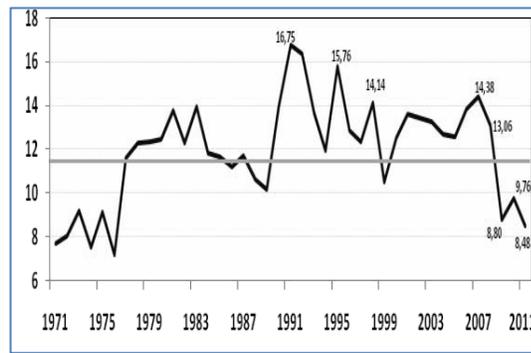


Figure 5.8 – Coffee Productivity (60kg bags/ha)

69

The decline in production occurred in spite of replanting programs put in place since the late 1990s, which resulted in the renewal of a total of 725,200 hectares during 1998 to 2011. A detailed description of the scope of these programs and of their achievements is provided later in this study, but in short their main objective was to improve the age and quality of the tree park, which was considered vital to lifting the competitiveness of the Colombian coffee sector. Two replanting programs implemented since 1998 fulfilled two different but related objectives. The main objective of the Competitiveness Program (CP), implemented during 1998-2011, was to maintain crop productivity in densely cultivated coffee growing areas. On the other hand, the Permanence, Sustainability, and Future (PSF) program, implemented since 2007/8, was designed to rejuvenate aging coffee plantations through new plantings and it specifically targeted small-scale producers.

2. The Coffee Competitiveness Program (CP): Maintaining the Productivity of Young Plantations.

During the 1990s and early 2000s, the world coffee industry underwent fundamental changes in both the demand and supply sides. On the supply side, the period was characterized by a dramatic increase in coffee planting that, according to some, would practically ensure structural long-term overproduction, particularly in countries producing unwashed Arabica and Robusta. In response, in the late 1990's, the FNC made the stabilization of production (at 11-12 million bags/year) one of the strategic pillars necessary to maintain a competitive coffee industry. By then, Colombia's coffee sector was relatively productive, with nearly two-thirds of production (62%) from plantations under modern production systems (high-input systems⁷⁰). However, the remaining 38% was grown under traditional low productivity systems. As the objective of the CP Program was to maintain the productivity of young plantations, plantation age and tree density became critical parameters of activity. For the Colombian varieties released by Cenicafe⁷¹, productivity increases are experienced at high plant/crop density levels

⁶⁹ Source: FNC

⁷⁰ These systems (usually called café tecnificado) use densities equal to or above 2500 trees. Tree age should be equal or less than nine years old for full sun systems and equal to or less than 12 years old for semi-shaded production systems.

⁷¹ The Centre of Coffee Research (CENICAFE) was established in 1937 by the FNC, as has since remained under the management of the FNC. The institution has been leading research efforts on varietal development, pest and disease control, and other critical aspects of coffee production. The research program on varietal development for Coffee Leaf Rust (CLR or roya, in Spanish) resistance started in the late 1960s; in 1982, the first CLR resistant variety was released known as variedad Colombia. The variedad Castillo, released in 2005, has resistance to CLR and also to other sanitary problems facing the crop.

(between 6,000 to 8,000 plants/ha—Figure 5.9), and by keeping the average age of plantations at around five years – Figure 5.10).⁷²

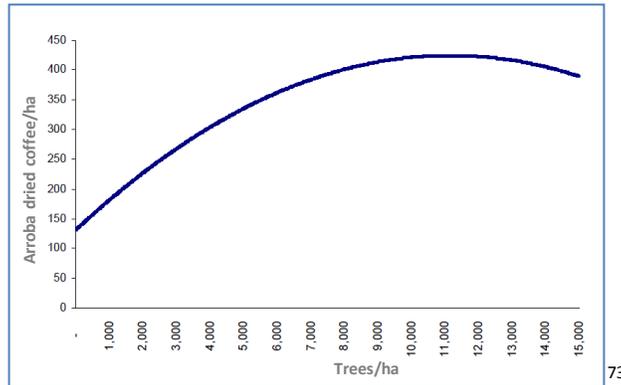


Figure 5.9 – Productivity as a function of Crop Density

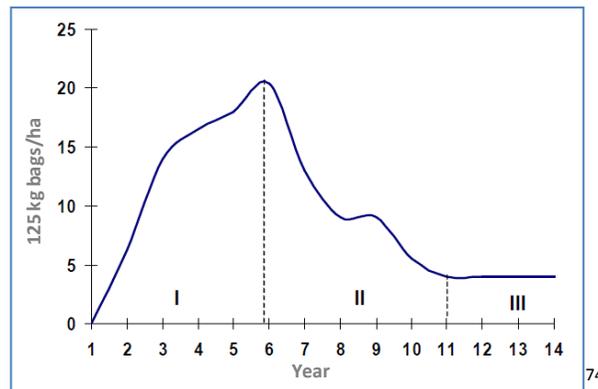


Figure 5.10 - Productivity as a Function of Plantation Age

The program targeted plantations more than five years old and located in optimal coffee production areas (high-input cropping systems). To participate, growers needed to commit to renewing at least 400 trees. For growers with less than five hectares, a maximum of one hectare could be renewed under the program; those with five hectares or more were allowed to renew 20% of their coffee area. Rejuvenation of the plantations could be achieved either by planting new trees using seedlings or by full stumping of existing trees; for new plantings the optimal densities had to be between 2,500-10,000 trees/ha.

Availability of plant nutrients is a critical factor in the successful establishment of new plantations, particularly where the stumping method is used, as the tree is left without leaves and must survive on nutrient reserves in the roots alone. Facilitating access to fertilizer was therefore the basis for the incentive granted to farmers under the CP program. In 2011, coffee growers received fertilizer to the

⁷² Recommended planting densities vary according to a set of factors, however, for high-input cropping systems at full sun exposure, average crop density is about 2,500 to 10,000 plants/ha with average replanting rates of five to nine years.

⁷³ Source: FNC

⁷⁴ Source: FNC

value of nine US cents for each renewed plant. Growers interested in participating in the program would discuss their plan for renewing plantations with FNC staff, at which time the scope of the replanting program would be determined through topographic plans, aerial photographs and/or exhaustive counting of plants. Under CP, the incentive (in the form of fertilizer) was provided to the grower once the FNC staff verified in the field that the old plantations had been replaced (either by planting new seedlings or by full stumping). Where the chosen rejuvenating method was new planting, the producer was responsible for producing the seedlings to be used.

However, cashflow problems are a major drawback to the successful implementation of replanting programs, particularly for those producers relying on coffee as their major source of income, as new trees will not yield for a period of up to two-three years, depending on the rejuvenating method used. The FNC therefore promoted multi-cropping (with beans and maize) as a way to support diversification and farmer income during the gestation period of the new plantations. This approach proved to be very successful.

Growers willing to multi-crop while renewing plantations received additional incentives for fertilizer purchases. These incentives also facilitated the coordination of support among different organizations, including access to quality seeds, extension services, and improved production technologies for those crops. Consequently, the programs resulted in significant gains for producers in terms of better maize and beans productivity, and income generation.

During the 13 years of implementation of the Competitiveness Program to 2011, 605,000 hectares of coffee were renewed, with total investments estimated at about COP372 billion (around US\$181 million). However, the initial goal was to renew about 70,000 hectares annually and while this was achieved in the early years, only around half the target was met between 2003 and 2006, possibly due to the then discouraging state of the coffee market. For the remaining years, the annual targets were revised downward but still without success.

In 2010, under the Coffee Prosperity Accord signed between the Colombian government and the FNC, a new target was set for the program at about 40,000 renewed hectares per year. In 2010, the government provided nearly COP20 billion (nearly US\$9.3 million) to support the program, yet, only about 25,000 hectares were renewed through the program in that year.

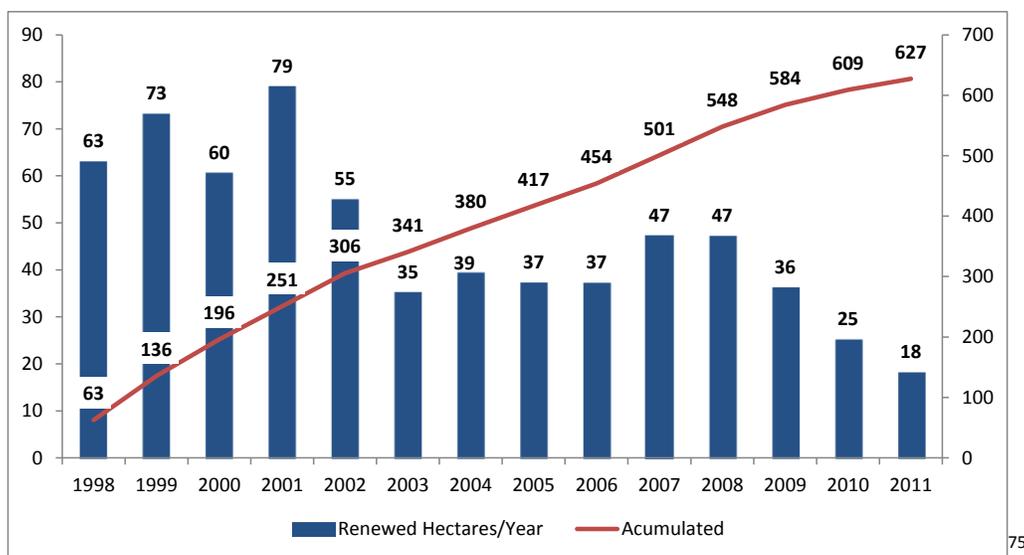


Figure 5.11 - Renewed Area Under the Competitiveness Program ('000 MT)

Although, for the most part, the overall objective of stabilizing production at 11–12 million bags per year was achieved, fewer gains were made in terms of maintaining a young and productive sector. In fact, by 2005/06, the landscape of the coffee Colombian sector had dramatically changed in that the percentage of coffee grown under low production/traditional systems had increased to 55 percent from 38%; the plantations were aging and becoming unproductive. In 2006, the average age of plantations was estimated at 13.9 years.

Many critics regarded the Competitiveness Program as targeting medium- and large-scale producers or those with alternative income-generating activities who, presumably, were able to rejuvenate plantations even in the absence of the program. The design of the program relied on meeting the fertilizer needs of the young plantations but, other than the multi-cropping systems, included few or no provisions to support producers during the tree gestation period, an omission that proved to be a significant impediment to the participation of small-scale producers. Yet, if substantial gains were to be achieved in the replanting program, the needs of the small-scale producers (representing nearly 95% of all producers) had to be better addressed. Accordingly, in 2007, the FNC launched a parallel replanting program named “Permanence, Sustainability, and Future” or PSF, to specifically target small-scale old or aging plantations (under both traditional and high-input systems)⁷⁶. Both replanting programs (CP and PSF) co-existed until 2011 but in 2012, the Competitiveness Program was phased-out (although specific credit lines were made available to middle- and large-scale producers to continue support for rejuvenation).

3. The Permanence, Sustainability, and Future (PSF) Program—Targeting the Needs of Small-scale Producers. The PSF program, launched in 2007, aims at improving income and reducing poverty among small producers. Leadership is provided by the FNC, but the program is implemented in coordination with the national agricultural financing fund, Fondo para el Financiamiento Agropecuario (FINAGRO), and with financial support from the government. Although initiated in 2007/08, PSF became a sector

⁷⁵ Source: FNC

⁷⁶ One of the criteria to be considered a small-scale producer is that at least two-thirds of income is generated by agriculture.

flagship program in 2009 with the signature of the “Coffee Prosperity Accord 2010-15” between the FNC and the government. Under the Accord, targets included the establishment of 200,000 new hectares annually to reach a million planted hectares in 2015, and the rejuvenation of 300,000 hectares during a five-year period, both through the CP and PSF programs.

The PSF program is designed to renovate, through new plantings, coffee areas cultivating aging coffee trees. In clear contrast to the Competitiveness Program, which used fertilizer purchases as incentives, the basic incentive in the PSF grants bank loans on favorable terms to small-scale coffee producers.

Loans combine different elements: i) public and private collateral funds pooling the credit risk (National Guarantee Funds: FNG and FOGACAFE⁷⁷); ii) an incentive known as Rural Capitalization Incentive, which covers 40% of the principal and is paid by the government; and iii) an additional incentive covering interest on the loan paid by FNC. Under the program, participating producers contribute repayment of 60% of the loan and the labor costs associated with renewing and maintaining their plantations. Loan duration is seven years, with a two-year grace period.⁷⁸ An illustration of the way the program worked in 2011 is presented below.

Loan COP for Replanting 1 ha.		Payments COP	
Size of the loan	6,000,000*	Producer (60%)	3,600,000
Interest to be paid	2,133,334	Government (40%)	2,400,000
Total	8,133,334	National Coffee Fund (FNC)--100% interest	2,133,334

Table 5.4 – Credit Lines and Programs of Incentives for Coffee Growers, 2011⁷⁹

* Approximately: US\$3,000 applying the average exchange rate in 2011.

The PSF was structured to temporarily compensate producers during the unproductive period associated with new plantings – the minimum/maximum qualifying area sizes were however adjusted during the program’s implementation. In the early years, small-scale producers with five hectares or less were allowed to renew a maximum of 1.5 hectares under the PSF; in 2011, the minimum area was 0.2

⁷⁷ National Guarantee Fund (FNG) is managed by FINAGRO. The National Coffee Guarantee Fund (FogaCafe) was established and is managed by the Federation of Coffee Producers (FNC).

⁷⁸ The period is associated with the tree productive cycle: two years without production, entering production in year three until year seven, when it is recommended to renew or stump the plantation.

The credit/loan combines two elements guarantees and incentives, as follows:

i) 100 % of Credit guarantees provided by two organizations: the National Guarantee Fund ((FNG) managed by FINAGRO (a public entity) and the National Coffee Guarantee Fund (FogaCafe), which was established and is managed by the Federation of Coffee Producers (FNC) (a semiprivate entity). I missed a full stop in the footnote to separate them, perhaps that is what is confusing.

ii) An incentive of 40% on the principal (ICR- provided by the government), as indicated in the table below.

iii) An additional incentive covering the interest (current terms) during the duration of the loan, provided by the FoNC (National Coffee Fund).

Size of the Loan	6,000,000	Producer (60%)	3,600,000
Interest to be Paid	2,133,334	Government (ICR – 40%)	2,400,000
Total	8,133,334	National Coffee Fund (FNC) – 100% interest	2,133,334

⁷⁹ Source. FNC, 2011

ha and the maximum 5 ha. Given tight FNC finances, however, the PSF in 2012 ceased covering loan interest, with responsibility for payment falling to the producer. Similarly, there were changes in the disbursement of the loans, with distributions provided in two payments instead of eight, with the second payment conditional upon verification that the plantation had in fact been rejuvenated through new plantings.

Since 2007/8, PSF had disbursed an estimated COP691billion (US\$361 million), of which about 40% were government grants (representing US\$145 million).⁸⁰ A total of 118,000 hectares were renewed and about 146,000 farmers benefited.

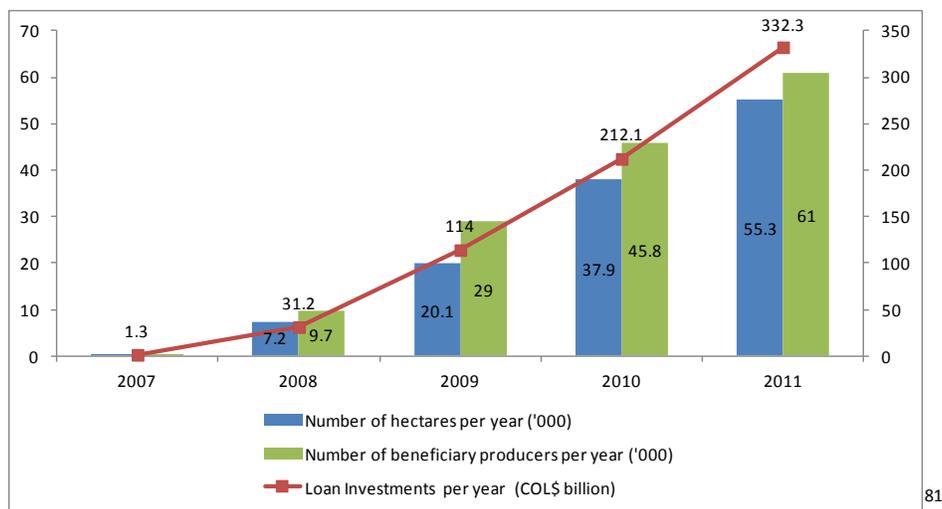


Figure 5.12 – PSF Main Achievements: Investments, Covered Area and Producer Beneficiaries

3. Pest and Disease Outbreaks and Their Impact on the Replanting Programs. A series of difficulties have plagued the coffee sector in recent years, particularly pest and disease infestations, including coffee borer and coffee leaf-rust (CLR or roya). The latter in particular harmed the productivity and income of thousands of producers during 2008-2010. The factors fostering the spread of this fungus (*hemileia vastatrix*) are diverse, including a combination of environmental factors, poor crop management, and susceptible varieties. Environmental factors have included high rainfall patterns resulting from the La Niña effect, together with reduced sunlight due to cloudy skies and a narrower range between maximum and minimum daily temperatures. In the Colombian central coffee-growing region—a main coffee region—annual precipitation exceeded 3,000mm during multiple years, presenting optimal conditions for leaf-rust development. Inadequate fertilizer application, evidenced by low fertilizer sales⁸², and deficient nutrient uptake in water-saturated soils has slowed shoot growth, thus preventing plant recovery.

Furthermore, the predominance of susceptible varieties in the national tree park also contributed to the severity of the outbreak. Although developing coffee varieties has been at the core of the research undertaken by the National Center for Coffee Research (Cenicafé) and led to the development of varieties showing resistance to leaf-rust, adoption by producers has been very slow. In 2006, half of the

⁸⁰ Government investments in PFS for the five-year period of the Coffee Prosperity Accord 2010-15 were estimated at COP540 billion (around US\$274.6 million when applying the average annual exchange rate in 2009), while the payments to be made by the FNC for loans interest were estimated at COP\$523 billion over during 12 years. The growers' contribution was estimated at about COP810 billion or more than US\$400 million.

⁸¹ Source: FNC

⁸² Some authors highlight low levels of fertilizer used due to high fertilizer costs resulting from high oil prices.

national area under coffee (51%) was planted with the *Caturra* variety, and 20% with *Tipica* (both varieties susceptible to leaf-rust) and only 29% had been planted with resistant varieties.

The outbreak triggered an emergency response from the government and FNC through the provision of inputs to reduce the impact on productive coffee trees between two and seven years of age and susceptible to the disease; nearly US\$22.5 million was invested in the program in 2011. As a result, the level of infestations fell from a national average of 44% in May 2010 to 10.8% in November 2011 and to 5.3% in the 2012/2013 season. The FNC estimates that the total investment in CLR control at about US\$60 million.

All this had an important impact on the strategy applied in the replanting programs, with the use of rust-resistant varieties in crop renewal becoming a prerequisite. Until 2010, the variety to be grown was decided by the producer but since 2011 participants in replanting programs are required to plant resistant varieties. In 2011, the results of this strategy were quite positive; more than 80,000 hectares were rejuvenated with resistant varieties. Furthermore, new targets were set for the next five years with the expectation of renewing about 130,000 hectares annually with rust-resistant varieties.⁸³ This move was not well received by many farmers who had been growing the traditional varieties for decades; yet, it was and is considered as an essential strategy to effectively manage the disease and allow production to recover to previous levels.

The disease outbreak also intensified the focus on the quality of the seedlings being planted and in fact represented turning point, as it catalyzed changes in the way seedlings were produced. Traditionally, seeds for both replanting and new plantings were the result of the farmer's own selection but for the new resistant varieties the FNC recommendation was to purchase the seeds in certified shops. Even so, there was no overall control of the quality of the seedlings actually planted. Therefore, since 2011, Cenicafé has been providing seedlings to ensure their quality (specifically of the Variedad Castillo, resistant to CLR). A network of private nurseries, supervised by Cenicafé, has also been established to ensure that the increasing demand for good quality seedlings is satisfied.⁸⁴

4. Overall Achievements, Successful Factors and Remaining Challenges⁸⁵

Through the CP and the PSF initiatives, a total of 725,200 hectares were renewed during 1998-2011 (Figure 5.12). Investment in these programs has been considerable; US\$325 million is a rough estimate of the investments made as grants covering fertilizer purchases and as subsidies to cover the 40% of the loans taken by producers that they did not need to repay; however, this does not include the amount invested by the FNC in covering loan interest during 2008-2011. Investments (basically for fertilizer purchases) during 1998-2005 represented only 34% percent of the total grant investment under these two programs (excluding grants to cover loan interest). The FNC estimated the total investment through these programs at about US\$1.4 billion.

Although the contribution of the programs to ensure a young and quality tree stock has been significant, rejuvenation initiatives by producers themselves (i.e. without program incentives) have also been

⁸³ In 2012, nearly 117,000 hectares were renewed.

⁸⁴ This strategy faces significant challenges specifically if farmers start reproducing the materials on their own, with the subsequent risk of gradually losing the source of resistance to CLR. The investments required to ensure full traceability of seeds across the sector can be considerable.

⁸⁵ Sources of the data used in the figures presented in relation to the replanting programs have been extracted from the NFCG Annual Reports and a PowerPoint presentation provided by Santiago Silva Restrepo (August, 2012), Advisor to the Colombian Government in Coffee Matters.

remarkable. In 2011, record figures were recorded with total 117,000 hectares rejuvenated, 40% resulting from individual producer initiatives and 60% with program support (Figure 5.13).

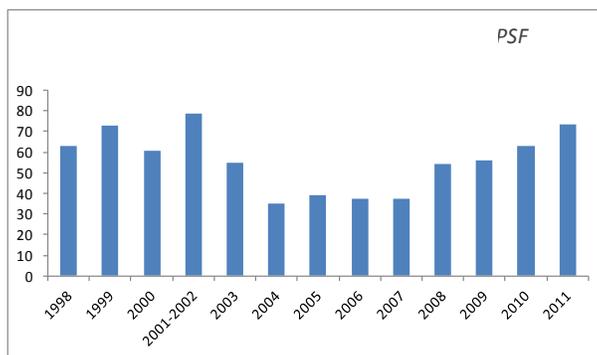


Figure 5.13 – Renewed Area Competitiveness and PSF ('000 Ha)⁸⁶

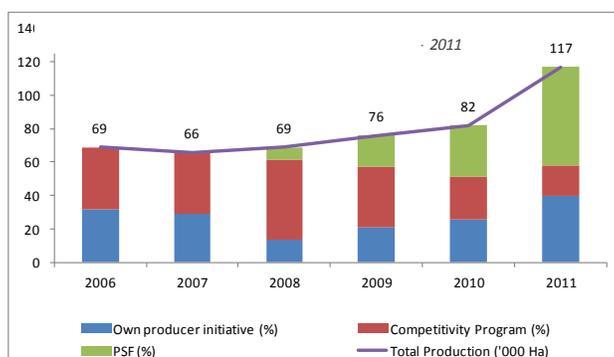


Figure 5.14 – Total Area Renewed (2006 – 2011)⁸⁷

The resilience of the sector to CLR is increasing. The area planted with resistant varieties has increased from 29% in 2006, to 43% in 2011 (Figure 5.14). More recent figures indicate that about 55% of the total area in Colombia is now planted with resistant varieties.

Furthermore, the programs contributed significantly to reversing the trend of plantations aging and becoming unproductive. In 2011, the average national plantation age was 9.3 years (and down to 8.2 in 2012), compared to 13.9 years in 2006. Similarly, during 2006-2011, the average planting density increased from 4,431 to 4,883 trees per hectare. (Figure 5.15).

⁸⁶ Source: FNC

⁸⁷ Source: FNC

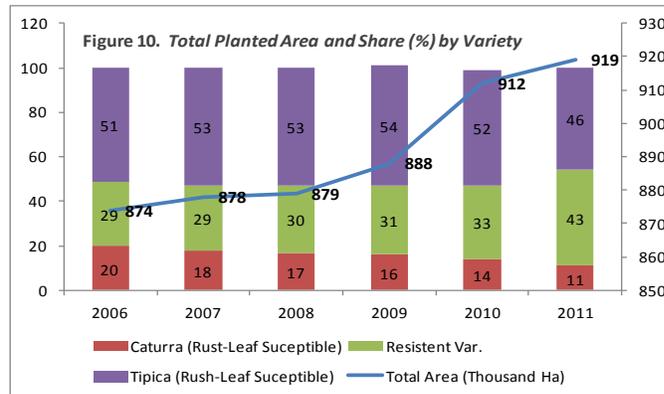


Figure 5.15 - Average. Plantation Age and Tree Density

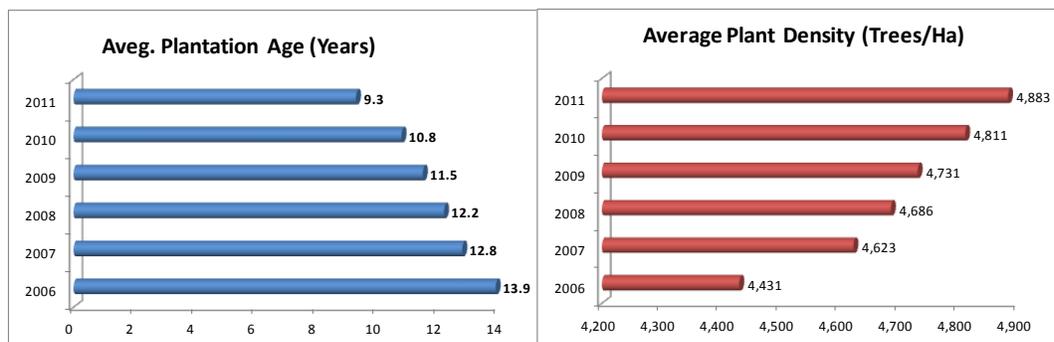


Figure 5.16 – Average Plantation Age & Average Plantation Density

Critical to the success achieved so far has been the shift in rejuvenation incentives, from providing inputs to providing bank loans and credit guarantees. Creating reliable distribution systems of disease-resistant varieties has been equally important. However, none of this would have been possible without the collective efforts of the sector (i.e. the FNC and its institutions, Cenicafé and the coffee extension service⁹⁰) coupled with the financial support of the government. Put differently, this combination represented a fully enabling sector environment.

5. Conclusion. While the results of increasing productivity via maintaining young plantations of resistance varieties in Colombia have been remarkable, the sector's main challenge is profitability, which has been in decline. An unfavorable exchange rate and high labor costs are main factors responsible for the declining competitiveness of the industry. Colombia's cost of rural labor has increased, in part due to ongoing conflict in rural areas and as well as increasing competition from urban jobs. This is causing

⁸⁸ Source: FNC

⁸⁹ Source: FNC

⁹⁰ The FNC established its coffee extension service in the late 1920s, and it currently comprises about 1,600 professionals. The extension system has been supported through growers' contributions for each pound of coffee exported (funding the FNC), and, more recently, also through a technical assistance Incentive (IAT, by its Spanish acronym) provided by Colombia's Ministry of Agriculture and Rural Development. In 2009, the extension service achieved certification against the ISO 9001:2008 standard, for the quality of the services provided.

labor shortages in the main and traditional coffee regions that affect the cost of production, especially for highly-productive, labor-intensive farms.⁹¹ Some analysts suggest that growers with areas under coffee in the range of 3.5 to 5 hectares will be in a better competitive position to produce coffee profitably. For other growers, operating large, extended areas or owning only very small areas, coffee might not be a very profitable activity. For large growers, labor costs present a significant barrier while the investments by very small-scale coffee producers might not produce the income necessary to support both basic needs and maintain crop productivity. These emerging analyses will certainly impact on future investment in the sector but Colombian coffee stakeholders expect that the proactive and also reactive measures implemented in recent years will restore the productivity levels achieved prior to 2008, as production increased significantly during the 2012/2013 season (reaching 10.9 million bags).

However, the challenges associated with low profitability (acknowledging the impacts of global and domestic coffee prices), increasing production costs, and declining price competitiveness due to a strong Colombian Peso are generating significant social tensions in coffee-producing regions. Accordingly, since 2012, measures to increase productivity via replanting/renovation have been complemented by a new policy designed to compensate producers for low prices (below a defined threshold. This policy is however proving extremely costly and fiscally unsustainable; in 2014 alone, the government has committed COP1 billion (approximately US\$500 million) for direct payments to farmers.⁹² The government has therefore appointed a commission charged with drawing up a new strategy for the sector, including critical aspects such as credit, sector profitability, exchange rate volatility, producer price stabilization schemes, coffee institutions and research. It also seeks to address structural changes needed to ensure the long-term competitiveness of the sector, which remains of critical socio-economic importance to the country.⁹³

⁹¹ Recent figures estimate the cost of producing a ton of coffee in Colombia at more than US\$2,700; while the average production costs of other mild types in competing Latin American and Caribbean countries is US\$1,450 and about US\$1,400 in the rest of the world. Of the total production costs in Colombia, the share of labor is estimated at 60%, while fertilizers represents about 20% ([Portafolio, November 5, 2013](#))

⁹² The price of Arabica coffee has significantly increased since January 2014, as a result of expected declining production in Brazil and Central American countries; this, combined with the prospect of further improvements in coffee production, is releasing some of the tension, and also reducing the need to apply price compensation payments.

⁹³ Coffee's share of total country agricultural and food exports was estimated at 30% in 2012 and approximately 3% of total country exports. Currently more than 500,000 producers are involved in coffee activities.

Case Study 9 – Utilizing Technology and “Boots on the Ground” to Reach New Customers in India – the Sub-K Approach⁹⁴

Objective: Extend financial services in underserved areas so that rural communities, including growers, can have greater access to credit and other financial services.

Response: Indian financial services provider Sub-K has developed a scalable technology platform called ViTRANSP for extending multiple types of banking services to rural areas. It has designed and established a set of operational processes to accompany these banking services and facilitate their rollout and usage. The pilot approach has now concluded and the service is now operational.

Background

Box 6.1 BASIX is an Indian institution that began in 1996 and focuses on livelihood promotion by providing financial services and technical assistance in an integrated manner. BASIX works with more than 3.5 million customers, over 90% being rural households and the remainder urban slum dwellers. BASIX operates in 17 states, 223 districts, and 39,251 villages. The foundation of BASIX’s work with these clients is the livelihood triad:



One of the major limitations in agricultural lending is the ability to reach rural clients in a timely, cost effective, and efficient manner. Given the limited branch network in rural areas, the lack of rural infrastructure, and the costs associated with getting to know clients in rural communities there was a need for innovation to provide greater access to financial services in India. BASIX, through Sub-K, is looking to use technology coupled with decentralized customer services providers to fill that gap in order to increase access to these essential financial services.

Sub-K, is a subsidiary of BASIX and provides residents of rural, urban, and semi-urban areas with a mobile technology-based transaction platform for access to services. The financial services include

⁹⁴ This case study considers an approach to expanding lending to agricultural sectors through the use of innovative techniques and processes facilitated by technology. The case is not coffee specific, however it is relevant in showing how technology and alternative operating models for delivery of financial services might be used to deliver loans to rural clients, currently outside the reach of the formal banking sector.

savings, micro-pensions, micro-insurance, National Rural Employment Guarantee Act (NREGA) and other government payments, money transfer, micro-credit, utility payments, and prepaid mobile top-up. Sub-K has established partnerships with eight nationalized banks in India to extend financial services using business correspondents in under-served markets. Currently Sub-K, has operations in more than 200 districts providing services on behalf of Syndicate Bank, Ratnakar Bank, Axis Bank, ING Visa Bank, Bank of India (BOI), Societe Generale, Karnataka Bank, and KBS Bank. In total, the program currently comprises 3,000 outlets with more than 600,000 customers.

Action

Sub-Ks business model enables customers to conduct financial transactions through its allied business correspondents. This service delivery model provides a wide range of customer-friendly services in an accessible, affordable, secure, and transparent manner. The correspondents provide real-time, personal financial tools and services at a much lower cost; estimated at 70-80% of the current costs associated with “smart cards” at a rural bank branch. To that end, Sub-K serves as an aggregator of existing financial products and delivers these to the consumer while collaborating with banks to create new products. Sub-K’s overall aim is to provide financial transactions at a cost of Rs10 for transacting amounts below Rs 1,000, expanding the opportunity for financial inclusion. Key to achieving this goal is the use of a mobile-based platform with technology innovations supported by personal identification numbers, voice recognition, and fingerprint identification to effectively and safely deliver the products and services to under-served communities.

The key value proposition of Sub-K includes:

- One-stop shop for financial and non-financial services
- Interoperability with multiple banks and business correspondents
- User friendly: Voice authentication and interactive voice response
- Innovations in delivery mechanism and technology
- Robust and scalable business model
- Low capital expenditure and operating expenditure
- Cost-effective for the consumers: Banking beyond the branch at the retail stores
- Economically viable for the banks: Costs involved in serving a consumer for low cash and large volumes are significantly reduced
- Increase in value for the retail store owner by becoming a business correspondent
- Technically feasible in terms of ease of operations, use of simple technology, and uniform quality of service

Approach

Sub-K, in collaboration with financial institutions, has reached a majority of the customers by selecting and training retail shop owners to serve as business correspondents (or “Live ATMs”). It trained correspondents in financial service provision and marketing in order to provide them the capacity to effectively deliver services to its customers. In order for the business correspondent to complete end-to-end customer transactions, they have been trained and provided, at their cost, a micro-ATM kit, which is a combination of mobile phone and a Bluetooth handheld printer. Sub-K facilitates all the transactions using either an interactive voice response technology that uses voice biometrics for speech verification and recognition or fingerprint authentication, making the delivery of the products/services secure. To ensure the business correspondents were effective financial service agents, Sub-K had to: (a)

make settlements online with real-time transactions; (b) eliminate cash management by providing a float fund to each correspondent outlet for conducting transactions; (c) eliminate expensive and offline smart cards; and (d) establish the locations of business correspondents as permanent entities in their communities.

Sub- K and Lending

Although to date lending has not been one of the central services facilitated through the Sub-K network, arrangements have been made to expand its application to credit. Sub-K is now being used for lending in partnership with YES Bank and Coastal Bank and these partnerships will subsequently be extended further to other banks. Lending will be conducted through the bank accounts of the individual customer or by capturing transactions through the Sub-K technology platform, which will also be used to authenticate customers. This, unlike traditional lending, would allow:

- Real time capturing of transactions (disbursement and recovery)
- Reduced transaction costs for banks as well as non-banking finance companies
- Lending to remote areas using technology that promotes inclusion of rural borrowers
- Productivity increases by reducing transactions costs

The cost of lending with Sub-K is estimated to be half of the cost for existing methods of lending. It is hoped that these costs can be reduced further through additional productivity enhancement and value addition from utilizing of a common platform. For these loans, lending will take place through referral mode using agents at village level. However, while repayments will take place at agent outlets using Sub-K technology on real time basis, customer registration and verification will need to be conducted at bank premises.

Initial Outcomes and Lessons Learned

While the lending component of the Sub-K work cannot be evaluated yet and is only in the initial stages, there are some lessons related to the use of technology for extending financial services from the work of Sub-K and the use of business correspondents. Sub-K has devised a promising solution to the “point of recovery” concept suggested by the Reserve Bank of India, proving its model, through innovative technologies, can reach the unbanked rural population where there are no branches available. The Sub-K approach has addressed financial service process gaps through its use of a real-time information-processing framework. Routing transactions through a bank account has also helped to foster savings habits among customers. Despite these successes, some process delays and technology issues still need to be addressed, illustrating that while many additional rural clients have been reached and served, challenges remain. Until such time that the Sub-K lending component is fully evaluated a comprehensive understanding of the efficacy of the program will not be available.

Sub-K had provided the operational strength to approach customers in all the locations. It has allowed communication to all customers regardless of location and provided timely back-office support. Even so, there remain challenges to reaching customers in rural and remote areas. Many of these are the same challenges that confront traditional lending approaches, such as dealing with government officials at the village level, and coping with fidelity risk and cash-handling risk.

Case Study 10: Farmers' Access to Credit: Experience of Coffee Farmers in Ethiopia and Rwanda

Introduction

This case study examines the CFC/ICO financing project that is currently ongoing in Rwanda and Ethiopia. It highlights how one program implemented in two countries can have significantly different outcomes, even when project designs are almost identical. The mixed outcomes from this project highlight the need to both consider national differences, in terms of the enabling environment within a country, and the need to ensure high quality implementation, tailored to the local environment, to facilitate positive outcomes. In short, the case demonstrates that any party implementing a project aiming at improving access to finance for the coffee sector must ensure that project implementation is tailored to the national, regional, and local contexts. A high-quality project design is insufficient to ensure results.

Background Information

The project in question was designed to assist cooperatives in accessing finance in a sustainable way, including working capital loans to enable the purchase of coffee cherries and long-term loans for investment in equipment and investment in infrastructure. This in turn would enable the cooperatives to improve coffee quality and raise the incomes of their coffee growing members⁹⁵. The mechanism for the expansion of finance was the provision of a guarantee service for local banks that were lending to the sector. The project was implemented in Ethiopia and Rwanda, which are both coffee-producing countries. The project is ongoing but initial results demonstrate notably poorer results in Rwanda (with fewer loans made and higher defaults) than in Ethiopia, despite the project design and implementation being almost identical in both countries.

The project derived from a three-year pilot project on improving coffee quality in East and Central Africa through enhanced primary processing practices. The original project aimed to demonstrate good practices for post-harvest processing of coffee, enabling farmers to produce higher quality coffee, generate higher income, and improve their livelihoods. To help achieve these objectives, equipment for small-scale coffee washing stations – such as pulping machines and raised drying beds – was delivered to participating farmers. The marketing of these high-quality coffees was also organized with technical assistance provided to build the capacity of farmers' organizations. The original pilot project concluded in 2008, however at the project closing workshop, it was felt that a new initiative was needed to consolidate the positive results achieved and to assure the sustainability of good post-harvest practices developed throughout that initial project. Specifically, the new project would focus on enabling farmer cooperatives to access finance to fund the purchase of coffee cherries and investment in equipment to improve the quality of their coffee.

During project design it was determined that banks in both countries perceived lending to smallholder producers to be unattractive due to perception of high risk and cost, with relatively low risk mitigation opportunities. Specific issues identified included:

⁹⁵ Sustainable Credit Guarantee Scheme to Promote Scaling Up of Enhanced Processing Practices in Ethiopia and Rwanda (Project CFC/ICO/48), currently being implemented by Centre For Agriculture And Biosciences International (CABI) and Rabobank.

- Smallholder farmers being unable to provide viable collateral; in the case of Ethiopia, this was further aggravated by a land ownership policy where farmers do not own their land
- High transaction costs for processing and monitoring small loans
- Weak farmers' organizations, restricting the ability to lend to aggregated groups of farmers
- Lack of straightforward, efficient loan recovery on default
- Inadequate understanding of the coffee sector by the banking industry

The constraints identified were largely similar to those highlighted in an earlier study jointly undertaken by the CFC, ICO, and the World Bank in 2000⁹⁶.

Project Design: Introduction of a Credit Guarantee Scheme to Account For Lack of Collateral

Project research showed a lack of collateral is a major constraint to borrowing by farmers for investment purposes, with most banks requiring collateral valued at a minimum of 100% of the loan amount, in addition to interest. As such the project decided to utilize a credit guarantee scheme to address this barrier, enabling banks to use the guarantee partly as an alternative to traditional forms of collateral.

The project drew up a credit guarantee scheme based on a risk-sharing agreement between the CFC and Rabobank Foundation, with CFC contributing US\$2 million to cover half of any losses incurred through the lending made to farmers as part of this project. Rabobank Foundation acted as the second guarantor to the domestic banks involved in lending to farmers as part of this project. In addition to the guarantee, Rabobank International Advisory Services (RIAS), was contracted by CFC to provide technical assistance to the banks to educate them in lending to the coffee sector and to provide technical assistance to coffee cooperatives on corporate governance and financial literacy.

Project Actors

Public Sector Project Management

In Ethiopia, the Ministry of Agriculture and the Rural Development, Extension, and Marketing departments managed the project on a day-to-day basis, while in Rwanda the National Agricultural Export Development Board provided this support.

Project Implementation

Centre For Agriculture And Biosciences International (CABI) was the project executing agency with primary responsibility for project coordination, supervision, and monitoring. In addition, CABI led the work on agronomic aspects for cooperatives and market access for cooperatives.

Technical Assistance – Banks and Cooperatives (Financial and Organizational Management)

RIAS provided technical assistance to the banks participating in the project, building their capacity to understand and lend to the coffee sector. RIAS also provided technical assistance to cooperatives on financial literacy and corporate governance, with additional support from CABI.

Commercial Banks

⁹⁶ "Marketing and Trading Policies and Systems in Selected Coffee-Producing Countries", Country Profile, February 2000; CFC/ICO/04FA.

The selection of banks to participate in the program was made during project design, with Cooperative Bank of Oromia (CBO) selected in Ethiopia and the Banque Populaire (BPR) in Rwanda. Their selection in this pilot phase was influenced by their existing link with Rabobank⁹⁷ and their focus on the agricultural sector and the availability of a network of branches in rural areas. The two banks committed to increase financing to the coffee sector by utilizing the guarantee scheme. Even with the guarantee arrangements, the banks retained an obligation to lend responsibly utilizing prudential banking practices, relying on their existing lending policies and procedures in assessing and approving the credit facilities.

Borrowers, Beneficiaries

In both Rwanda and Ethiopia, borrowers included farmer cooperatives, small- and medium-sized enterprises, and large-scale commercial farmers, active in coffee production, processing and trading. In Ethiopia, lenders selected eligible borrowers in collaboration with project management. The size of the potential guarantee was US\$2.25 million. At commencement, 42 cooperatives were selected to participate in the scheme, and their applications were submitted to the Cooperative Bank of Oromia for assessment. In Rwanda, the size of the potential guarantee was US\$1.35 million. At project commencement, 20 cooperatives were selected and their applications were sent to BPR for assessment.

Supporting Project Activities For Improving Access to Finance

The project implemented a series of activities to improve the ability of the banks to lend and the ability of the selected candidates to borrow. Key activities included:

1) Assessment of the existing system used by the banks to advance and recover loans from their coffee sector clients. An effective loan system requires an efficient loan appraisal system that takes into account the unique characteristics of the crop for which the loan is sought. Therefore, information was collected from banks on their criteria for disbursing and recovering loans related to coffee, gaps were identified, and improvements suggested and implemented by the banks. To facilitate this work, information was gathered from the potential cooperative borrowers about factors that could contribute impact their ability to repay their loans (key factors included: inadequate management/leadership of cooperatives, lack of financial literacy, and poor transparency). The banks utilized this improved credit assessment process when determining whether to lend to the cooperatives seeking funds.

2) Identifying and addressing challenges to lending to cooperatives and addressing these challenges. Surveys conducted at banks and at cooperatives identified some key barriers to lending: a) banks were reluctant to take on the additional costs associated with administering many small business loans to coffee cooperatives; b) banks perceived the business management skills of the cooperative leaders to be weak; and c) cooperatives struggled to complete the documentation required to apply loans. As a result, the project implementation team (CABI and RIAS) developed a capacity-building program for cooperatives to improve their management and financial literacy skills and enhance their attractiveness to banks. The capacity building included workshops covering various organizational and financial topics, and technical support to cooperatives in respect to preparation of business plans and in support of their ability to meet bank lending requirements.

In addition to the work to bolster the cooperatives' financial management skills, the technical assistance provider also ensured the provision of agronomic capacity building, including seedling preparation and planting, coffee maintenance (pruning, organic and mineral fertilizer application), pest and disease

⁹⁷ Cooperative Bank of Oromia (CBO) is a partner bank of Rabobank international. Banque Populaire du Rwanda (BPR) is a partner of Rabobank, which itself holds an equity stake in BPR.

control, coffee extension services, and coffee processing. The goal was to improve both the managerial and technical competence of the cooperatives.

3) Building the capacity of bank loan officers to lend to the coffee sector, and coffee cooperatives. RIAS organized training sessions for the bank staff in charge of lending to farmers. This training involved educating loan officers about the sector its key actors so that they might better understand the potential borrowers and gain an appreciation of ways to assess their creditworthiness and make more informed lending decisions.

Performance of the scheme in the participating countries

Ethiopia

CBO was established in October 2004 with the purpose of providing financing to primary cooperatives and as such already had significant experience with this sector. The bank enjoyed a 98% loan recovery rate and had proven credit screening and monitoring processes already in place. As stated, the purpose of the program was to enable cooperatives that had previously lacked the necessary collateral to secure a CBO loan to finally become eligible for finance.

Out of 42 cooperatives identified at the outset, 22 cooperatives that complied with the criteria were selected to participate in the credit scheme, and templates and guidelines for the preparation of business plans were developed for these cooperatives to apply for loans to finance the 2012/13 coffee season. Working capital loans amounting to the equivalent of US\$820,000 have so far been provided to 11 cooperatives in Ethiopia under the credit guarantee scheme. All these cooperatives are receiving their loans directly from the bank for the first time in their history.

Cooperatives with no previous history of accessing loans directly (having previously relied on parent cooperatives) now feel more empowered technically to access loans independently. These achievements were made possible by the capacity-building and education activities implemented in the country since the start of the project. In addition to the capacity building at the cooperative level, the guarantee scheme provided support to CBO in order to lend to clients that historically would have been excluded due to lack of collateral.

With continued capacity building by CABI and RIAS, it is expected that, by the end of the pilot phase of the project in 2016, the number of beneficiaries in Ethiopia will increase substantially. However, it should be noted that while the program has enabled new loans to be made for working capital purposes, no longer-term loans were made for investment purposes, which was one of the original project goals. This highlights the continued challenges, even with a guarantee program in place, that hinder banks from lending longer-term funds to clients for investment purposes. In the Ethiopian context, the monetary environment proved to be challenging due to a change in central bank policy which limited the scope of commercial banks expanding lending to clients.

Rwanda

The guarantee scheme was launched in Rwanda with a selection process to identify eligible cooperatives. A set of minimum criteria for accessing loans were established by BPR for cooperative selection and specified: a) the cooperative must provide a capital contribution equivalent to 50% of the loan requested; b) evidence of market access in the form of a forward contract or letter of intent from a potential buyer; c) a good track record of management of washing stations over previous years; d) acceptable financial performance over the past two coffee seasons; requirement of fixed collateral with

a value equivalent to 130%. As such, even with the guarantee of 50% in place, there was a significant requirement for any borrowing cooperatives to prove their managerial and technical business management competence and their financial sustainability.

During the 2011/12 coffee year, only three cooperatives out of the 20 that applied were able to meet the rigorous selection criteria. These three cooperatives were provided with total loans equivalent to US\$365,000. However even with the rigorous selection criteria, all three cooperatives failed to repay their loans due to a severe drop in prices. This example showcases that creditworthiness and financial performance can be derailed by outside factors in spite of a rigorous due diligence program and the provision of technical assistance in cooperative and financial management.

In the following year, only four cooperatives were able to prepare and submit acceptable loan applications. Out of these four, only one cooperative met the criteria and was provided with finance. The failure in Rwanda was based on a number of factors, including: the poor corporate governance and financial management of coffee cooperatives; limited capital and availability of collateral; the inability of cooperatives to effectively manage price risk (the failure to either hedge or to operate an effective back to back program of sales and purchases); the competitive coffee landscape in Rwanda (with independent actors arguably operating more professionally than the cooperatives); and the inability of the bank to process loans in a timely manner, delaying disbursement and further damaging the performance of the cooperatives. In addition to the above issues there was also a specific challenge given there was no local CABI-style actor pushing the Rwanda program forward with cooperatives (as was the case in Ethiopia). This hampered the participation of the cooperatives in the program and reduced the number of creditworthy cooperatives requesting financing. On the other hand, CBO, established by coffee unions, had more experience with financing coffee cooperatives.

Conclusion

While the program design was identical in both countries, it is obvious that the outcomes were very different. Ethiopia's effort met with a measure of success in terms of cooperatives receiving and repaying loans, while in Rwanda few cooperatives received loans and there was a high rate of default. This raises significant questions regarding the enabling environments in each country and whether a successful project to increase finance in one country can be simply repeated in another.

Arguably both Ethiopia and Rwanda share significant constraints in cooperatives accessing lending. Both countries have relatively weak cooperatives, with poor managerial and organizational skills. Both countries have fiscal constraints that limit the scope of banks to expand their lending and both experience the same challenges of extreme price volatility in the coffee sector, which significantly affects the performance of coffee sector borrowers. However, the differences are also noteworthy. In Ethiopia, the bank involved in the project has an explicit mandate to work and support cooperatives and was arguably more willing to provide flexibility in its lending requirements than BPR was not, thereby enabling more cooperatives to access finance. In Ethiopia, the support from the project implementation agency was much more proactive, with greater emphasis on marketing the project to cooperatives and securing their involvement. A final point of note is the structure of the coffee sectors in both countries. The multiple small-scale cooperatives in Rwanda, based around washing stations, are often less robust than the primary societies in Ethiopia, which are linked to professional unions. When shocks (such as price falls and spikes) occur, the cooperatives in Rwanda are much less able to command their members' loyalty.

A key lesson from this project must be that projects cannot simply be copied from one country to another, but rather the local differences need to be adequately accounted for and the project structured and designed to accommodate these differences.

Case Study 11: Incorporating Price Risk Management Into the Lending Operations of a Tanzanian Bank – 2005-2007

Objective: Protect lenders, bank clients, and cooperatives – especially those that announced pre-season prices to growers – against intra-season price volatility.

Response: Introduce tools for risk assessment and quantification, and promote risk management through physical and financial risk management (hedging).

CRDB Bank (CRDB), based in Dar es Salaam, is a large commercial bank. It was originally a state-owned rural development bank but was privatized in 1996 and has since become one of the largest retail banks in Tanzania, operating across the corporate, retail, business, treasury, and wholesale microfinance sectors. The bank was listed on the Dar es Salaam Stock Exchange in 2009 and expanded to Burundi in 2012. At the end of that year, the total number of banking customers had grown to over 1.2 million. CRDB has a long history of lending to the rural sector, stemming from its history as a rural bank and its desire to reach untapped markets. In 2012, lending to agriculture was 28% of the bank's total loan portfolio despite a decreasing emphasis on agricultural lending due to sector risk.⁹⁸

As a result of the 2002/03 coffee crisis, when prices fell considerably, CRDB faced significant default issues from its coffee clients, primarily cooperatives, that had been taking in coffee at prices that turned out to be well above the prevailing market. Some clients were buying coffee at fixed prices without knowing what the auction sales price would be⁹⁹; i.e. they were long and as such were fully exposed to price risk.¹⁰⁰ Still other bank clients were impacted by price fluctuations that arose in the time between when they would buy coffee from farmers, mill the coffee, transport it, and then sell at the auction.

Action. CRDB's initial answer was to only lend against in-warehouse coffee by implementing a collateral management system under which borrowers could access funds (up to a pre-approved level) only after depositing coffee into a pre-defined milling facility or warehouse. This coffee then became collateral for any lending and, in order to limit its exposure to price risk, the bank would only advance a percentage of the estimated value. If CRDB pitched its advances too low, then clients could not operate; yet keeping them close to prevailing price levels remained extremely risky. Even though this provided some limited protection to the bank, it could not account for extreme price movements, leaving it exposed to the risk that its clients would be unable to repay these advances if prices fell sharply.¹⁰¹

⁹⁸ CRDB 2012 Annual Report.

⁹⁹ Most coffee was being sold through the weekly Moshi coffee auctions.

¹⁰⁰ Long refers to buying coffee now for later resale, while short positions involve selling coffee forward to be purchased later.

¹⁰¹ Moshi coffee auction prices would fluctuate considerably, at times contrary to global market developments and could (and did) drop sharply from one week to the next. This basis risk, i.e. that the price for Tanzanian coffee moves contrary to the global market, cannot be hedged nor could it be quantified because of clients producing varying qualities of coffee.

To avoid having to curtail lending still further, in 2005 CRDB introduced a risk management program (called Kinga Ya Bei) that was to provide greater protection to the bank and improved flexibility to its clients. The program focused on risk quantification and assisting clients in managing risk through market-based instruments. This program was also implemented for cotton clients.

Approach. The approach taken was primarily capacity building so that CRDB and its clients could acquire the technical skills needed to better manage the price risk involved in buying coffee without immediately selling it (trading back-to-back, or taking a long position). The goals were:

1. **Risk Assessment** - *Introduce a systematic approach to risk assessment, enabling clients to understand when and to what magnitude their business is or becomes exposed to price risk by compiling daily position reports and marking 'to market'.*

Up to this point, most of CRDB's clients neither knew their "position" nor their market exposure and were often exposed to the vagaries of the market. Capacity building was used to help clients understand when they became exposed to price risk i.e. when buying before selling (long) and when selling before buying (short). It also demonstrated how small changes in price while exposed could nevertheless create substantial losses.

2. **Physical Price Risk Management** - *Provide training to clients on physical risk management.*

One of the ways in which CRDB clients were encouraged to manage their risk was through the use of physical coffee transactions. At the time, direct export licenses were being introduced in Tanzania to allow sellers to bypass auction for some of their coffee. Capacity building was provided utilizing different approaches to physical price risk management and concentrating on the use of coffee contracts and relationships with others in the coffee chain in order to minimize the time between the purchase and sale of coffee and vice versa; i.e. trading back-to-back whenever possible as a way of limiting risk for both client and lender.

3. **Managing price risk through hedging** – *Provide access to financial price risk management mechanisms and prepare clients to utilize these when needed.*

CRDB built an in-house capacity for this purpose and provided its clients access to futures and options through a commodities broker. Prior to this, most, if not all, of these domestic operators had no such access. CRDB provided training on the different alternatives for these instruments and when their use would be considered appropriate.

In addition, the program focused on training CRDB staff so these could build capacity among the bank's clientele. Clients were encouraged to include risk management in their everyday operations and not to treat this as a separate activity. Similarly, CRDB staff was encouraged to treat risk assessment as one of the core components of lending, meaning that risk management should be one of the key lending criteria and should be part of a borrower's normal operations. CRDB's clients were encouraged to begin managing their risk as soon as they began purchasing coffee to help protect the global price level on which their purchases prices were based.

Outcomes. While many clients integrated the ideas of risk assessment and physical risk management into their operations, CRDB did not always insist that clients implement risk management as a prerequisite of lending. Those from CRDB working with clients therefore tended to view financial risk management much more opportunistically than systematically, particularly as coffee prices rose steadily in the years following the program's inception, making it difficult to quantify the actual results. They

also regarded the exercise as being quite expensive, with prices for put options at the time historically around 5% to 8% to protect at current market levels.

CRDB staff did become technically competent in discussing risk management and assisting clients in better managing their risk by providing the necessary training and enabling their clients to use the bank's risk management services as they felt were needed. Very small numbers of clients did utilize CRDB to purchase hedges through options on international markets, but rising prices caused their interest to wane. Therefore, while part of the objective at the outset of the program (to allow clients to access market based price risk management instruments) was only partially achieved, CRDB became much better at assessing their borrowers' exposure to price risk by assessing break-even levels, analyzing their positions, and marking these to market.

Lessons Learned

Demand for risk management is based on market conditions. The experience with CRDB demonstrates an important lesson about the opportunistic nature of many coffee clients. Most viewed risk management as a one-off intervention and only became really interested when market prices fell, as happened during the coffee crisis. However, as prices subsequently improved, their interest in price risk management declined once more, the perception being that prices would remain high. Essentially, clients often did not see the need to invest in risk management on an ongoing basis.

Risk management is dynamic and needs to be done on an ongoing basis. The risk assessment and quantification portion of the work done was applicable to a large number of businesses. Many of CRDB's clients did not have these skills and therefore they were often taking on risks they could not quantify. Training in these areas allowed clients to begin identifying price risk in their business. It also allowed them to identify how it changed on a daily basis, allowing them to manage risk through the most appropriate strategy.

Holistic risk management. One aspect that became clear was the need to focus on holistic risk management rather than on a specific financial risk management instrument, i.e. options.¹⁰² Risk management strategies would need to vary by client type, since work with CRDB showed that there is no one-size-fits-all solution for risk management. Solutions need to be customized, unique, and reflective of existing market and trade conditions. In order to do this, clients must quantify their exposure to risk on an ongoing basis.

Risk Preference. Not all clients were interested in managing their risk. Some instead preferred to remain exposed to price risk in order to potentially have a higher payout in a given year. They did not want to trade the potential upside for locking in small margins, especially when prices were low. When prices are weak, clients might feel they are locking in a loss and are paying for an insurance they will not use. Yet even if prices are low, it is entirely possible for them to fall still further. Banks may still insist on cover being taken and as such put options are attractive as long as prices remain at reasonable levels.

¹⁰² **Options vs Futures.** Options are ultimately a *more expensive means of hedging price risk exposure*. With margins tight in the coffee sector, the costs associated with options did not seem reasonable to most clients. While providing credit guarantees to support the use of futures contracts would have reduced the cost of hedging, this would have increased the risk of the program.

They help provide a price floor but they have to be put in place before, not after, a market falls. And finally, some clients in fact considered currency risk the greater risk.

Incentives. In implementing this program, it was critical that CRDB management made risk management an operational priority. Because there are costs both in terms of time for risk quantification and money in terms of hedging instruments associated with risk management, CRDB staff had to see implementing this program with clients as a major component of their performance evaluation. However, given all the other lending requirements and competition in the sector, banking staff and management did not obligate clients to participate in the program; it was instead provided on an optional basis, probably in part because the program was not only new but also as yet unproven.

Situation Today

CRDB has been in discussion with additional brokers since the expiration of its contract with those involved in the original program. So far, the quotes for brokerage services have been out of the scope of CRDB so the Bank is still exploring different options. However, despite not having an active relationship with a broker, commodity price risk management has been a key area of concern in CRDB's agricultural lending practice. To that end, CRDB has been looking at the option of hedging the whole commodity portfolio (e.g. cotton, coffee, etc.) and passing the costs to clients. CRDB is about to establish a dedicated Commodity Price Management desk following the recommendations of the International Finance Corp (IFC) from its recent review of CRDB. In addition IFC have approved a short term credit line to CRDB dedicated to a Global Warehouse Finance Program with concessional pricing.

Case Study 12: Cédula de Produto Rural: A Tradable Receipt in Brazil

Objective: Provide an alternative to government financing for agricultural producers and agribusinesses, including those working in coffee.

Response: Banco do Brasil introduced a tradable receipt called the Cédula de Produto Rural (CPR) to make it easier for producers and agribusinesses to access private financing.

Background: Since the 1980's the agriculture sector, which represents 40% of total Brazilian exports, has contributed to the economy by keeping food prices stable through increased production, and by bringing in billions of export dollars. Figures 6.1 and 6.2 compare the percentage contributions of key agricultural products to Brazilian exports in 2002 and 2012. Over this time, the coffee market's share of Brazilian exports has grown from 5% to 7.6%. Figure 6.3 shows the value of Brazilian coffee exports; it points to the decline in the value of exports between 1997 and 2002 that accompanied the international coffee crisis as well as the subsequent recovery from 2003 to 2011 (even in spite of the financial crisis in 2008-2009). The value of Brazilian coffee exports is directly influenced by the international commodities prices for coffee and as well as demand for coffee in evolving coffee markets.

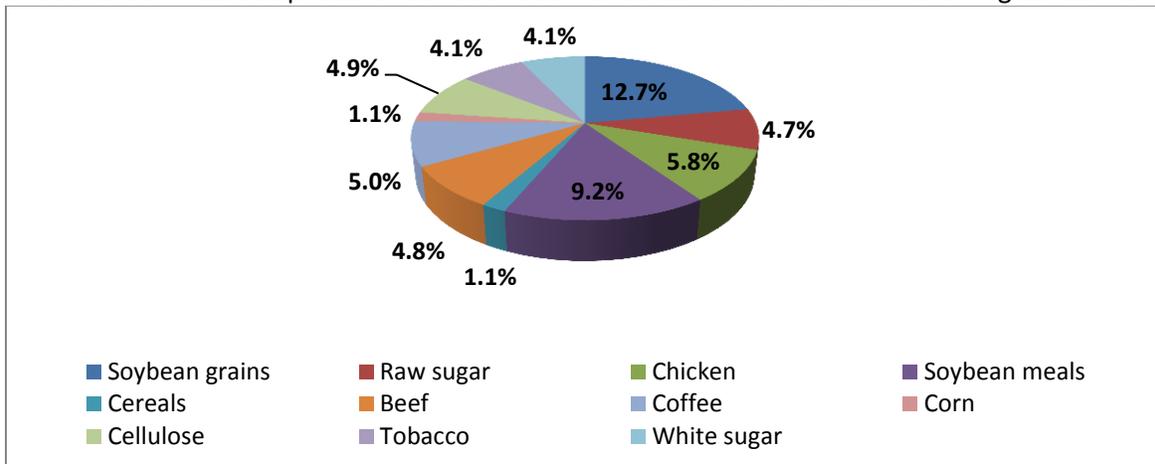


Figure 6.1 - Agricultural exports % of total 2002¹⁰³

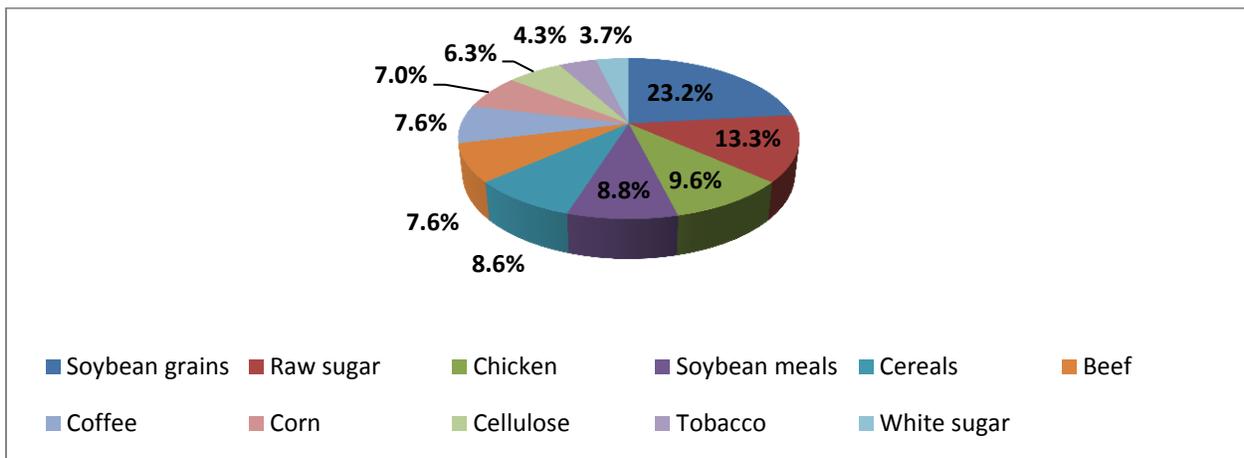


Figure 6.2 - Agricultural exports 2012¹⁰⁴

¹⁰³ Source: SECEX/MDIC

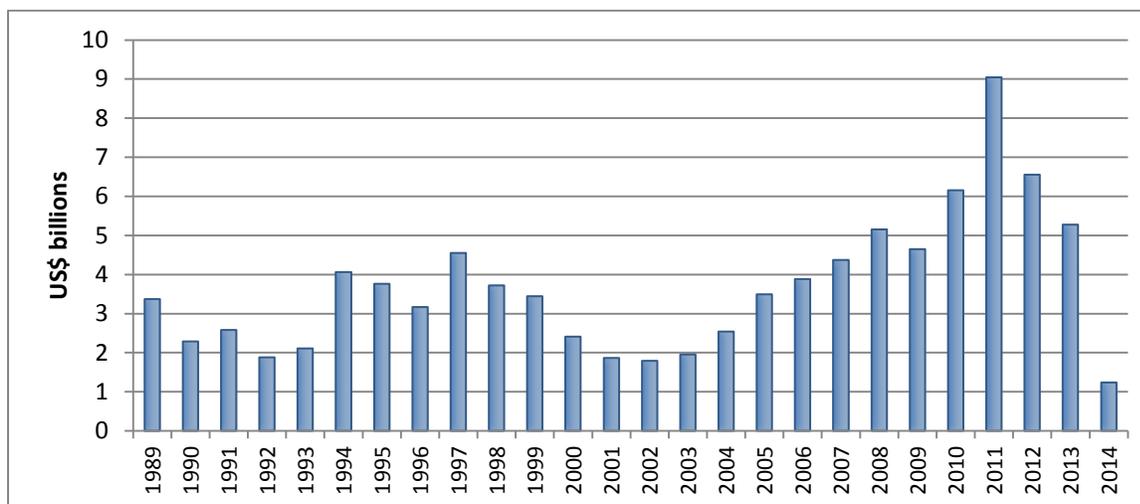


Figure 6.3 - Export of Coffee in Brazil – US\$ billions (constant prices, 2013); note: for 2014, the value reflects the three months through March¹⁰⁵

Coffee producers and agribusinesses need access to credit in order to carry out activities such as land preparation, fertilizer, and field maintenance.¹⁰⁶ But while some traditional lending is available through banks and other financiers, these channels are not always sufficient. Before the 1990's, credit to agricultural producers in Brazil was available from the government at subsidized terms, with the total value of all loans peaking in the 1970's (Figure 6.4). Government policies during this period favored import substitution and guaranteed price minimums for agricultural products, while also providing credit for production. However, the 1970's and 1980's brought changes as macroeconomic shifts within the country and the impacts of unsustainable government support combining to bring a halt to this subsidized credit. In turn, by the early 1990's the agricultural landscape for credit began shifting, as the government was no longer providing this credit to producers at the levels available over the previous 50 years. By the early 1990's, rural credit policies had collapsed and producers began accumulating significant debt. Eventually, the government tried to create conditions for new credit instruments that would allow private markets to finance agriculture.¹⁰⁷ One of these new credit instruments was the Cédula de Produto Rural (CPR).

¹⁰⁴ Source: SECEX/MDIC

¹⁰⁵ Source: SECEX/MDIC (<http://aliceweb.desenvolvimento.gov.br/>) - Ministry of Development, Industry and Foreign Trade

¹⁰⁶ Costa et al (2010) APUD Matiello et al. (2005)

¹⁰⁷ Sousa and Pimentel (2005) argued that, "Brazilian agricultural policy also has experienced a significant transformation that began in the seventies. Until that time, the policy model was based on a highly protected economy, was designed for the substitution of imports, had an abundant subsidized supply of credit, and used minimum price guarantees for commercialization. The fiscal insolvency of the State and the economic instability that marked the eighties, however, lead to a near collapse of the rural credit policy at the beginning of the nineties. The failure of that model of credit, associated with the rapid and unplanned economic opening of the nineties, culminated in a major crisis in the agriculture sector" (p.4).

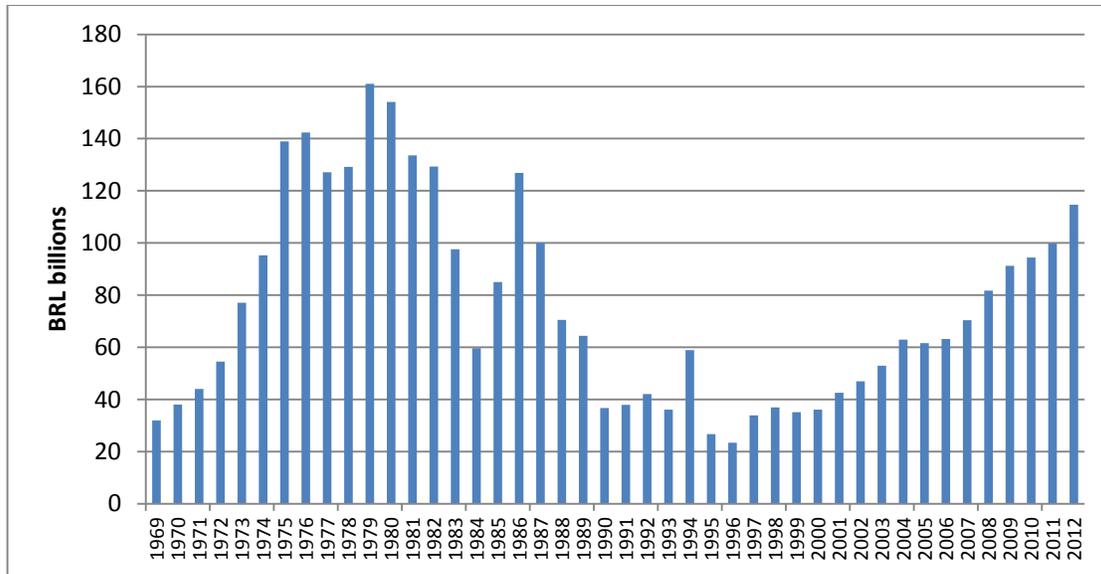


Figure 6.4 - Total rural credit supplied by the National Rural Credit System (SNCR)¹⁰⁸

Action: When it was created through legislation in 1994, the CPR represented one of the key innovations that arose to meet the demand for production credit by producers in Brazil. It was hoped at the outset that it would allow producers to tap into new capital bases when accessing credit. This new program was championed by the Government of Brazil and has been supported heavily in its evolution by Banco do Brasil.

The mechanism was designed to be simple and straightforward. Producers and cooperatives could issue a CPR in return for finance of the amount matching their product, which the issuer was obligated to deliver on the negotiated expiration date. Given the physical CPR required delivery, it limited the buyers' market for the CPR to those who had interest in the delivered product. This gave rise to the financial CPR in 2000. The financial CPR did not require the buyer to take receipt of the product, which opened the CPR to essentially any financier.

The overall goal of the CPR program was to provide a viable credit alternative to producers who could no longer effectively tap traditional credit lines, as well as an additional credit alternative those who could. The specific objectives of the CPR were:

- To finance production through early sales of the product
- To guarantee the supply of raw materials through early sales of agro-industrial production
- To sell inputs through via barter operations, through the exchange of inputs for farm production by companies dealing in inputs
- To provide alternative investments for investors/investment funds

Approach

The CPR is a bond product that was developed to provide access to credit for working capital for producers and agricultural businesses. The CPR essentially creates loan collateral out of the underlying

¹⁰⁸ Source: Brazilian Central Bank (www.bcb.gov.br)

product or livestock. Sellers of bonds are typically agricultural producers or processors, while buyers of these products can vary from financial institutions to investors. As these products are tradable or able to be settled financially, it deepens the pool of possible credit providers to the agricultural sector. CPR's have a unique legal nature distinct from traditional agricultural finance; their terms are transparent and they are transferable. Disputes surrounding CPRs are often settled within 24-48 hours, making them appealing to all parties.

The CPR basically takes three different forms:

- 1) **Physical** - The Physical CPR is a bond that can be sold by a producer. This bond requires that the producer ultimately deliver an agreed upon amount of output/livestock of a specific quality to a specified location on a particular date. Because the bond specifies that amount and quality to be delivered, any deviation from the terms will result in a discount or premium payment at the time of delivery. Physical CPRs can also assist producers in managing price risk. Given that the sales price of the physical product is directly linked to the value of the bond, producers need not worry that prices will fall after they have sold the bond and they would therefore be unable to repay the credit. Instead, the value of the bond is directly linked to the value of the delivery. The physical CPR was the first product introduced (originally for soybeans) and was established and regulated by Law 8929 of August 22, 1994.¹⁰⁹ Sales volumes have increased since its introduction and it has become one of the most commonly-used tools for accessing production finance in Brazil.
- 2) **Cash settlement of CPR** – Given the physical CPR ultimately requires the bondholder to take physical delivery, some investors or other financiers who wished to expand the types and classes of their holdings and had sufficient capital to do so were hesitant to enter this market. While these CPRs were tradable, if an investor bought a CPR but could not sell it before delivery they would potentially have to take delivery (and in some cases they were prohibited to do this). This created a market for the emergence of a new CPR instrument that could be liquidated without physical delivery: the financial CPR was established. In February of 2001, this element was added, permitting the financial liquidation of the contract. Instead of delivering the produce to the buyer of the bond, the bond issuer (producer) would sell the agreed output and settle the bond with cash. The cash would be equal to the amount borrowed plus an agreed upon interest rate. This greatly expanded the number of parties interested in purchasing the CPR, particularly as the CPR interest rates were often higher than for other instruments.
- 3) **Cash settlement based on futures prices** – The final evolution of this product has been the cash settled CPR, indexed to a futures contract. This was created by Banco do Brasil and allowed cash settlement based upon a mutually agreed reference price. The reference price or index needed to be transparent – i.e. taken from a publicly available and recognized source, such as the Brazilian futures contract price or an external accepted published price index. Settlement is based on the price at the settlement date, multiplied by the agreed quantity.

Outcomes

The CPR has proven to be a viable alternative credit instrument for producers in Brazil. The CPR's success is evident in the increasing values of negotiated CPRs observed until 2009 (before the financial

¹⁰⁹ de Sousa, pg 6.

crisis), in addition to its wide acceptance by various economic agents as a normal means of operations. Since its introduction, Brazilian producers have extensively relied upon the CPR when seeking production credit. While bank credit is sometimes available, CPRs have provided a viable and reliable alternative for accessing production capital. It is difficult to determine exactly how widely the CPR has been used as many are negotiated privately. Some (primarily financial) issued CPRs are registered by Cetip¹¹⁰. Coffee CPRs registered by CETIP in 2013 corresponded to approximately 7.6% of total issued CPRs for a total value of BRL9.3 million or US\$4 million¹¹¹ for financial CPRs. Figure 6.6 shows the breakdown of registered CPRs by agricultural product in 2013, with soybean (36.1%) and corn (21.4%) accounting for the greatest value of CPRs issued.¹¹²

However, since there are costs to register a CPR, there is also a stock of unregistered, primarily physical, CPRs.¹¹³ As a result, there are no robust data available on the use of CPRs relative to other types of credit. However, people who work in the Brazilian agribusiness sector estimate that CPR represents around 40% of the finance for agriculture. The CPR is one of a number of agribusiness securities in Brazil that have been estimated to total 54% of the formal rural credit supplied in 2013¹¹⁴. There was a lower rate of default on CPRs in the credit market in Brazil (especially for financial CPRs), pointing to the model's sustainability and its low risk.¹¹⁵

¹¹⁰ Cetip is a publicly-held company that offers services related to registration, central securities depository, trading and settlement of assets and securities (<http://www.cetip.com.br/Institucional/security-that-moves-the-market#!>).

¹¹¹ The Brazilian exchange rate (BRL/US\$) in 2013 was BRL2.3420 according to The Institute for Applied Economic Research-IPEA (www.ipeadata.gov.br)

¹¹² Despite its success, the CPR market hit a turning point in 2009 as a result of the international financial crisis. The crisis reduced CPR usage by trading companies. This is evident in the example of soybeans in the state of Mato Grosso According to Pessôa (2012), soybean funding from 2007-2008 was composed of producers' own capital (6%), banks (12%), input firms (32%) and trading firms (49%). By 2010-2011, those shares changed to: producers' own capital (25%), banks (19%), input firms (30%) and trading firms (26%).

¹¹³ Pimentel (2000)

¹¹⁴ Wedekin (2013). The agribusiness securities were created to provide sector finance through private resources. There are five types of agribusiness securities admitted to registration and/or trading on Brazilian Futures Market and Commodity Exchange: Sistema de Registro de Títulos do Agronegócio, Cédula de Produto Rural, Certificado de Depósito Agropecuário/Warrant Agropecuário, Certificado de Direitos Creditórios do Agronegócio, Letra de Crédito do Agronegócio, and Certificado de Recebíveis do Agronegócio (Source: <http://www.bmfbovespa.com.br/home>).

¹¹⁵ Almeida & Zylbersztajn (2012). Soybean research.

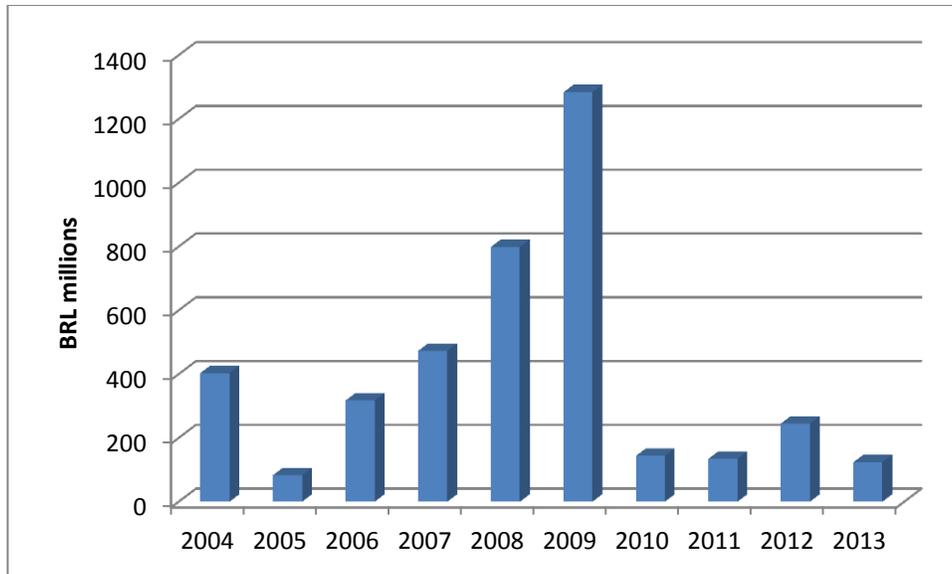


Figure 6.5 - Financial CPR registered by CETIP – 2004 to 2013 – BRL millions (constant prices of 2013)¹¹⁶

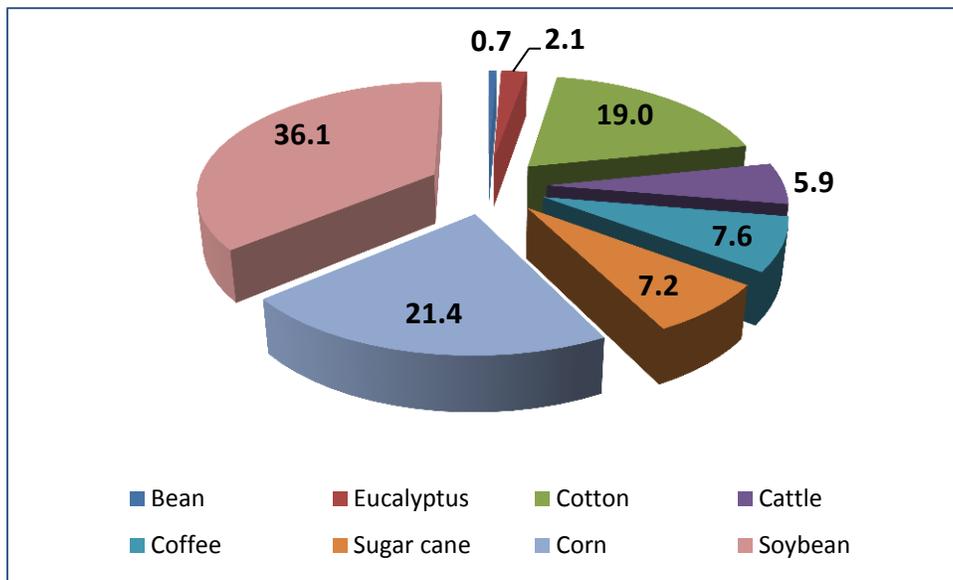


Figure 6.6 – Financial CPRs registered on CETIP – 2013 (% total)¹¹⁷

Research and interviews with producers and cooperatives provided additional evidence as to the CPR’s role, which seems to vary based on the size of the borrower and the ability of that borrower to access credit from the government. While the CPR does serve (among other products) to provide a private credit alternative, significant amounts of funding in Brazil still come from government sources. According to the Brazilian Central Bank *Rural Credit Statistical Yearbook*, federal government banks (including Banco do Brasil) supplied 54.2% of official rural credit in 2012, while private sector financial institutions only supplied 32.5%¹¹⁸.

¹¹⁶ Source: CETIP (<http://www.cetip.com.br/>) and authors’ elaboration

¹¹⁷ Source: CETIP (<http://www.cetip.com.br/>) and authors’ elaboration

¹¹⁸ The other credit suppliers were the state public banks (3.5%) and rural credit cooperatives (9.9%).

Coffee cooperatives provided the most insight into the specific role of the CPR in coffee lending; they play an important role in the coffee supply chain (storing, marketing, processing, economies of scale for input purchases, and negation).¹¹⁹ Accordingly, cooperatives were able to provide perspective as to how and in what ways CPRs were being used. Two coffee cooperatives in the state of Minas Gerais¹²⁰ stated that the CPR is one of the most-used credit instruments for coffee producers in their region, and that producers usually prefer physical CPRs rather than the financial version. Usually, CPRs are negotiated directly with the cooperative so there is little bureaucracy and the resulting deal has lower costs than CPRs negotiated under the terms of Bovespa-BM&F, which requires more guarantees and product specifications.

The choice between utilizing the CPR or traditional credit sources often hinges on the producer's output. Large producers have more knowledge and channels to access private funds for production¹²¹, including CPR, whereas the small producers must rely on resources from the official credit system. However, even small producers will utilize CPRs if the producer has a debt with the bank and cannot get credit from the formal system. In that case, the producer must get credit from some other source, such as a cooperative or input firm, by hoping that they accept a CPR. On the other hand, if the producer has no debt with commercial banks, particularly is the case of coffee producers, there is also the potential at times for the producer to access a cheaper official credit source called Fundo de Defesa da Economia Cafeeira (Funcafe). Based on interviews with a few cooperatives, producers prefer the physical CPR and cash settlement of CPR than cash settlement based on futures prices, and estimate that it represents around 30% of the total credit used. Some of the key factors influencing uptake by the cooperatives interviewed include:

- Transactions costs for the product
- Ensuring that the product meets the requirements of the physical CPR contract
- Other risks such as weather including frost and drought, which can cause a failed harvest¹²²

Another approach to financing that has been attractive to farmers is supply chain financing through input sellers. In this arrangement, input sellers provide all inputs necessary to the crop, and the producers make a commitment to deliver them an amount of product equivalent to the value of the

¹¹⁹ Bialoskorski Neto & Souza (2004). Cooperatives store, process and market (and sometimes roast) a considerable amount of production. Cooperatives also provide greater market power to producers, and reduced production costs through economies of scale. Without the producers union, each producer would bear the full costs of planting, storing, and transporting, which would require significant investments. Working within cooperatives also allows inputs for planting to be carried out on a large scale and often results in discounted prices for inputs.

¹²⁰ Information gathered through interviews by telephone,

¹²¹ Although they also use resources from the official credit system.

¹²² Ozaki (2008) reports the agricultural insurance system implementation has been a claim for a long time in the Brazilian agricultural sector, whereas the current insurance programs to agriculture show strong signs of exhaustion. The author mentions that, "*over the years, government risk management tools, such as, Proagro and some private insurance companies have had unsatisfactory financial results*" (P. 98).

supplied inputs.¹²³ One producer stated that he preferred this type of negotiation to the physical CPR because of the higher interest rate and classification standards associated to CPR.

Box 6.2. Interviewing Farmers on Coffee Financing

To get a perspective on what access to finance and the role of the CPR means for those that work in the sector, farmers were interviewed to learn more about the role of the CPR. One of these interviews was conducted with a producer in the state of São Paulo. His farm produces 1,500 sacks (60 Kg) of coffee on 44 hectares. His production is financed using his own resources. However, he estimated that 60% to 80% of coffee producers use some credit instrument (such as the CPR) and that, on average, producers finance 30% to 40% of the production in his region. This perception contrasts with the results mentioned by Saes et al. (2008); in their research, 98% of the producers answered that they use own resources, 44% looked for bank financing, and 20% turned to cooperatives. CPR was used by 17%, and government resources 10%. The producer's emphasis on the importance of cooperatives as a channel for producer credit was notable. The producers usually issued a physical CPR to the cooperative, as the latter has an interest in receiving the underlying product.

A second coffee grower that producing 800 sacks (60Kg) across 45 hectares in the coffee producing state of Minas Gerais financed 40% of his coffee planting area with credit, mainly for operating expenses. He was introduced to the CPR market by his local Banco do Brasil agency, which guaranteed the credit operations for the producer to the holder of the CPR. This producer has utilized both the physical and cash settlement versions of the instrument. When coffee prices are low, he believes the physical CPR is more appropriate. One disadvantage of the physical CPR, according to this grower, is that the costs associated with the strict quality standards of the contract are all born by the producers. He also emphasized the role of local cooperatives in the CPR market. Despite the presence of the CPR, if producers do not know how to access futures market information or know how to use CPRs, they prefer the formal credit system, and its federally-mandated interest rates.

Lessons Learned

CPR was an important instrument of credit created in time of formal resources scarcity for agriculture in Brazil. The emergence of the CPR helped expand the market for rural credit in Brazil, allowing for greater participation of private funds in the financing of agriculture. In addition, the CPR was successful in the creation of a transparent business environment; a view reinforced by a decline in default rates.

One study that evaluated CPR as an alternative credit for coffee producers in the state of Paraná for the years from 2001 to 2006 concluded that CPR was very competitive relative to other credit sources in terms of cost. However, the interest rates associated with CPR experienced enormous variation, which increased the risk associated with taking a CPR. As a result, the author concluded that the ideal financing option for producers is the use of official credit, complemented by the CPR.¹²⁴ Unfortunately there is little information about the amount of private credit negotiated among producers, cooperatives, and inputs firms, which makes it difficult to get a good picture of the utilization of these different instruments. The information available for CPR transactions is limited to registered CPRs, which

¹²³ This analysis coincides with the results obtained by Rizardi (2007), who did interviews in the state of Paraná with producers, cooperatives, and agribusiness firms.

¹²⁴ Ivanaga (2007)

underestimates the market, especially for the physical CPR. There is no central system to register all CPRs issued by the producers, which creates asymmetric information about the total credit captured among producers, banks, and others economic agents.¹²⁵

The Brazilian credit market is more diversified than in previous decades in which credit was concentrated on public resources. On the other hand, since 2002 the amount of credit supplied by the formal system (which has controlled interest rates) has recovered the level close to that observed in the past; some producers prefer this credit channel as the proceeding to get credit on this way is less bureaucratic and the risk is relatively lower than the other options. In this context, CPR still is an attractive and widely-used instrument. However, this research verified some constraints related to CPR: some producers report that it has been expensive and bureaucratic relative to other credit options (i.e. the formal credit system and exchange input negotiations). Some producers consider that the negotiations with CPRs over lower costs (reduced interest rate) are more bureaucratic, leading them to prefer accessing finance from input providers.

Farmers still see the CPR as an important instrument of credit, although compared with previous periods there are now other competitive sources of credit. Some farmers, especially small farmers, can access other publicly supported sources of affordable credit, while for large farmers, opportunities related to agribusiness securities offer additional sources of credit. Since the CPR in effect competes with other credit instruments, it is perceived by some that improvements could increase its competitiveness, such as a reduction in bureaucracy / red tape (from the producers' perspective)¹²⁶ on CPR issues and a reduction in the financial costs.

¹²⁵ Almeida and Zylbersztajn (2012) highlighted some benefits from CPR: it is an asset with lower risk; it has warranty and can be negotiated on financial markets; and its characteristics promote lower risks, in turn reducing the chance of default. On the other hand, the authors mentioned certain disadvantages of CPR. The resources allocated by banks to buy CPRs compete with other economic markets and the resulting higher internal interest rates lead the producers with lower profitability to choose another credit source, which reduces the amount of CPR negotiated and the market attractiveness for investors. Additionally, there is not a central system to register all CPRs issued by the producers, which creates an asymmetric information about the total credit captured among producers, banks and others economic agents.

¹²⁶ To issue a CPR (under the terms of Bovespa-BM&F and to have the guarantee of Banco do Brasil) the producer should follow some requirement to register the contract, as with any other loan, and the product negotiated should conform to the characteristics defined in the contract.

Case Study 13: COMRURAL Honduras – Crowding in Commercial Banks Through Matching Grants

Introduction

The Honduran coffee sector accounts for almost 5% of GDP and is the main export crop, totaling 17% of national exports. Honduras is home to approximately 100,000 coffee farming families and the sector accounts for almost 1 million jobs in maintenance, harvesting, marketing, processing, and other related activities. Around 95% of coffee farmers are smallholders producing less than 10 MT a year. Coffee is grown in the majority of districts in Honduras, and is the main economic activity in several of them. As such, the health of the Honduran coffee sector is of tremendous importance to the country. For example, the 2012/2013 harvest was badly affected by both a fall in international prices and an outbreak of rust. These factors combined to generate a fall of 21.4% in foreign exchange earnings (US\$637 million) and the loss of around 100,000 jobs.¹²⁷

However despite its economic (and social) significance to Honduras, financing to the agricultural sector has continued to decline in recent years; in 2000, the share of agriculture in total commercial bank lending was 21.6%, however by 2010 this had fallen to 4.6% and declined further in 2011 to 3%. The financing of the agricultural sector is also concentrated across just a few commercial banks with seven of the 17 banks operating in Honduras providing 92.8% of total credit to the sector (2011)¹²⁸. As such it is apparent that Honduran agricultural producers, including coffee growers, face significant challenges in accessing financing from banks to support investment in their production.

In addition to the lack of available bank financing, public investment in agriculture in Honduras has also come under pressure. In 1990, the proportion of government spending in the agricultural sector was 11% but this declined to around 3.5% over recent years. Given a decline in government funding, one might expect that farmers would be forced invest more in their enterprises to make up for the reduction, however this requires access to finance, which is not readily available.

This case study considers the Rural Competitiveness Project (COMRURAL)¹²⁹, which aims to increase productivity and competitiveness among organized rural small-scale producers through their participation in productive alliances. The project (implemented by the Honduran government and financed by the World Bank) works to assist producer organizations in building their productive value-chain alliances, and it also provides assistance in financing investment in producer enterprises so that they can increase their productivity and generate higher incomes for their members. Of specific interest is the role of COMRURAL in supporting coffee sector producer associations and cooperatives in investing in their enterprises and supporting them in accessing private sector bank finance through the use of matching grants.

This case study shows how commercial banks, which have historically shown a reluctance to lend longer-term to the coffee sector, can be encouraged and “crowded in” to the sector by the provision of grants to

¹²⁷ Honduran Institute of Coffee

¹²⁸ Honduran Association of Banking Institutions

¹²⁹ Details of COMRURAL can be found on the World Bank website: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2008/05/22/000333037_20080522010139/Rendered/PDF/435390PAD0P10117376B01OFF0USE0ONLY1.pdf

support longer-term finance to fund investment¹³⁰. In addition, it demonstrates how the provision of technical assistance to cooperatives and associations to assist them in drafting credible and creditworthy business plans can facilitate these groups in accessing finance from commercial banks.

Overview of the COMRURAL Project

COMRURAL operates through a competitive selection process. The cooperatives and associations that wish to participate in the COMRURAL project have to prepare a business profile, outlining the current operations of the cooperative while detailing their objectives and the ways in which they will utilize the investment. A selection committee evaluates the business profiles, with those selected then receiving technical assistance to prepare viable business plans, detailing how they will invest in their enterprises and expand their productivity and revenues. The business plans contain information on all aspects of the proposed project including technical, commercial, social, environmental, and financial viability, and risk management; all within the wider scope of the productive alliance within the framework of the relevant value chains. For business plans to be accepted by COMRURAL, they must demonstrate that they are based upon a clearly defined market opportunity, they address the training needs of the cooperatives/associations, and that they will boost private investment under a system of shared risk and mutual benefits among the players. Throughout the project, the cooperative will continue to receive support and technical assistance from business development service providers under contract with COMRURAL.

Financing of the Business Plans of Associations and Cooperatives

The financing of the business plans is carried out through a combination of private and public funds. COMRURAL (drawing upon public funds) provides the cooperative with up to 60% of the total cost as seed capital financing, which is non-refundable. Another 30% of funds come from a loan from one or more private financial partners, and the cooperative must contribute at least 10% of total costs. As such the public funds are only available if the cooperative can provide financing and has access to commercial bank financing.

Use of Resources/Funds

Participation by cooperatives in the COMRURAL program also specifies how funds can be utilized. Just over 20% may be allocated for use in technical assistance, training, and developing/strengthening relationships within the value chain, while around 70% should be used for investment in infrastructure and productive capacity (productive investment). Around 10% of the remaining funds should be utilized for project management and operational costs. Productive investment refers to investments in washing stations, processing plants, warehouses, fixed capital, equipment, buildings, machinery, technology, inputs, fertilizers, pesticides, fungicides, farm infrastructure, and technical assistance and training, among others. The funds received from COMRURAL are in the form of grants and cannot be used to purchase land or to repay existing debts i.e. they must be used to support new investments.

The grant is dependent upon the cooperative or association receiving a loan from a commercial bank.

¹³⁰ The private sector provides around half of the financing of the business plans, with the public sector financing covering the other half

Obviously the grant, alongside a robust business plan, is an incentive for a bank to provide financing, as investment is partially covered by the grant amount; this is in effect a means of “crowding in” bank lending through the use of a non-repayable grant. The loans are made by the banks on purely commercial terms and the banks obviously need to assess the business plans and the proposals using their own rigorous credit risk assessment processes. Loans will be used to finance with preference productive investment and the banks ultimately take autonomous decisions about requests for credit, based on market criteria, with banks determining the loan size and terms based upon their assessment of the current and future payment capabilities of the participating cooperative. Similarly, interest rates are determined between the bank and the cooperative and are market based.

COMRURAL and the Honduran Coffee Sector

The COMRURAL project was not coffee specific and was available to cooperatives and producer associations across a wide spectrum of sectors. However, a number of the participants in the program were cooperatives involved in the Honduran coffee sector. This case study details a COMRURAL project involving a coffee sector cooperative and it demonstrates how the provision of a matching grant was used to encourage commercial banks to lend to coffee cooperatives for investment purposes.

CAPUCAS and the COMRURAL Project

The coffee cooperative CAPUCAS is located in the community of Capucas in the municipality of San Pedro de Copán, western Honduras. Land in the area is ideal for coffee production due to high quality of soils, good climatic conditions, and a topography suited to the production of high-quality coffee. CAPUCAS was organized as cooperative in 1999 with 55 members and today has more than 700 members, mostly drawn from among small and medium-sized farms. The cooperative produces around 181 metric tons of green coffee each year. The cooperative has focused its efforts on the production and commercialization of micro-lots of specialty coffees, which generate a substantial positive price differential, raising member incomes significantly over standard grade coffee. As such, all coffee produced is separated according to the area of production, the type of soil, microclimate, topography of the land, height and varieties, the state of maturation of grain, and harvest time. This ensures the coffee can be marketed and sold as specialty micro-lots based on potential flavor and different characteristics according to each of the variables described.

However, CAPUCAS has faced a significant challenge due to the recent outbreak of rust infestation. A rust outbreak resulted in reduced yields and lower quality coffee, reducing the specialty premium available (cupping quality had fallen significantly). CAPUCAS identified that the means for tackling rust was to invest in both coffee plant rejuvenation and in extension services to ensure improved crop management, improved application of fungicides, and (where appropriate) greater diversification.

Under the COMRURAL program, CAPUCAS compiled a business plan focused on the improvement of production and alleviation of the harm caused by the outbreak of rust, and on ensuring the continued production of high-quality, high-priced specialty coffee. The objective of the project was to reinforce the production of specialty coffee while ensuring social and environmental responsibility. This project built upon the history of sustainable coffee production at CAPUCAS, which was already producing certified coffee (Rainforest Alliance; Fairtrade; UTZ; Starbucks Café Practices). Investments to be financed under this program included the construction of a center for organic processing of coffee, maintenance of farms, the purchase of a solar dryer, and expenditure on technical assistance/extension services for members.

The investment in the organic processing center enabled the cooperative to start offering members attractively-priced non-chemical organic inputs. This investment is speedily bringing benefits to the members: reducing production costs, improving soils, spurring better practices to deliver higher quality, and boosting the amount of organic coffee sold, which also brings a significant price premium. More and more members are moving their production to organic coffee, with 85% of the production of CAPUCAS now produced organically.

CAPUCAS reports that the expansion of organic processing has also assisted its membership in managing the outbreak of rust. They report that the reduced costs of inputs generated by the organic processing have lowered the costs of dealing with such diseases, and that the better practices adopted following the increased access to extension services have made the plants more resilient to pest and disease.

Business plan implementation was reliant on accessing finance from a commercial bank (as per the COMRURAL program approach, a failure to secure commercial bank financing would result in the grant funds being withdrawn). To this end, CAPUCAS obtained financing from Banco de Occidente at an annual interest rate of 14% per year over a period of five years. The bank required collateral to secure the loan and the cooperative provided security through the land titles of cooperative members. Currently, this is the only loan with a local bank but they have credit lines and contracts with international importers that buy coffee in advance. In the past, CAPUCAS had loans with other banks; e.g. Banhcafe, Banpais, and coffee processor BECAMO, and also with Banco de Occidente. However, its inclusion in the COMRURAL project and the resulting detailed business plan and matching grant, helped secure a longer-term loan over five years for investment purposes. The loan from Banco de Occidente provides 43% of the total project costs, 26% coming from CAPUCAS's own resources and 31% from the COMRURAL grant. The total value of the project was US\$1.24 million.

While CAPUCAS had already established earlier relationships with commercial banks for loans, there are many examples from COMRURAL of coffee (and other) agricultural cooperatives receiving loans for the first time from commercial banks, including longer-term loans. For example, COCASJOL is a small Honduran coffee cooperative of just 200 members that had never previously accessed finance. Through the COMRURAL project, it was able to access a five-year loan of approximately US\$300,000 that it utilized to on-lend to members for tree replanting following the outbreak of rust and for assisting members in diversifying into other less volatility commodities (including honey).

Coffee Sector Lessons From COMRURAL

A comprehensive business plan, developed with technical assistance, is a prerequisite. The banks were able to accurately assess each proposal to a large extent due to the high quality business plans that were prepared. In addition, the competitive selection of cooperatives to participate in the COMRURAL program helped ensure that the proposals presented to banks were the most credible and financially sound, and therefore ultimately were also attractive to bank loan officers.

Public sector funds as grants can be effective in crowding-in longer term private sector financing for coffee sector enterprises. The grant element assists cooperatives in undertaking programs that would be much more challenging should they required full private sector financing. This enables cooperatives to provide essential support services including extension, research, and technical assistance to its membership, while borrowing from banks primarily to fund infrastructure. The investment in both support services and infrastructure enabled the development of stronger and more sustainable projects with a much greater chance of success.

A value chain approach to projects ensures that those investing in developing production and productivity are also focused on ensuring access to markets. This enables these projects to succeed as marketing channels are secured alongside production, and gives lending institutions reassurance about the robustness of the business plans.

This approach can work for cooperatives that have never accessed bank financing before as well as those that have. While CAPUCAS had existing banking relationships, COCASJOL had never previously accessed bank financing. This demonstrates that these programs have potential for the less established or smaller cooperatives. As long as a cooperative can show a credible and compelling business plan, the banks appear willing to lend, where previously they may have been reluctant. A large part of this is no doubt due to the business advisory services provided to the cooperatives in preparing their business plans, the inclusion of marketing/value chain elements alongside production infrastructure, and to an extent the use of the public sector grants to cover additional project activities that make the projects more sustainable and achievable.

The coffee cooperatives involved in COMRURAL have all invested in extension services to support the investment in production, quality, and infrastructure. The link to good agricultural practices goes hand-in-hand with the investment in production equipment, ensuring volumes of coffee sufficient to maximize returns on the investment.

To date, the coffee cooperatives participating in COMRURAL have all repaid their loans in a timely manner. This is impressive bearing in mind the challenges that they are facing in dealing with the outbreak of rust. Further analysis over time will confirm whether this repayment record is maintained. If it is, it will suggest that this comprehensive approach to business planning, public sector grants, and private sector loans offers a promising means of increasing investment by coffee cooperatives on behalf of their membership.

Case Study 14: De-risking the “Missing Middle” – the Case of Root Capital, a Socially-Oriented Lending Institution

Overview

This case study considers the experiences of Root Capital, a nonprofit social investment fund, in its financing of coffee sector cooperatives. Root uses alternative approaches to provide financing to cooperatives that are unable to access finance from commercial banks, or cannot access sufficient loans, or loans of sufficient duration and appropriate terms for investment purposes.¹³¹

About Root Capital

Root Capital is a nonprofit social investment fund that delivers credit, typically ranging from US\$50,000 to US\$2 million, as well as financial training to agricultural businesses aggregating smallholder farmers in Latin America and Africa. Its ultimate goal is to help improve rural livelihoods and promote environmentally sustainable agricultural practices. Root Capital’s clients include producer associations and private businesses that source and/or process agricultural products for both export and domestic markets. As of the first quarter of 2014, Root Capital had disbursed more than US\$659 million in credit to 504 businesses across 30 countries since its inception in 1999.

Most of Root Capital’s borrowers fall into a ‘missing middle’ within the financial services sector, in that they are served neither by microfinance institutions (MFIs) nor commercial banks for a combination of reasons, including common perceptions that the agricultural sector is inherently high-risk, low-return and the basic challenge of reaching remote rural areas. Financial institutions that do lend to agricultural businesses in rural areas generally have rigid hard collateral requirements that exclude all but the most formal and best-capitalized businesses.

To reach businesses in this missing middle while appropriately mitigating risk, Root Capital uses an innovative value chain approach that includes the following key components:

- Evaluation of collateral based on businesses’ future sales (purchase agreements) rather than their existing assets. Typically the borrower is eligible for a loan of up to 60% of the value of the signed agreements. The purchase agreement, in effect, becomes the collateral – a discrete, future revenue stream pledged by the borrower to repay Root Capital’s loan.
- ‘Staggered’ lending, in which Root Capital offers progressively larger and/or more complex loan products to long-time clients as they build their credit history and asset base. This enables Root Capital to ‘grow with the borrower’ while managing risk.

¹³¹ Many of Root Capital’s coffee clients are able to access commercial capital; about 66% of Root Capital coffee borrowers also had access to commercial bank finance in 2013. However, even for businesses with access to commercial capital, Root Capital is often supplementary in terms of the structure and/or type of loans that they offer. For example, many coffee clients can access short-term loans from commercial banks, but not long-term loans for investment purposes. In addition, many clients who, prior to working with Root Capital, may have been unable to access commercial financing are subsequently able to do so, as they have built a credit history through their Root Capital loans and/or now have the systems required to successfully apply for a commercial facility through Root Capital’s financial management training.

Root Capital and Lending to the Coffee Sector

Root Capital made its first loan in 2000 to a coffee cooperative in Guatemala. The specialty (i.e., premium quality and/or certified) coffee sector continues to account for the bulk of Root Capital's lending, although the lender has since diversified into other agricultural industries, primarily cocoa, cashew, and quinoa, as well as non-agricultural industries, such as handicrafts and wild fisheries. As of the end of March 2014, Root Capital had cumulatively disbursed over US\$490 million to just under 300 coffee businesses, primarily producer cooperatives, in Latin America and Africa. In 2013, roughly 65% of Root's lending, representing US\$78.1 million in disbursements, was to coffee sector enterprises.

Root Capital's entry into the coffee sector was in part facilitated by financing the supply chains of Starbucks, Keurig Green Mountain, Equal Exchange, and other leading coffee roasters. This approach enabled Root to significantly expand its outreach in a timely and effective manner. The advantages of working with businesses with pre-established relationships with leading coffee buyers include:

- Acceleration of client identification, as the buyer can refer the cooperative to Root Capital, rather than the latter having to seek out the cooperative;
- Simplified due diligence, as the buyer can act as a reference;
- A credible buyer is already in place: the producers are already in established relationships with pre-approved buyers, thereby enabling purchase agreements to be taken as a form of collateral.

This is a mutually beneficial arrangement as the buyer is able to facilitate seasonal finance to its cooperative suppliers, which improves the performance of the cooperative and assists in ensuring delivery of contracted coffee.

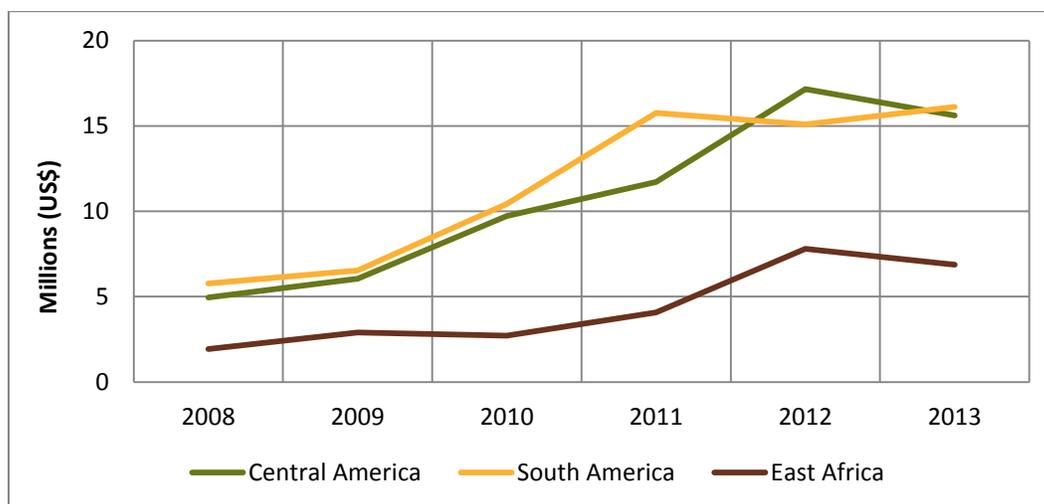


Figure 6.7 - Average portfolio balance in coffee by year – 2008-2013¹³²

Loan Maturity

During 2013, 71% of disbursements¹³³ consisted of short-term trade credit loans with terms of up to a year, generally based around a single harvest or production cycle. This product addresses the cash constraint coffee businesses experience between the time they purchase coffee from producers and receive payment from buyers several months later. Root Capital accepts signed purchase agreements as

¹³² Source: Root Capital

¹³³ Actuals 2013 – data provided by Root Capital

a form of collateral where a business would normally need to give hard collateral such as land titles or liens on infrastructure. (For businesses working in domestic non-coffee value chains, in which they are unlikely to have purchase agreements from a major global buyer, Root Capital will take hard collateral if it is available.)

The remaining 29% of disbursements were in the form of longer-term capital expenditure loans¹³⁴, with maturities of up to five years, that allow enterprises to invest in value-added services or equipment that can lower production costs and raise product quality.

Figure 6.8 shows the growth of Root Capital’s lending in coffee since 2002-2013, disaggregated by the industry and loan duration.

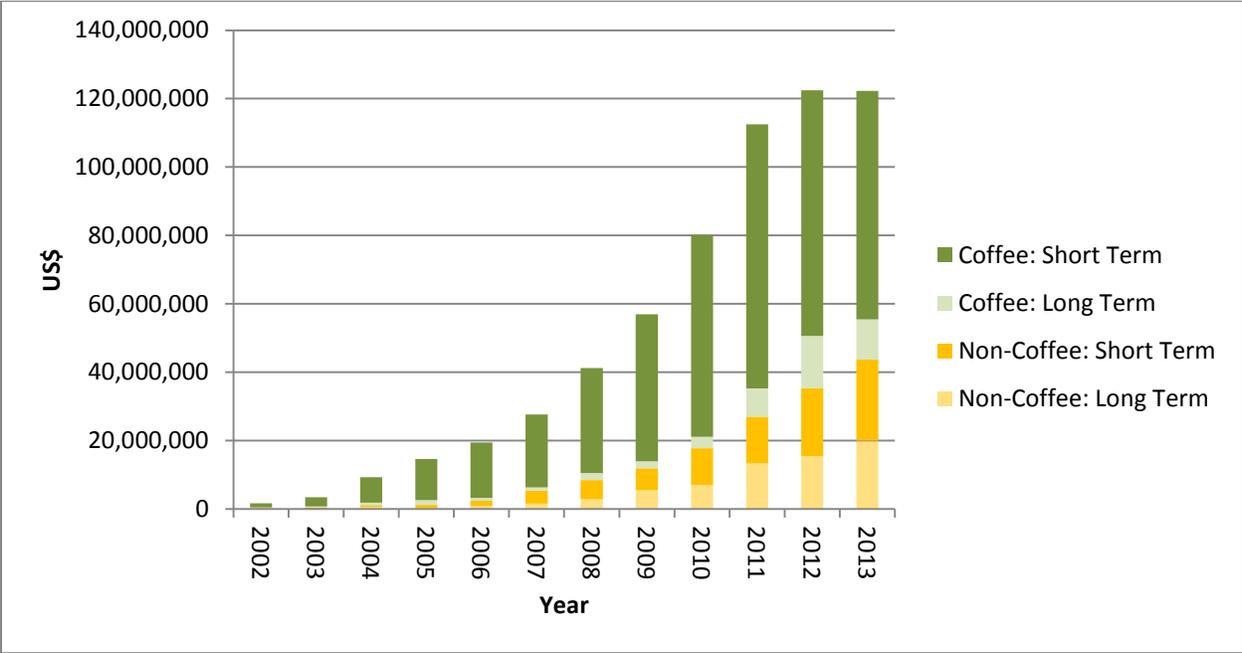


Figure 6.8 – Portfolio, coffee and non-coffee – 2002-2013

¹³⁴ Actuals 2013 – data provided by Root Capital

Components of Root Capital's Value Chain Approach: The Use of Purchase Agreements as Collateral

Root Capital delivers credit through a form of value chain finance to manage risk. Lending to smaller rural cooperatives presents a number of challenges for financial institutions, both banks and non-banks. For example, coffee cooperatives generally have limited collateral, weak and/or inexperienced management teams, and organizational structures that at times can prevent effective managerial control and decision making. Collateral in particular is generally an important prerequisite for commercial financing.

To overcome this challenge, Root Capital (and other socially-oriented lending institutions) use purchase agreements as a replacement for fixed asset collateral. The premise is that the contract between a coffee buyer (importer or roaster) and seller (coffee cooperative) acts as a replacement for collateral. Typically the borrower is eligible for a loan of up to 60% of the value of the signed agreements to secure coffee from its members, process it, and deliver it to port. To this end Root Capital has worked with over 100 coffee buyers, ranging from small specialty traders and roasters to multinationals, to facilitate lending.

Clearly the value of the contract depends on whether the contract will be fulfilled by the cooperative, and as such, the lender will usually spend a significant amount of time understanding the strength of the value chain. This analysis occurs at two levels:

- Root Capital evaluates the relationships between the client and its buyers, taking into consideration how long the parties have worked together, whether product rejections have occurred, and the nature of the contract between them and the reputation of the buyer, among other factors. The stronger the relationships, the more likely the chance of contract fulfillment and the greater the value of the security that the purchase agreement provides.
- Root Capital also evaluates the strength of the relationship between the cooperative and its suppliers. A strong relationship between an enterprise and its producer suppliers indicates that value is being delivered by the enterprise. All else being equal, this will reduce the risk both of producer side-selling and enterprise default on delivery of contracts and loans. Integrity and transparency of management, while difficult to measure, are also important to gauge the balance between the management's capacity and license to operate as well as producer oversight and buy-in.

Repayment flows through a triangulation agreement. An interesting element of the lending methodology utilized for export-oriented commodities (such as coffee) is the use of the tripartite lending structure. This structure is highly effective in reducing the risk of non-repayment as it ties the lending approach into the flow of the coffee, and ultimately adds to the strength of the relationship between buyer, producer, and lender. This model has been used for a number of years by many of the socially-oriented lending institutions and has been shown to be effective in raising the level of repayment over and above a direct loan to a cooperative without such a structure.

Under this agreement, Root Capital is paid directly by the buyer when the product is shipped; the principal and interest recovered and the remainder remitted to the client. The process is formalized with a triangulation agreement signed by the buyer, supplier, and Root Capital, which lays out the responsibilities and obligations of each party and the repayment mechanism. The triangulation arrangement is detailed in Figure 6.9.

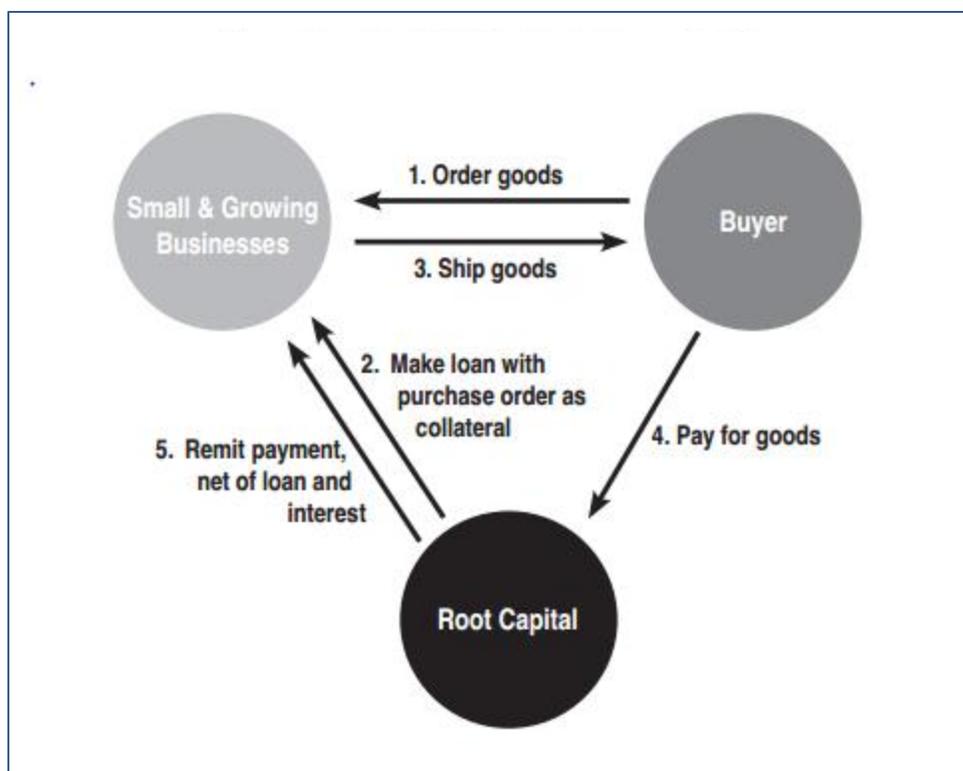


Figure 6.9 – Root Capital’s Value Chain Finance Model¹³⁵

The critical elements of success with such a tripartite arrangement are that:

- The loan total should never exceed the total value of the physical coffee contract. For contracts that are Price-to-Be-Fixed, the lender may choose to lend only a minimum sales value of the contract to ensure that the loan never exceeds the total contract value;
- Loan maturity is directly related to the delivery of the commodity (the coffee);
- Payment for the coffee on receipt by the buyer is made to the lender, rather than directly to the borrower (the coffee cooperative), significantly reducing the risk of funds being diverted and the loan not being repaid.

The tripartite arrangement ensures that, as such as long as the commodity (in this case the coffee) is delivered to the buyer and meets the standards defined in the contract, the lender (Root Capital) will receive sufficient funds to satisfy repayment of the loan.

The process of building a relationship with clients, critical to the alternative lending approach of Root Capital, also allows the loan officer to assess the technical assistance needs of the enterprise and identify opportunities to build enterprise capacity. Areas of weaknesses identified during the due diligence process can be addressed through Root Capital’s Financial Advisory Services (FAS)¹³⁶ program or in certain cases, through Root Capital coordinated third-party agronomic assistance. In 2013, the FAS

¹³⁵ Source: Devaney, PL (2011), Global Agricultural Value Chains: Sustainable Growth as a Means for Sustainable Development, Community Development Investment Review – Federal Reserve Bank of San Francisco

¹³⁶ More information on the Financial Advisory Services Program can be found on the Root Capital Website: <http://www.rootcapital.org/our-approach>

program provided financial management training to 296 enterprises¹³⁷. Common training topics, delivered through a combination of workshops and one-on-one engagements, included accounting, financial planning, financial risk management, financial statement analysis, and loan application preparation and credit management.

Growing with the Client: ‘Staggered’ Lending

The value chain approach leveraging purchase contracts utilized by Root Capital is a means of overcoming the challenges that financial institutions (both banks and non-banks) encounter when lending to smaller rural cooperatives. The use of purchase agreements alone, however, cannot fully overcome collateral issues facing this sector. Cooperatives often require financing above seasonal coffee trade requirements. Cooperatives wishing to expand their range of services for their membership will require funds for investment in storage, transportation and logistics, processing, marketing, and quality. In most situations the cooperative will be unable to retain sufficient earnings from each coffee season to finance these investments themselves. In these cases, the lender and the cooperative will need to find alternative mechanisms for providing financing.

‘Staggered’ lending describes the approach followed by Root Capital to deepen its relationship with its borrowers, while appropriately managing risk. This approach enables Root Capital to provide more complicated forms of finance over time, above and beyond seasonal finance against purchase agreements. It relies on improving the mutual relationship and understanding between lender and cooperative. In essence, as Root Capital works over several seasons with a cooperative, its management, and its membership, it is able to better understand the business and its strengths and weaknesses. Root therefore has much greater insight into the realism of the strategy the cooperative is operating against and is able to identify how (and if) they may increase their financing of the enterprise.

In this approach, Root Capital uses a series of ‘gateposts’ allowing a cooperative to progressively qualify for more complex and riskier loans. To illustrate:

- A. When first working with a coffee business, Root Capital generally starts with a lower risk, simpler loan product, such as a short-term trade credit loan that involves using a signed purchase agreements with the enterprise and its international buyers as the main security in lieu of traditional collateral (as described above).
- B. As the enterprise grows stronger in terms of key financial indicators such as export volumes, net profit, equity base, and credit history, Root Capital can extend more complex loans, such as pre-season finance for input distribution to producers. The borrowing base for these loans may be letters of intent, generally considered less secure than purchase agreements.
- C. Finally, as the business builds its credit history and asset base, Root Capital may provide long-term capital expenditure loans based on the proven client-Root Capital relationship. In the case of coffee, this could include loans for equipment and infrastructure such as wet mills, warehouse and office space, organic composting facilities, and for inputs for the replanting (renovation) of aging or diseased coffee farms (a particularly risky endeavor, but also one with high impact potential).¹³⁸

As highlighted in the following borrower examples, there are significant needs at the cooperatives related to pre-harvest, capital expenditure, and renovation and the challenge is to find a means for

¹³⁷ Root Capital Performance Report: Q4 2013, P.2

¹³⁸ Root Capital currently undertakes work in this area under the [Coffee Farmer Resilience Initiative](#).

working with the borrowers (and their buyers where appropriate) to build a relationship that enables such needs to be fulfilled in a sustainable manner.

The following examples of three coffee cooperatives that received financing from Root Capital demonstrate the evolving nature of the relationship between a cooperative and Root Capital, and how a relationship that commences with the financing of coffee contracts between the cooperative and its buyers can evolve into a more complicated set of financing arrangements based upon a growing trust between the lender and the cooperative.

Box 6.3 Musasa: Enabling Investment in Infrastructure and Equipment

In 2005, Root Capital extended an initial loan of US\$90,000 to the Rwandan Musasa cooperative. In the aftermath of the 1994 genocide, devastated communities in Rwanda's coffee-growing regions struggled to rebuild. Formed in 2004 by 1,702 growers (350 of them women), Musasa lacked access to capital that would allow the cooperative to collect all of its existing producers' coffee, let alone expand membership. Despite the obvious risks of lending in a post-conflict region, the agricultural lender identified several strengths that indicated a creditworthy client, including:

1. *A committed management team* governed by a democratic, transparent general assembly of cooperative members invested in the enterprise's success
2. *Reliable product off-take in the form of reputable buyers* including international traders Volcafe Specialty Coffee and InterAmerican Coffee, whose client list included Starbucks and Keurig Green Mountain
3. *A strong supporting ecosystem of technical assistance providers, certifying bodies, and government agencies* to offer support in areas such as governance and operations

By scheduling multiple disbursements (with an initial distribution of US\$20,000), Root Capital managed its initial risk. The lender was able to fully monitor inventory build-up, price risk management, and other indicators of financial health over the course of the loan.

Root Capital scaled and expanded its loan offerings to Musasa since 2005 by leveraging financial training and the enterprise's credit history. Since 2005, Root Capital has lent more than US\$2.6 million to Musasa. In addition to progressively larger trade credit facilities, the improved capacity of the cooperative (aided in part by a 2012 Financial Advisory Services workshop) has allowed Root Capital to extend three long-term loans for US\$25,000, US\$30,000, and US\$87,000 in 2007, 2012, and 2013, respectively. The first two loans were used to purchase trucks to improve logistical efficiency, while the third was used to purchase a coffee dry mill that will deliver efficiency and time-savings. While the first capital expenditure loan was secured with the asset it financed (the truck) in addition to the coffee contracts, the subsequent capital expenditure loans have covered all existing physical assets. In essence, Root Capital has helped Musasa build up an asset base against which the lender can make additional loans for continued investment and enterprise growth.

Box 6.4 COOMPROCOM: Supporting Cooperative Microloan Programs

Since January 2010, Root Capital has provided US\$1.98 million in trade credit financing in order to facilitate the coffee cooperative's continued growth and service delivery to its membership.

Cooperativa Multisectorial Productores de Café Orgánico de Matagalpa (COOMPROCOM) is a primary-level Nicaraguan coffee cooperative formed in 2002. Given its relatively small size, remote location and lack of traditional collateral, such as fixed assets or titled land, COOMPROCOM has lacked access to commercial bank financing. From its founding in 2002 through 2010, COOMPROCOM twice received financing from its buyer so that it could pay its members at the time they delivered their coffee. That financing dried up in 2009, however, and COOMPROCOM turned to Root Capital.

After COOMPROCOM repaid its first trade credit loan, Root Capital deepened its engagement by extending a pre-harvest credit facility to support the cooperative's microloan program. By providing US\$100,000 in pre-harvest credit to the cooperative in 2011 (subsequently raised to US\$150,000 in 2012), Root Capital enabled COOMPROCOM to forward small sums on to its membership for household expenses and farm-level investments. While a loan of this type involves more exposure to agricultural risk than a simple trade credit loan, it can have a significant impact on a smallholder's well-being. These small advances of money help farmers smooth their otherwise uneven annual income and invest in their farms before the harvest begins. Microloans are especially important for COOMPROCOM's most economically vulnerable members, who experience food insecurity and other economic challenges during the "meses flacos", or lean months, when they earn no income but must still pay their daily expenses.^a

In order to further reduce the risk associated with this form of lending, Root Capital coupled financing with the provision of financial advisory services. COOMPROCOM currently participates in Root Link, a targeted Root Capital financial training program that helps strengthen cooperatives' microloan programs. While such training does not guarantee repayment, it strengthens the cooperative's loan management system and therefore reduces Root Capital's risk.

^a2013 impact assessment conducted by Root Capital

Box 6.5 UNICAFEC: Long-term Loans For Coffee Renovation

In 2013, Root Capital approved a five-year, US\$300,000 coffee farm renovation loan for Asociación Unión de Cafetaleros Ecológicos (UNICAFEC). The association had been a Root Capital client since 2006, when it accessed non-buyer financing for the first time in the form of a US\$100,000 short-term trade credit loan to finance its growth. Since 2006, the banking relationship had steadily strengthened through transparent communication and consistent repayment, and by 2010, Root Capital felt comfortable extending two alternative loan products to UNICAFEC: a US\$100,000 pre-harvest credit to capitalize the association's internal credit fund for on-lending to producer members, and a US\$280,000 capital expenditure loan for the construction of cooperative facilities. Meanwhile, total exposure to UNICAFEC hovered near US\$2 million with the association's \$1.8M in short-term trade credit received in 2013.

Despite the significant exposure, Root Capital felt comfortable making a five-year renovation loan for several reasons:

- *Acceptable administration of the cooperative's microloan fund.* While UNICAFEC must improve certain components of its internal credit fund management, its overall governance, strategic planning, and processes and information systems are adequate to manage a loan. Moreover, as part of the coffee farm renovation loan, UNICAFEC has committed to continuing to work with Root Capital's Financial Advisory Services team to improve areas of weakness.
- *Strong agronomic capacity.* Because the loan will be used to rehabilitate and renovate cooperative members' coffee plantations, it is important that UNICAFEC have an agronomic team capable of supporting members' replanting efforts. In addition to an experienced agronomic staff, Root Capital is partnering with a third-party agronomic technical assistance provider to assist, monitor, and report on progress.
- *Adequate fixed collateral.* Over the last several years, and in part due to loans made by Root Capital to UNICAFEC, the cooperative has invested in and accumulated physical assets against which Root Capital can now secure this multiyear loan. In the case of the present loan, Root Capital will take first position on the cooperative's land and offices worth a total of US\$519,000.

Case Study 15: Warehouse Receipt Systems in the Coffee Sector – African Experiences

Overview

This case study reviews lessons learned from the promotion of warehouse receipts in a number of countries as a means of facilitating access to finance and income smoothing by eliminating forced early season selling when prices may be at their lowest. With the exception of Malawi, the use of warehouse receipts has not really gained traction mainly, it would seem, because of an inability to match contractual and logistical requirements with small farm realities and preferences (which, it must be said, is not easy). In Kenya and Tanzania however, warehouse receipts are allowing cooperatives and other entities (such as commercial estates) to raise finance against coffee stocks awaiting final processing and sale for export. The actual process is not very different from the conventional collateral management possibilities that were already available. The main lesson however is that for purposes of income smoothing or to avoid forced early selling, warehouse receipt systems alone are not sufficient unless linked to the ability to hedge the price risk or sell the goods forward. Otherwise growers remain fully exposed to price risk and, certainly in the case of coffee, price volatility may work against them.

1. Background. In 2001 the International Coffee Organization (ICO) and the Common Fund for Commodities (CFC) initiated a joint project to develop warehouse receipt systems (WRSs) in selected African countries that would:

- Promote privately-run warehousing systems
- Establish warehouse receipt systems
- Adopt criteria for selecting warehouses and operators
- Facilitate the promulgation of supportive legislation
- Develop basic market information and quality assurance/certification systems
- Develop a system of commodity trade finance based on inventory collateralization using WRS

The rationale was that with the opening of markets and the liberalization of trade, instruments such as warehouse receipts have become important in the transition to markets, serving to reduce uncertainty and enhance efficiency. For a WRS to work well, government and industry must build a legal and institutional framework to guarantee performance and minimize transaction costs. Warehouse receipts, also known as inventory credits, can facilitate finance for inventory or products held in storage. These receipts (or warrants), when backed by legal provisions that guarantee quality, provide a secure system whereby stored agricultural commodities can serve as collateral, be sold, traded, or used for delivery against financial instruments, including futures contracts. In this context, warehouse receipts are transferable documents of title that state the ownership of a specific quantity of products with specific characteristics and stored in a specific warehouse. The receipts represent secure collateral and as such should enable farmers, processors, and traders to mobilize credit. ¹³⁹

Access to this kind of financing mechanism is important because a lack of access to credit for a range of productive purposes is a severe constraint for many farmers, especially smallholders. Often this is

¹³⁹ For a detailed overview of a typical WRS system see:

<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTARD/0,,contentMDK:20440946~pagePK:210058~piPK:210062~theSitePK:336682,00.html>.

further exacerbated by forced early selling of agricultural commodities at peak harvest times when prices are low, and in the case of coffee, sometimes when the crop is still on the tree. While WRS most likely was designed to address this risk of forced early selling, such systems can also assist towards more orderly and transparent marketing as well as improved access to short-term finance.

However, given that coffee ages during storage it should be sold before it starts to lose quality, WRS can only be used to fund short-term credit needs, and not the longer-term investment that so many growers need but cannot obtain. In contrast to maize farmers, many small coffee growers cannot provide the minimum volumes most WRS operators insist upon for reasons of efficiency, making the system more suitable for aggregators such as cooperatives or farmer associations. Nevertheless, it is generally accepted that in agricultural value chains WRS can be an important potential tool for creating liquidity and easing access to credit, as well as smoothing supply and market prices and in so doing improve grower incomes.

Under the ICO/CFC project coffee was the pilot crop in both Tanzania and Uganda for the WRS system, and the lessons from these countries will be augmented by the experiences gained through other initiatives in Ethiopia and Kenya, as well as in Malawi and Zambia (maize).

2. Country findings. In the coffee sector of the countries under review, the use of WRS is most prevalent at the pre-export level; either as part of conventional collateral management as in Uganda or, through licensed warehousemen where there is a guaranteed and traceable channel for both sale and receipt of proceeds (e.g. as provided by the coffee auctions in Kenya and Tanzania).¹⁴⁰ In Malawi, on the other hand, WRS for maize (promoted by The Agricultural Commodity Exchange for Africa or ACE) gained traction once a form of formalized trading of warehouse receipts became available, and this later expanded into forward trading as well. However, the Zambian approach of introducing a WRS for the maize sector – in conjunction with establishing a fully-fledged commodity exchange – gained no traction, as the approach was neither gradual nor as all-inclusive and as open as was the case with ACE. Yet, as has been demonstrated in India, usually commodity exchanges are the most efficient at developing appropriate warehouse receipt systems.¹⁴¹

2.1 Tanzania. Legislation governing WRS is in place and some 28 warehouses have been licensed by the Tanzania Warehouse Receipt Licensing Board (TWLB). WRS financing is currently available for a number of non-perishable crops, including coffee, which are stored in approved warehouses. However, due to challenges in the different value chains (e.g. cashews, paddy, sunflower, and sesame seed) the uptake is variable. In the case of coffee, funding is generally only advanced against coffee that is delivered to the warehouses of a small number of licensed coffee mills for final export processing and auctioning, with the lender assured of repayment from the auction proceeds. It could be argued that this is an extension of the decades-old coffee warrant system, with the difference that cooperatives (and other producers) can now more easily obtain finance to cover the time lag between final processing and auctioning, thereby facilitating first or advance payments to farmers. The system therefore mostly if not exclusively facilitates the raising of funds, pending final processing and sale of both Arabica and Robusta, through the auctions. This has reportedly led to some primary cooperative societies bypassing local traders and so achieving higher prices.

¹⁴⁰ The auction systems have always relied on transferable WRS, called warrants, which form the basis for both advance payments pending sale to suppliers (estates, cooperatives, commercial growers) and the raising of funds by exporters. The coffee trade worldwide largely depends on borrowed capital.

¹⁴¹ Reference: Guidebook on African Commodity and Derivative Exchanges – African Development Bank.

2.2 Uganda. The WRS and supporting legislation was established in conjunction with the Uganda Commodity Exchange (UCE) for a number of crops, including coffee.¹⁴² However, in the entirely-liberalized Ugandan coffee value chain the system has had no response, other than at the pre-export level where warehouse receipts linked to collateral management were already widely used. Reasons include: a lack of warehousing capacity; distant locations; individual farmers having to transport the goods; minimum lot sizes too high; transaction costs; and not least, competition from middlemen that offer ready cash on delivery. In Uganda some 1.78 million widely-dispersed households produce mostly very small quantities of Robusta coffee that are easy to retain and store; for most, the minimum quantity required to go for the WRS option is simply out of reach. Using WRS to raise cash pending processing and final sale would be easier for cooperatives operating wet mills for Arabica because farmers are required to deliver fresh cherry and volumes are automatically aggregated.

2.3 Kenya. While the relevant legislation is in place, warehouse receipts are not used in the coffee sector other than at the pre-export level. Instead, once coffee is transferred to licensed millers for export processing and auctioning, finance is available from different sources, with each making their own arrangements in terms of security, collateral management, and reimbursement from auction proceeds.¹⁴³ Kenya also boasts a vibrant system of savings and credit cooperatives, offering credit to farmers in some areas against future sale proceeds due from the cooperatives to which they deliver fresh cherry, using the cherry receipts as collateral. This system has traditionally excluded those cooperatives with weak and inadequate financial track records.

2.4 Ethiopia. The Ethiopian Commodity Exchange (ECX) is a spot market, based on warehouse receipts that represent standardized qualities of coffee and stored in accredited warehouses controlled by the exchange. ECX was established as a single domestic coffee marketing channel by government decree and, excepting some co-operatives and large farms, is mandated to handle all domestic pre-export coffee transactions. Only clean coffee (green bean) is transacted and, once deposited, a lot must be sold within a certain number of days. Once sold, the exporter must take delivery within a set period. In other words, ECX-issued warehouse receipts are a means of transferring ownership from seller to buyer and are not necessarily intended to facilitate the storage (and financing) of coffee. After purchase, exporters then rely on conventional collateral management arrangements to securitize their borrowings.

2.5 Malawi. The coffee sector is split between some large-scale producers and a smallholder segment in the country's north, neither of which use warehouse receipts in the strictest sense. However, there have been recent developments in the maize sector. The Agricultural Commodity Exchange for Africa (ACE - <http://www.aceafrica.org/default.aspx>) was incorporated in 2005 as a spot exchange, with trading commencing at the end of 2006. Accumulated turnover rose to 40,000 MT in 2010 and 100,000 MT in 2012, and currently ACE has 85 registered users from seven countries. In due course however, it was soon clear that, without a forward selling option, farmers could not manage their price risk and end-

¹⁴² As of end 2013, there were just six UCE-accredited warehouses but even these were under-utilized. Maize presents a striking example of why this is so: the minimum accepted quantity is higher than what most individual farmers produce; there is the risk of rejection if the moisture content is too high and advances are for four months only for 60% of the value.

¹⁴³ WRS was introduced through a public/private partnership initiative to facilitate the trade in a liberalized cereals market, particularly maize, using extensive facilities owned by the National Cereals and Produce Board and other stakeholders. The intention being to enable cereal producers to raise their immediate cash needs without having to sell, which would mean forfeiting the higher prices that traditionally prevail once the early season's sales rush to raise funds has eased. Sensible as this seems, the fact remains nevertheless that there are no guarantees prices will in fact rise and farmers are exposed to the risk of falling prices.

users such as millers and others could not cover their forward requirements. Accordingly, trading in warehouse receipts began in 2011 and the first forward trade was set in October 2013. The Malawi experience, even in this brief outline, confirms warehouse receipt systems alone are not sufficient for purposes of income smoothing or avoiding forced early selling. In 2013, ACE traded 615 contracts in mainly soya and maize for a total volume of 67,000 MT and a combined value of US\$19 million, compared with just 134 contracts in 2012 for 19,000 MT worth US\$4.7 million. Based on favorable feedback from potential buyers, ACE is now considering the inclusion of smallholder coffee in its warehouse receipt offering.

3. Conclusions.

The notion that WRS can help smooth prices by avoiding forced peak season or early selling assumes rising prices, which obviously is not guaranteed for any commodity, especially one as volatile as coffee. Therefore, without some form of price guarantee, such as being able to forward sell stored commodities, growers remain fully exposed to price risk.

An ability to sell forward implies there are buyers willing to purchase forward, quality is standardized, terms and conditions are clear, and both warehouse receipts and forward contracts are enforceable in law. In most instances, only a fully-fledged commodity exchange can satisfy these requirements but, with the exception of Brazil and despite a number of attempts to establish them, formal coffee futures contracts have not gained traction in coffee-producing countries.

A WRS has to be backed by adequate financial services, including cash disbursement of advances on delivery. Otherwise many small farmers will not part with their coffee, particularly where they have difficulty accessing local banking services because of their remote location or other constraints.

Conventional collateral management remains the norm in coffee, with WRS mostly inaccessible for individual small growers who come into play only at the aggregator or commercial grower level.

Work in Malawi (through ACE) confirms that a fully-fledged warehouse receipt system should offer a combination of certified storage, collateral finance, market access, or trade facilitation, forward contracting and small operator integration; all backed by performance guarantees and further supported by access to transport and price information.

Collateral management is a simpler option. In coffee today collateral managers manage or monitor goods for which bank funding is provided, often in the borrower's premises. Collateral managers usually are independent operators who are able to post adequate liability and indemnity insurance, without which a bank would of course question the value of their services. Services can range from verifying that bank advances are used for the intended purpose (coffee purchases) and the monitoring of storage and export processing through to actual export and delivery of receivables (negotiable shipping documents) to the bank. By offering services in multiple locations that commercial banks would otherwise struggle to reach, collateral managers also facilitate access to credit along the supply chain, commencing, if required, at the post-harvest or collection stage. This range of services is both much wider and more flexible than that offered by conventional warehouse receipt systems and are therefore better suited to the coffee trade.¹⁴⁴

¹⁴⁴Like WRS, collateral management arrangements do not address price risk and price risk management, which are issues for borrower and lender to address.

Case Study 16: The Benefits of Modernizing Costa Rican Coffee Cooperative, COOPETARRAZU¹⁴⁵

1. Overview. This case study reviews the progress made by Costa Rica’s Cooperativa de Caficultores y Servicios Múltiples de Tarrazú (COOPETARRAZU) in establishing a comprehensive price risk management (PRM) program and the resulting impacts.

Continuing price volatility affects producers hugely and makes longer term planning extremely difficult as demonstrated by Table 1, based on the COOPETARRAZU experience:

Harvest season	Crop (MT)	Local sales	Export sales	NYKC at start cts/lb	NYKC at end cts/lb	Change during season
2011/12	6,954	2,450	4,504	290	186	-/- 35.8%
2012/13	7,625	3,127	4,498	165	136	-/- 17.5%
2013/14	10,206	2,722	7,484	115	185	+ 60.8%

Table 6.1 – Performance of COOPETARRAZU and price volatility experienced during seasons (2011 – 2014)

Price risk management programs are the ‘new normal’ without which short-term or seasonal funding will either be constrained or, at best, (much) more costly. However, lenders, particularly commercial banks, need to understand the need for flexibility when assessing PRM programs as part of their due diligence.

This case study highlights that, without assistance, smaller and less well-endowed organizations will find it difficult to duplicate the progress made by COOPETARRAZU and others like it. It also shows that different means need to be found to enable such smaller organizations to access financial risk management instruments, preferably through some form of standardized approach, adapted to local circumstances as necessary.

Producers also are in need of effective protection against the kind of intra-seasonal (and even intra-day) price volatility seen in the past three seasons. An effective PRM strategy should to a large extent protect the cooperative and also its members from the kind of precipitous price decline seen in recent years. Over the longer-term, producer revenues will inevitably reflect the prevailing market price, and it is this uncertainty that makes the raising of both working and investment capital so difficult.¹⁴⁶

2. Background. In the late 1990s, COOPETARRAZU experienced declining competitiveness as a result of quality problems, insufficient finances, and a lack of market access, all of which combined to make

¹⁴⁵ With thanks to the Board and general management of COOPETARRAZU and Fair Trade USA

¹⁴⁶ Sales under Fair Trade conditions benefit from a minimum price (currently US\$1. 40/lb for Arabica) but there is obviously a limit to the amount of coffee that can be traded under those conditions.

membership less attractive. The COOPETARRAZU Board re-evaluated its overall strategy and in 2003/04 brought in experienced managers, assuming that the additional costs would be justified through better results. This proved to be the case, and in time the new management gained the trust of both Board and members. It should be noted that this decision went against a well-established tradition (found in many cooperatives) that managers are selected from within the membership or have close links with leading members. The decision to engage executives who had no membership links with the cooperative therefore was not an easy one. Currently COOPETARRAZU has some 2,950 active members, 75% of whom have less than 4 HA planted to coffee.

However, around 2006/07 buying competition generally in the form of collectors and exporter representatives moved increasingly closer to the farm gate (a development seen in some other coffee-producing countries). This presented COOPETARRAZU with new challenges in that its growers were now being offered outright cash prices that, in many instances, were significantly higher than the first payment under the cooperative's traditional pricing model. This latter model comprised of a conservative first payment on delivery, followed by periodic additional payments as coffee was liquidated, with a final payment at season's end. Growers began to question whether the old system was worth maintaining, especially as the total of their payments at times came to less than the prices offered by outright cash buyers. Unless COOPETARRAZU found ways and means to match those prices, it was likely that side selling would gain ground, the coffee intake would fall, the cooperative's competitiveness would be eroded, and eventually services to members would have to be curtailed. The only answer was to square up to competitors who enjoyed good access to low-cost finance and had multiple means of managing their exposure to risk. The decision was made to set the first payment to growers at the levels prevailing in the domestic market at the time. As such, COOPETARRAZU began assuming price risk (i.e. it was taking in coffee at a set price without knowing what the sales price would be) and building a risk management program to address it. A further expectation was that, in time, such a program might also facilitate access to more and less costly finance.

The introduction of professional management had already ensured that COOPETARRAZU had strong internal systems and managers familiar with modern business practices and who understood that price risk management was both essential and complicated. External advisers were brought in to familiarize both Board and management with the complexities of the available PRM mechanisms and to design and implement a three-step PRM strategy, including arranging access to a futures trading account.

PRM must address risks at three stages: before, during and after the Harvest. Exposure to price risk changes as the season progresses, and so each stage needs to be assessed and analyzed separately. Furthermore, a substantial proportion (usually around 50%) of COOPETARRAZU's volume is handled under Fairtrade conditions, with a in-built floor price of 140 cents/lb FOB, an important consideration in the PRM strategy when export prices are around that floor price. Other issues arising from the three stages of PRM strategy include:

- **Before the harvest**, local and global fundamentals, as well as the local crop estimate, are reviewed, leading to the adoption of a forward-looking risk management scenario. This usually comprises a mix of purchasing put options to protect against price falls, selling coffee forward (short selling) on a price to be fixed basis (PTBF¹⁴⁷) or at outright prices, In the latter case, the

¹⁴⁷ It is important to note here that when selling Price To Be Fixed basis (PTBF), COOPETARRAZU's Board has instructed that fixing shall occur prior to shipping. This ensures the act of fixing prices does not become pure speculation in the form of 'rolling' fixes from one futures position to the next, in expectation of higher prices.

choice might be to buy call options to protect against price rises after that sale (or after a forward PTBF sale has been fixed).

- **During the harvest**, a daily position report details the overall position: long, short, stocks, break-even, total coffee intake, total sales, finances, costs, etc. Additional decisions are made as required, taking into account both domestic and global price developments.
- **After the harvest**, the total volume collected and sold is known, meaning decisions have to be made on any unsold volume. If no immediate sales are anticipated, then put options might be used or, as COOPETARRAZU has access to a futures trading account, a hedge using futures combined with a stop-loss order might be considered.¹⁴⁸

COOPETARRAZU progressively developed and applied a well-thought out, multi-faceted strategy that demonstrates good market insight and sound decision-making. The main reasons why this has been achieved can be summarized as follows:

- Good internal organizational, including a mature Board of Directors
- Qualified and trained technical management staff
- A long-term vision; financial instruments work better under a clear long-term strategy as a way of minimizing the natural speculative position of producers, who – by necessity – are always long
- Understanding that introducing PRM is a progressive learning process, and that it is a management tool, not intended for speculation.

3. The Experience of the Past Three Seasons

3.1 The 2011/12 Season. Out of a total intake of 6,954 MT green bean equivalent (GBE), 2,450 MT were sold to or through local exporters, 4,504 MT were exported directly (mostly using the traditional approach to PRM consisting of selling on PTBF basis and fixing prices when coffee was received). However, put options were taken out for 10% or 454 MT equivalent as a first experiment. The total cost was US\$50,000 or 5 cents/lb. The calamitous fall in prices during the season proved the point that, in a falling market, put options provide a floor price and the small pilot was a success. More importantly, it provided clear lessons because money was lost due to over-paying producers in what turned out to be a sharply falling market (with prices falling by over one-third during the season), which had to be covered from the cooperative's reserves.¹⁴⁹

¹⁴⁸ A stop-loss order is triggered when the relevant futures price reaches a pre-established level but it is worth noting a) that futures trading involves financing margin calls and b) that volatility caused by so-called program or flash-trading can cause price shifts that could make it impossible to execute at the stated price.

¹⁴⁹ Protecting one's cost price by selling outright (or fixing existing PTBF sales) as coffee arrives (often demanded by lenders) can result in having to chase sales, particularly once the seasonal coffee intake increases sharply; this is particularly the case for large operations as COOPETARRAZU. If buying interest is slack at such a time, this will result in lower prices. Similarly, trying to sell substantial volumes forward ahead of the season on PTBF basis may depress one's differential and once a lower differential for a well-known quality coffee is in the market it is more difficult to increase this later. Forcing sales for reasons of liquidity is never good and COOPETARRAZU's PRM strategy aims to avoid this.

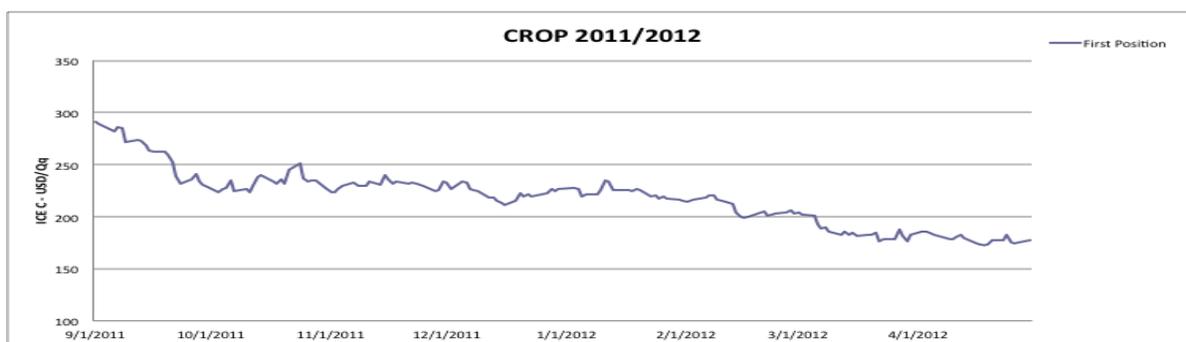


Figure 6.10 – 2011/2012 Season

3.2 The 2012/13 Season. The total intake was 7,625 MT GBE, of which 3,127 MT were traded locally and 4,498 MT were exported directly. This time put options were taken out for 2,721 MT equivalent at a cost of US\$500,000, or about 8 cents/lb.

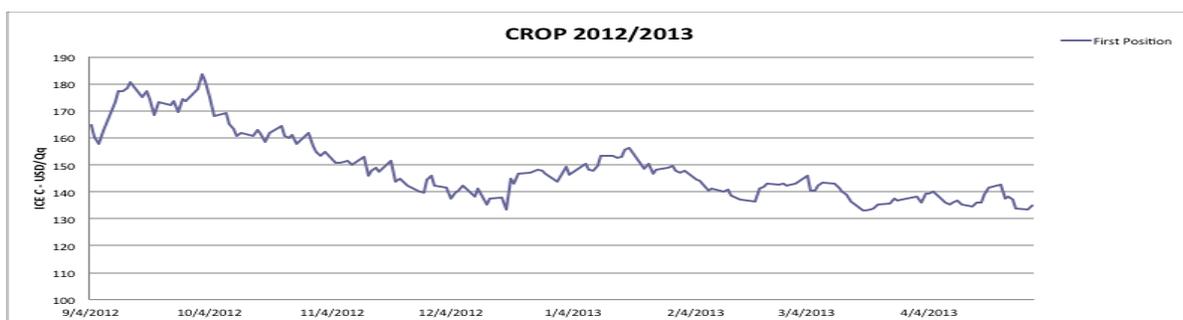


Figure 6.11 – 2012/2013 Season

As prices continued to fall, this much larger exercise proved profitable for COOPETARRAZU, although overall grower prices of course fell vis-à-vis the previous season and the cooperative's income was lower as well. But, more importantly, the experience helped shape the three-pronged approach COOPETARRAZU now takes in respect of PRM:

- Before the season, local and global fundamentals are analyzed to form a view on trends and expectations
- Previously-collected data and field forecasts are gathered and projected into a crop estimate
- Already concluded sales commitments (PTBF contracts) and previous sales patterns are similarly documented

At this point the cooperative will decide whether to await the actual harvest before purchasing any put options to secure a floor for the coffee to be purchased or to fix already concluded PTBF forward contracts, which means taking a short position against the coffee to be purchased. In the latter case, a further decision will have to be made on whether or not to purchase any call options to protect those fixes against unexpected price rises. During the season itself, a daily position report provides: local and international market information; all stocks by type, their cost, and whether sold or unsold; all sales commitments and whether covered by stocks or not; and which PTBF contracts remain to be fixed. This enables management to review the PRM strategy on a daily basis and to react as may be necessary.

COOPETARRAZU totally avoids speculation and instead aims at obtaining the best possible average sales price over a season. Members are paid a market-related price on delivery and, depending on COOPETARRAZU's financial results, a final payment at the end of the cycle.

3.3 The 2013/14 Season. Total intake rose to 10,206 MT GBE, of which just 2,722 MT sold locally and 7,484 MT was exported directly. This time puts were taken out for 4,536 MT equivalent, at a cost of 10 cents/lb or a total investment of US\$ 1 million. This positioning reflected a much larger intake and the now established conviction that, in fact, options purchases are in effect investment in a form of insurance and as such as are a key aspect of the cooperative's PRM strategy.¹⁵⁰ In this instance, however, and to the surprise of many, the market strengthened.



Figure 6.12 – 2013/2014 Season

As a result, the purchased options expired without any gain but their cost was easily offset by the strong gains made on the unsold physical coffee covered by the puts. The overall result was highly profitable as COOPETARRAZU was able to benefit from the improved market, having had a floor price in place for their unsold stocks.¹⁵¹

Even so, the main issue for all involved was to view the loss on the options not as money lost but as the cost of insurance; in this case price insurance. However, the price volatility of just these three seasons has made it unequivocally clear to both the Board and individual growers that having an effective PRM strategy in place is the 'new normal' and that there is no going back.

COOPETARRAZU's experience during these seasons reflects the culmination of a decade-long program of investment in both personnel and training. Given that at its inception COOPETARRAZU was already an established and relatively well-functioning and well-resourced organization, it also demonstrates that such proficiency takes time to develop. Notably, COOPETARRAZU was fortunate in having the resources to fund its put option program, using a combination of own reserves and credit lines.

4. The Link Between PRM and Access to Finance. Following the successful 2011/12 pilot effort, COOPETARRAZU convened a meeting with a number of financial institutions to discuss and explain the

¹⁵⁰ In the previous year (2012/13), COOPETARRAZU conducted an intensive training campaign on the prevention of lead rust or Roya. As a result, members suffered little loss and in fact, due to favorable, conditions generally harvested a larger crop than in previous years.

¹⁵¹ Of course, the puts were not all bought at once. As it turned out, the crop was some 20% more than expected but once the originally estimated tonnage was reached, instead of buying more puts, they reverted to either fixing contracts or leaving unsold stocks uncovered, believing the market was rising and that it was safe to do so.

potential benefits of its three-pronged PRM program (forward contracts, hedging, and options) that included securing a floor price for unsold stocks using put options.¹⁵² The main objective was to rectify an oft-encountered belief that fixed price contracts are the best, if not the only, way to secure advances. Understandable as this may be, it nevertheless pushes the borrower to make sales decisions based on liquidity issues rather than marketing priorities and, in fact at times may have detrimental effects. By demonstrating that put options can secure a floor price for coffee still to be collected, COOPETARRAZU hoped to convince the banks they could make advances without insisting on previously-agreed fixed price contracts.¹⁵³ This in turn would allow the cooperative to make its sales decisions based on market realities, rather than liquidity needs. While the general consensus was positive and more information has meantime been provided, indications nevertheless suggest a continuing reluctance on the part of commercial banks to move away from what is seen as a proven and safe arrangement. The reaction among social lenders, on the other hand, was more positive in that the use of options is increasingly seen as minimizing risk; a significant factor when executing due diligence and setting interest rates...¹⁵⁴

This confirms once again the importance of ensuring borrowers and lenders both understand the intricacies of the trade in coffee and how PRM can be applied. But most cooperatives and similar organizations do not take advantage of the kind of resources employed by COOPETARRAZU to purchase its puts, meaning that in many instances lenders may also have to consider financing the cost of options. Depending on circumstances, that cost can be significant, which could be discouraging or out of reach for producers of mainstream types of Arabica and Robusta (as these coffees generally sell at much lower prices than the high-quality Mild Arabica as produced by COOPETARRAZU). Finally, there are also examples of producers losing interest in PRM, for example when prices are rising and they are doing well or, when prices are so low that they see the cost of options as representing yet more loss. However, irrespective of price levels, without PRM the cost of finance will arguably be higher and marketing options may be constrained.¹⁵⁵

5. Outcome. Domestically, COOPETARRAZU has been able to compete more actively because it has emerged as a kind of price setter rather than a price follower, given that it can secure a floor price for the coffee it collects. But, more importantly, like its competitors the cooperative is now also able to offer medium and large producers (who might otherwise channel some or all of their coffee through third parties) the possibility to sell coffee forward to it, either at a fixed price or on PTBF basis. When buying outright or once a PTBF purchase is fixed, the cooperative will cover its price risk in one of three

¹⁵² Banco Popular, Banco Nacional de Costa Rica, Banco de Costa Rica, Responsibility, and Oikocredit (the latter two being social or alternative lenders). Remarkably, the cooperative not only brought along two experts to explain both the trade in coffee, the use of futures markets generally, and the step-by-step process of its PRM program, but it also invited representatives from other cooperatives to take part.

¹⁵³ By fixed price contracts is meant here either an outright sale = with the price agreed or, a PTBF sale for which the price has been fixed.

¹⁵⁴ In the case of Coopetarrazú it is difficult to judge by how much, or if at all, the PRM program reduced interest rates because given its status as a well-established undertaking with a good track record the cooperative already obtains prime rates, being classified as an A-class client. But the PRM program does play a role in their negotiations with lenders and, in some instances, has facilitated discussions around the provision of collateral.

¹⁵⁵ Predicting where the market is heading is an inexact science at the best of times as demonstrated by the old trade saying that 'when prices rise coffee is never too expensive, and when prices fall it is never cheap enough', meaning no one knows and PRM remains relevant, always.

ways: fixing the price on one of its own PTBF forward sales contracts; buying put options; or conventional hedging using its own futures account.¹⁵⁶

In terms of cost to the organization, nearly all the cumulative expenditure on the futures account for these past three seasons was matched by price changes on the corresponding physicals, whereas the puts were judiciously managed in terms of realizing their value in years one and two when prices fell, and still obtaining some residual value in year three, even though prices rose. All this must necessarily be seen in the light of COOPETARRAZU's financial strength and ability to carry this account; such a model is not for each and every cooperative or farmers' organization. Nevertheless, these kinds of operations do not have to be on this scale and can in theory be replicated with much smaller volumes. The reality is, however, that few financial institutions would be interested in handling such relatively small transactions.

6. Conclusion. Today, COOPETARRAZU basically conducts the trading side of its coffee business like any other well-resourced and experienced exporting house, and is fully competitive. Its strategy was effective because:

- It progressively developed a PRM program that combines physical and financial strategies, including the use of options, with the aim of protecting their estimated break-even point from price falls.
- The strategy enables them to set a competitive first payment to growers, determined by the volume of Fairtrade and other pre-season sales (mostly, if not all, PTBF) they have on the books, coupled with their assessment of the market, the projected harvest, and the level of unsold stocks. The season's strategy is built upon this information and can include the use of options when judged appropriate.
- Board Members and management understand not only the complexities and the basics of these strategies, but also the fact that PRM should exclude speculative activity.
- The cooperative's position is marked to market daily and there is total transparency between Board and management.

Naturally, this case study must not be taken to infer that producers can be fully-protected against the kind of intra-seasonal (and even intraday) price volatility seen in the past three seasons. When prices fall precipitously during a season, an effective PRM strategy should to a large extent protect the cooperative and, as happened in 2013/14, also its members. But over the longer term, producer revenues will inevitably reflect the prevailing market price, and it is this uncertainty that makes raising both working and investment capital so difficult.¹⁵⁷

¹⁵⁶ This is in response to competitors offering the same facility and may in future be extended also to smaller suppliers, even though experience to date shows members have been better off receiving the season's average value.

¹⁵⁷ Noting of course that sales on Fair Trade conditions benefit from a minimum price (currently 140 cents/lb for Arabica) but that there is a limit to the amount of coffee that can be traded on those conditions.

7. Lessons Learned by COOPETARRAZU

- Professional input is essential to support the learning process, i.e. an organization wishing to implement a PRM program will need to secure outside support. The objective should be to support the learning curve and promote knowledge rather than any particular programs or packages.
- Executing a risk management strategy requires qualified, professional personnel who are able to manage the program under the overall direction of the board, meaning that individual board members too should be taking on board the necessary insights.
- Decision-making processes have to be formalized, must be disciplined, and should involve more than a single person. Daily, fully inclusive position reports are a must.
- A hedging program requires its own financial resources; otherwise there is a risk of diversion of working capital from the collection of coffee. As such, this requires parallel finance, which is often difficult to find (COOPETARRAZU at least in part invested their own capital). Hedging through futures is therefore problematic in that it can result in substantial margin calls that could affect overall liquidity.¹⁵⁸
- Risk management is a long-term strategy, meaning that even if this year's results are not optimal, the program continues over coming years. A short-term focus by a cooperative will result in programs terminating early and leave the cooperative exposed.
- The cooperative, management, board, and members must all understand that not all risks can be covered by a PRM – basis risk is a good example.¹⁵⁹
- Futures should never be used for speculation by these organizations. Wherever possible, the cooperative should use physical strategies to manage price risk, i.e. trade back-to-back.
- Understand the basics, primarily that buying coffee outright generates a long position that has to be protected against price falls.
- Understand the relationship between local prices and futures, i.e. know what basis risk is and ensure constant monitoring.
- Understand it is not always possible to protect a price for all the harvest, whereas protecting the break-even on unsold stocks (including coffee under process) should be prioritized.
- When faced with uncertain supply prospects in terms of volume and quality, it may sometimes be preferable to persevere with put options rather than trying to sell forward.
- Put options might also be preferable at times when the available differentials on forward PTBF sales are too low.
- Some bank staff often do not understand how futures work. For some, options are easier and more straightforward because there are no issues around potential margin calls; in effect, options look more like an insurance policy. Having put options in place means a certain volume of coffee has at least a minimum value, making it potentially easier to raise funding.

¹⁵⁸ Logically, a cooperative will always be long in that it has to buy its members' coffee. Failing forward or back-to-back sales, the temptation would obviously be to short futures, but this is both dangerous and could become a financial albatross if the market moves suddenly and sharply; this as opposed to using options, which carry a one-off cost.

¹⁵⁹ Basis risk is the risk that domestic prices do not move in tandem with the international market.

Case Study 17: Nsangi Coffee Farmers Association, Uganda

Overview

This case study details the experience of a newly-formed coffee cooperative in Uganda that grew speedily but faced challenges that included high counterparty risk and member side-selling. The objective is to illustrate how aggregated farmers can succeed in accessing credit and expanding their marketing options, but also to highlight the challenges that might arise if internal management procedures do not keep pace with that expansion.

Background. The Nsangi Coffee Farmers Association is located in Wakiso District near Kampala, Uganda and was registered in April 2005. Its members produce Natural Robusta. Nsangi was established as a farmers' association through a national body known as the National Union of Coffee Agribusiness and Farm Enterprises (NUCAFE), which promotes farmers' organizations.

Uganda mostly produces Natural Robusta (although Arabica output is growing strongly). Yields are generally low and many farmers complain of poor returns from Robusta coffee. Most Robusta is traded for cash, either as dried cherry at the farm gate, or as variable quality 'clean' coffee that has been hulled before sale to collectors.

Progreso NL, a Netherlands-based foundation, which works with smallholder associations and cooperatives, identified Nsangi as a potential candidate for assistance because it was a new producer organization in the Natural Robusta smallholder sector where access to funding is often far more difficult than in the Arabica sector. Producers of washed or mild Arabica are more often singled out for such assistance because, usually, they are already aggregated around a central point, such as a washing station or wet mill. At the time of Progreso's intervention in 2009, Nsangi was unable to raise formal working capital. With members being equally unable to provide any funding, the Association relied on weekly advances from local traders/exporters to collect coffee. It sold rough hulled or Fair to Average Quality (FAQ) type coffee to local exporters, using third party hulling plants to do the processing.

Nsangi became a member of 4C¹⁶⁰ in 2010 but to date has not sold any 4C-compliant coffee. It maintains a seedling nursery, and assists members with drying materials and technical assistance. It also runs a small poultry business. After leasing a small hulling plant, Nsangi was able to process coffee to exportable quality, resulting in both higher sales values and a more diversified portfolio of buyers. While initially Nsangi could only export through NUCAFE, in 2011 it obtained its own export license. In February 2014 Nsangi also became Fairtrade certified.

Funding. Progreso commenced its program with Nsangi by providing technical assistance under its Producer Development Program. This included strengthening institutional and management capacity, improving financial literacy, introducing risk management, as well as pre- and post-harvest training for producers in an effort to make Nsangi more 'bankable'.¹⁶¹ On the basis of improved prospects and commitments by some buyers to channel payments (receivables) via Progreso, the Progreso Coffee Fund then provided a first facility of US\$55,000 for 2010/11. Satisfactory settlement of this first facility was followed by approval of a larger facility of US\$187,688 for 2011/12 as, in general terms, it appeared Nsangi was making good progress (although there were questions around the financial statements for 2011). As the lending amounts grew, along with an appreciation of the associated risks, 2012 funding for

¹⁶⁰ 4C or Common Code for the Coffee Community is a mainstream base-standard for sustainable coffee production that relies on verification rather than certification.

¹⁶¹ See www.progreso.nl

Nsangi was provided by the Rabobank Foundation, with supervision by Progreso. The funds were transferred directly to Nsangi, relying mainly on export contracts with pre-approved buyers, meaning there were no liens as such over property, stocks, or receivables, nor was there involvement by any local commercial bank in this funding arrangement. The funds received were used by Nsangi to finance the collection of coffee from its members, as payment for the coffee exports would not be received until the coffee was loaded. This funding enabled Nsangi to fulfill larger direct orders to buyers, including for export, whereas previously they had be forced to sell locally every few days to free up cash for further purchases.

Trading Strategy.

Nsangi began trading coffee mostly back-to-back, in which buyers provide a firm price enabling the cooperative to make market related payments (on delivery of coffee) to its members. As the business grew into exporting so pricing gradually became differential-based, set against the London Robusta Futures Market with Nsangi realizing positive differentials.¹⁶² It is noteworthy, however, that the cooperative members did not necessarily understand market behavior and as of today many still do not, meaning that internal decisions made by the cooperative management with regards to pricing of coffee, which could be driven by activity in the futures market, may at times not have been fully understood by the members. Progreso began providing training in risk management to address this knowledge gap, stressing also the importance to the cooperative management of the need to stay away from speculative decisions. Generally speaking, Nsangi was making progress on different fronts as captured in Table 6.2;

Details	2008	2009	2010	2011	2012
Membership	700	700	843	950	1200
Of which 4C certified	329	505	510	506	506
Hectares in production	1500	2560	2560	2950	3826
Clean coffee sold M/T	60	174	78	215	273.6
Total sales revenue US\$	32.513	79.999	75.950	241.136	290.930
Of which exported	nil	nil	23%	38%	22%

Table 6.2 – Key Aspects of Cooperative Performance 2008-2012

Subsequent events however proved to be fairly dramatic. Firstly, using part of the funds received from the Rabobank Foundation, Nsangi provided outright pre-season cash advances to its members in the expectation this would result in larger coffee volumes. But this was done without having an effective administrative procedure in place to ensure that these members would actually deliver the coffee, or would refund the money if they could not deliver coffee. A large number, in fact, delivered no coffee whatsoever, leaving Nsangi with a substantial financial shortfall. In fact, it could even be assumed that the provision of pre-season cash advances may have encouraged some farmers not to provide coffee to the cooperative and instead sell to other collectors, thereby avoiding repayment of the loans received.¹⁶³

Secondly, in 2011/12 Nsangi had concluded a first sale to a buyer in China that had been settled satisfactorily through payment against presentation of documents. Based on this experience, Nsangi in

3. In this context 'differential based' means Nsangi was able to sell at prices linked to the prevailing price at the London Robusta futures market plus a differential for better quality. However, all the contracts were concluded at fixed or outright prices.

¹⁶³ Nsangi estimates that in addition to the no-shows other members only supplied between 40% and 45% of their actual production.

the following season agreed to hand the documents for a subsequent sale 'in trust' to the same buyer who then simply did not pay, thereby increasing Nsangi's financial shortfall by a further US\$39,850.

Thirdly, Nsangi transferred its operations to newly-leased office cum warehousing premises in a new industrial estate and was preparing to install a hulling plant. Previous land owners however subsequently claimed they had been unfairly evicted during the establishment of the estate and Nsangi was targeted by people who came to reoccupy 'their land', resulting in the theft of substantial quantities of both clean coffee and coffee for processing, as well as other property. As a further consequence, Nsangi was unable to install its newly-acquired hulling equipment for which it had paid but could not use for the 2013 season.

Status quo as of the end of 2013.

As a result of these developments, Nsangi's 2013 turnover fell to just 57.4 MT valued at US\$98,423, whereas the total outstanding amount at year-end stood at US\$144,000, plus interest. As a result, Nsangi did not obtain any external funding for the 2014 season and it will rely once again on local exporters making short-term advances against coffee received from members, with Nsangi delivering ungraded coffee within a few days as before. Nevertheless, and despite all this, Nsangi has been able to obtain Fairtrade accreditation and is attempting to regularize its 4C verification as well. One exporter has expressed interest in continued dealings with the Association, agreeing to make payment through the Rabobank Foundation or to make deductions in terms of the repayment schedule agreed between the lenders and Nsangi. In addition, the membership has agreed that the bulk of future Fairtrade premiums will be retained to further reduce the Association's debt, as will any future income from operating the hulling plant once installed.

Lessons learned.

Despite having received pre-season advances, some 45% of members did not honor their delivery obligations, side-selling their coffee instead. This demonstrates how difficult it is to establish cohesion in newly-formed farmer organizations; and the greater the number of members, the more difficult this becomes. Obviously, it can take time for members to absorb new ideas, and not all farmers share the same goals, particularly when it comes to the handling or sharing of finances. While provision of pre-season finance can work effectively if the cooperative has an established membership and procedures in place for ensuring repayment, where this is not the case members should only be paid for coffee on delivery. Nsangi will in future only advance cash against actual deliveries or develop a system of "trusted farmers" who will benefit from cash before deliveries.

Handing over shipping documents 'in trust', i.e. directly to a buyer without a commercial bank's intervention, is not advisable for newcomers to the coffee trade, it and suggests a need for trade awareness and training. Cooperatives exporting directly need to ensure that they have trained export managers in place and that they follow best practices.

Making advances directly available to borrowers (i.e. instead of through local commercial banks) can result in transactions that are contrary to the best interests of borrower and lender alike. Nsangi's in-house decisions on the handling of cash advances and shipping documents might have been different if, for example, a local commercial bank had monitored the cooperative's financial transactions.

Conclusion

Successful farmer aggregation initiatives recognize the limitations associated with varying standards of comprehension and fidelity among individual group members. They also understand that achieving the necessary group cohesion is a long-term undertaking that relies on individuals realizing the benefits associated with being part of a particular undertaking. Such advantages are sometimes easier to demonstrate when a farmers' group is linked to one or two 'anchor buyers,' whose intervention provides advantages that farmers individually cannot realize.¹⁶⁴

Some of Nsangi's financial problems might not have arisen if its funding had been provided through the intermediation of a local commercial bank; even if the actual funds emanated from a third party, that bank's own procedures would most likely still have applied, and as basically no collateral was available, some supervision might therefore have been exercised over the drawdown of the funds and the handling of receivables as shipping documents. But, in many instances (and Nsangi was no exception), local commercial banks are not interested in engaging with new entities in the 'risky' coffee trade, leaving external lenders with little or no alternative but to go direct in assisting their clients to become successful and therefore 'bankable'. Alternatively, a commercial bank's internal regulatory regime might limit the applicant's ability to actually access those third party funds. The question then is how to link 'soft financing' with normal commercial and financial discipline without reverting to something like collateral or micro-management?

None of the preceding obviates the need for cooperative managers to act professionally by avoiding poor or speculative financial and trading decisions, and understanding the intricacies of the coffee trade, including the handling of receivables as shipping documents. Nsangi's experience confirms that broader training in different aspects of coffee trading, not just price risk management, is essential for managers of start-ups, particularly where growth is rapid and exporting becomes part of the business portfolio.

Another reality is that educating the board of directors and the membership at large along similar lines is equally essential but will take much longer; some may never really grasp what they have signed up to in terms of both potential benefits and their own obligations. To address these issues, at least in part, lenders could either exercise more direct supervision or impose more stringent conditions but the latter option still leaves the question of supervision unanswered.

¹⁶⁴ This is probably the main reason why to date so many initiatives have been based on washing stations/wet mills in the mild Arabica sector.

Case Study 18: Strengthening the Financial Capacity of Smallholder Businesses – the PorFin Project

Overview

This case study reviews the outcomes of a multi-country project aimed at strengthening the internal financial management of smallholder organizations while simultaneously improving the ability of board members, management, and individual members to analyze financial information and progress reports, and sensitizing lenders to the opportunities to work with small rural producers. The conclusion is that this three-pronged, bottom-up approach was largely successful and assisted toward increasing and diversifying access to finance for a number of the participating organizations. The methods and tools developed formed the basis for a new financial management training program at Root Capital, the social investment fund that supported the project. The **lesson** is that this type of systematized approach would ideally form part of every program that seeks to develop or improve smallholder businesses, provided such programs extend beyond one or two business cycles for the participating businesses. If not, there is a risk that neither the system nor its lessons will take hold.

Background. Porvenir Financiero (PorFin) or “financial future” is actually shorthand for the project entitled “Extending Access to Export Markets by Strengthening the Financial Management of Small Rural Business Organizations”, which was co-executed by Root Capital and EARTH University between January 2006 and June 2010. The Inter-American Development Bank (IDB) and its Multilateral Investment Fund (FOMIN) provided financing.¹⁶⁵ Project activities were carried out in Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Mexico. The PorFin initiative emerged from the recognition that smallholder businesses, in particular those in coffee, depend on access to affordable credit yet often lack the necessary financial and business management capacity to be considered ‘bankable’ by either social or mainstream lenders.¹⁶⁶ It also recognized that internal conflicts generated by inadequate financial systems (e.g. inadequate management of internal credit operations, credit risk, financial planning, cost control, cash flow, and distribution of dividends) could threaten the viability and even the survival of smallholder organizations.¹⁶⁷ This in turn increases the potential risks for lenders. PorFin was a pilot project for Root Capital, which has used the experience to draw on the lessons learned, the methodology, information technology approaches, and tools and human resources in its own financial management training program, Financial Advisory Services.¹⁶⁸

The project aimed to strengthen the financial management capacity of the participating organizations at all levels, including their financial systems and procedures and building the capacity of the management, members, and board to understand and use financial information. It also set out to facilitate contact with lenders, with the overall aim of consolidating and expanding access to credit and so broadening market access. Work on connecting lenders with potential clients included carrying out research into the

¹⁶⁵ This case study is based on an original project overview by Manel Modelo, the project director, and the final project evaluation was carried out by IDB/FOMIN in May-June 2010.

¹⁶⁶ An assessment carried out with each participating organization in the early stages of the project confirmed that access to sources of credit was one of the key barriers that could prevent their consolidation and growth.

¹⁶⁷ The final project evaluation indicated that the majority of participating organizations had previously experienced internal conflicts due to a lack of appropriate financial systems and capacity, which had threatened the solidity of their operations.

¹⁶⁸ Root Capital’s Financial Advisory Services is a financial management training program for current and prospective clients, covering topics such as accounting, financial planning, risk management, financial statement analysis, loan application preparation, and credit management. For more information see www.rootcapital.org/our-approach

lending sector in each country and providing contact information and advice on their requirements for lending; organizing meetings where lenders could interact with participating smallholder organizations; and directly supporting some of these through the application process. Training modules were developed on both managing internal credit systems and on applying for a loan.¹⁶⁹ In addition, a bulletin called *NotiPorFin* was published and circulated to the financial institutions in each country, with the aim of giving them updates on the project and sensitizing them to the capacity of the producer organizations as potential clients.

In practice, the project focused mainly on preparing organizations to meet the requirements of banks for lending in respect of accounting systems, financial statements, planning and the viability/profitability of their operations, and only a small proportion of the project resources were spent on facilitating contact with lenders. However, the central premise of the project was that through addressing the underlying weaknesses in financial management, organizations would automatically become more attractive to lenders and better able to manage their external and internal credit operations.¹⁷⁰

Scope and Approach. The project aimed to reach 49 organizations in the six countries over a period of four years.¹⁷¹ These organizations were selected on the basis of a set of criteria, e.g. they had to be exporting organizations with at least an intermediate level of organizational development. Information about the project was disseminated through regional networks and meetings, and organizations could apply by submitting a letter of interest and relevant organizational information. Half of the organizations selected were smallholder coffee farmer associations and cooperatives, with the remainder involved in other sectors, including sesame, honey, fruit, spices, and handicrafts. The project was delivered in two phases, starting with Guatemala, Nicaragua, and Mexico and extending later to the remaining countries. This staggered approach was designed to facilitate effective project management in the early stages of the project and the transfer of knowledge and experience from the first phase to the second; for example, using consultants trained through the first phase to deliver workshops in the second.

The training approach was based on a combination of national workshops and decentralized workshops with individual organizations, and tailored technical assistance by locally-based consultants. In addition, all materials developed (14 training modules) were systematized and uploaded to the Moodle platform¹⁷² Cla@se.¹⁷³ The aim here was to make the materials and tools developed for both workshops and providers of technical assistance available to the participating organizations, and to create ‘practice groups’ of technical staff from each organization who, following face to face training events, would continue to share experiences on-line and add to the body of learning materials. It is not clear to what degree this was implemented in practice but in the most recent annual report from Coordinadora Latinoamericana y del Caribe de Pequeños Productores de Comercio Justo (CLAC), which now hosts

¹⁶⁹ These are available, alongside other PorFin training materials, on <http://www.claase.org/e-aprendizaje/>

¹⁷⁰ External operations refers to the capacity to obtain and manage credit from banks and other lenders; internal credit operations are the systems used to manage lending to the members of the organization.

¹⁷¹ Initially, 55 organisations were selected but six did not participate fully or chose to discontinue their participation. Of these initial 55, 13 were from Guatemala, nine from Mexico, eight from Nicaragua, eight from Honduras, eight from Costa Rica, and nine from El Salvador

¹⁷² Moodle is an open-source online learning platform, allowing users to host training materials and courses via the internet. For more information see: www.moodle.org

¹⁷³ Cla@se is an on-line platform developed to make the PorFin materials accessible to a wider audience. It is currently housed by CLAC (**Coordinadora Latinoamericana y del Caribe de Pequeños Productores de Comercio Justo**) and offers free access to a range of training materials relevant to smallholder coffee organisations. <http://www.claase.org/e-aprendizaje/>

Cl@se, it was reported that the site as a whole received 3,500 visits in 2013, has 250 active users, and that 450 materials were downloaded during that year.

In total, the project delivered 239 workshops attended by 5,847 participants, 31% of them women. Through the network of regional consultants the project delivered 2,297 days of technical assistance with 55% of the participating organizations receiving more than 50 days of technical assistance.

Results. The objectives of the project were to:

1. Strengthen capacity and improve financial management of participating organizations
2. Strengthen financial literacy of members and board of directors
3. Sensitize lenders to opportunities to work with small rural producers

Strengthening financial capacity, management, and literacy. The design of a rapid needs assessment enabled an initial classification of each organization, so that the activities and materials to be used in the capacity building could be adapted to their level of development. This also served as a benchmark to monitor progress over time. The areas included in the assessment were:

- i. Credit management
- ii. Internal credit operations
- iii. External credit operations
- iv. Business and administrative management
- v. Financial management/accounting
- vi. Marketing and commercial management
- vii. Technical and productive capacity
- viii. Services to members and social impact

Based on their assessment, organizations were classified into seven bands: AA, A, BB, B, C, D, and E. In 2008, 17 organizations were classified as A, which improved to 29 by 2010, representing an increase of 71%. There was also an increase of 30% in organizations classified as BB. At the end of the project, 45 of 49 participant organizations were considered to be more competitive businesses, with greater financial and business management capacity and increased opportunities to access finance.

Figure 6.13 demonstrates the initial position of the participating cooperatives (in brown); the green line indicates the project goal, and the blue line shows the final situation with regards to the six main sub-components:

- i) Accounting system
- ii) Financial literacy
- iii) Socialization of financial statements¹⁷⁴
- iv) Financial planning
- v) Interpretation of financial statements
- vi) Financial statement analysis

¹⁷⁴ Socialisation refers the sharing of financial information, (e.g. profit and loss statements), by board members with the rest of the organisation. This requires a deeper understanding of this information and its significance on behalf of board members and the appropriate communication tools to share it effectively with other members.

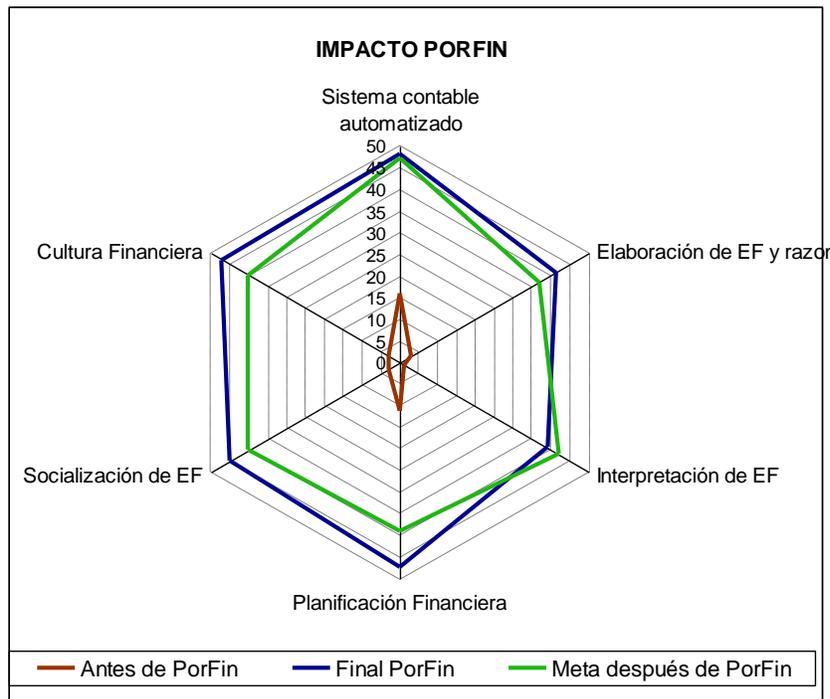


Figure 6.13 – Pre and post positions of cooperatives against targets

The project evaluation carried out by Fondo Multilateral de Inversiones del Banco Interamericano de Desarrollo (BID/FOMIN) reported that following their involvement in the training program, the boards, supervisory boards, management, administration, and members of the evaluated organizations had a higher capacity to use the financial information generated by their accounting systems to guide decision-making. These groups also reported feeling more confident about avoiding the kind of financial misfortunes they had experienced in the past. There was also a notable improvement in their accounting, internal credit, and basic organizational systems.

Interviews carried out during project evaluation revealed some additional results that were not among the original project goals; for example, boards of directors that, as a result of their training, were better able to hold staff to account and had made some replacements where staff were not performing well. Some organizations had made changes to their business focus, exploring the local rather than the export market having analyzed the profitability of their current activities. Others had developed joint business ventures with organizations they had met through the training. It was found that by working on improving their financial management, many organizations had improved their basic organizational systems and internal regulations, and had clearer definitions of the roles for the different organs of governance.

Sensitizing lenders on opportunities to work with smallholder producers. Activities in this area included the realization of a regional study in Nicaragua, Mexico, and Guatemala to assess the availability of rural finance in each. Meetings were held with producer organizations in all six participating countries to analyze potential strategies for accessing finance and with various financial institutions to determine the different models of lending on offer; this information was shared with all participating organizations.

A more detailed supply and demand survey was carried out with the eight participating organizations in Nicaragua, as well as two international lenders and three local financial institutions.¹⁷⁵ A workshop was held in Nicaragua that brought together these lenders and producer organizations to build relationships and analyze together the barriers to lending as perceived by both lenders and borrowers. Lenders presented on the deficiencies of the loan applications they had received, and smallholder organizations on their current situations and the challenges they had encountered in trying to obtain loans. The key deficiencies found by lenders were: lack of financial information from some organizations; incomplete information and the time it took to complete this (e.g. 3-4 weeks after the first information is submitted); organizations that were financially sound but with legal limitations or deficiencies; and lack of appropriate guarantees. The workshop ended by exploring ways to move forward and suggestions for further actions, including for example that producer organizations need to learn to promote their businesses more effectively to the banking sector, and that lenders need to understand how cooperatives and associations are different from other kinds of businesses, and be more flexible with regards to types of collateral and other loan conditions.

A training module was developed on applying for a loan, which was used by project consultants to train and offer technical assistance to the producer organizations. This module explained in some detail what kind of information lenders require and how they analyze this. It outlines the process step by step of applying for a loan and the kinds of information that organizations must submit at each stage, including for example: basic organizational information, certification, financial statements, any future contracts with buyers, crop estimates, bills of lading from previous exports, and the presentation of guarantees that would be used to secure the requested loan. Additionally, the training module aimed to help producer organizations understand the mindsets at commercial banks, their interests and priorities, and the kinds of questions they ask directly or while analyzing information provided as part of a loan application. The aim was to prepare organizations, particularly those with little or no experience of dealing with commercial banks, to understand the loan application process from the point of view of the lender and therefore to make more effective applications.¹⁷⁶

Over the course of the project, direct contact was made with 119 financial entities, including local private banks, multilateral financial institutions, international lenders, and microfinance institutions. In the final year, six organizations with an interest in diversifying their sources of credit were selected for targeted support; 13 credit applications were accompanied by project consultants, of which four were successful.

Overall, during the duration of the project, 54% of participants (26 of 49) reported they had improved and diversified their access to finance. Eighty-nine new loans were approved, of which 58 (65%) were to coffee organizations. Of these, 45% were from the alternative lenders and 11% from local commercial banks. The remaining 44% were from a range of financial institutions, including state development banks, NGOs, SOFOMs¹⁷⁷, savings and credit cooperatives, and microfinance institutions. Organizations involved in the first phase of the project (those which participated during the full four years) received 81% of the loans. In addition, between 2005 and 2009, Root Capital increased its lending to

¹⁷⁵ The lenders were second-tier institutions Rural Credit Fund (FCR) and Financiera Nicaraguense de Inversiones (FNI); first-tier commercial bank BANEX, and alternative international lenders Root Capital and Rabobank.

¹⁷⁶ See the module on Solicitando un Credito under Capacitacion Financiera at www.claase.org. (Currently only available in Spanish).

¹⁷⁷ Sociedad Financiera de Objetivo Múltiple. A SOFOM is a financial entity which may be regulated or unregulated and exists primarily to facilitate lending; clients can invest their own money in the fund and borrow against their deposits.

organizations involved in PorFin by 327%; the total number of client organizations did not increase but it was found that lending to existing clients who were part of the project went from an average of around US\$260,000 to US\$850,000 per organization.¹⁷⁸

Case studies were written in both the first and second phase, detailing how 10 organizations (of which five were coffee organizations) had diversified their sources of finance over the course of the project. It was found that the value of the loans obtained ranged from US\$10,000 to US\$1 million, with interest rates of between 0%-17% and repayment periods of 12-84 months. Loans were obtained for both short- and long-term investment but the majority went to trade finance, with a smaller amount for crop maintenance and renovation.

With regards to the financial capacity of the organizations, it was found that the majority of those which were able to obtain loans from local commercial banks were classified as A or BB in terms of their financial management and accountancy practices, indicating that these banks had the most demanding requirements. An example which supports this comes from Nicaragua, where it was found that commercial banks and the Social Enterprise Program implemented by BID/FOMIN had the most rigorous process for analyzing credit applications, including a review of governance, human resources, consistency in financial statements, management of internal credit operations, evolution of markets, and legal aspects.

Conclusions

Preparing smallholder organizations to meet lenders' requirements, in particular those of mainstream lenders, is an effective way to strengthen their financial operations; the results of strengthening their capacity in this area include improving the overall stability and viability of the business. The increase in access to finance experienced by the participating organizations during the course of the project indicates that the work carried out to strengthen their financial systems was successful in increasing and diversifying their access to credit.

For some organizations, social or alternative lenders can act as an entry point, but as volumes grow it would be of value to their businesses to diversify their sources of finance. However, the level of interest among producer associations in conventional banking services varies; it was found that producer organizations with existing relationships with alternative lenders are often less interested in pursuing opportunities to work with local banks. This is because they are familiar with the loan application procedures of social lenders and they value the relationship they have established and the approach of these institutions. This perception of easier accessibility is not restricted to lending requirements: it was found that, in general, alternative lenders have developed approaches that are flexible and responsive to the context, taking into account information from different actors in the supply chain, such as support organizations and buyers. They have developed a good knowledge of the clients, including their social and environmental missions, and they proactively seek to meet the needs of a rural sector that historically has not been served by local financial institutions.

Contact with the conventional or mainstream banking sector during the project indicated a trust or understanding gap that needs to be bridged. On the one hand, potential client organizations need to strengthen their capacity and procedures to meet the banks' requirements. On the other hand, local banks are naturally risk averse and sometimes base their perception of associations or smallholder

¹⁷⁸ The project evaluation suggests that it is not possible to draw a direct causal link between the participation of the organizations in the PorFin project and the increase in the amounts lent by Root Capital, but it does note that a significant increase occurred during the project duration

groups on outdated information. Their processes can be slower and more bureaucratic than those of the social lenders and they may offer less attractive terms, such as higher interest rates and shorter loan periods, or less feasible conditionalities; for example, some banks request fixed or outright price contracts as a basis for a loan when this can actually pose a risk for producer organizations should prices subsequently rise.¹⁷⁹

In order to foster relationships between smallholder groups and conventional financial institutions, there is a need for continued investment in mutual learning. Those organizations that need or wish to engage with the conventional banking sector have to invest in strengthening and professionalizing their own systems and improve their understanding in detail of the banks' requirements. At the same time, apart from the necessity for these potential borrowers to demonstrate their bankability, there is a need for ongoing sensitization of lenders on the functioning of the coffee market, available risk management options, and the opportunities that lending to the rural sector can offer.

Lessons Learned In Replicating the PorFin Approach

The principal conclusion from the final project evaluation by BID/FOMIN was that the success of the project lay in piloting an experimental approach to strengthening the financial capacity of smallholder organizations. Therefore, the evaluation was concerned with and interested in the effectiveness of the approach as tested with the participating organizations.

The evaluation concluded that the bottom-up approach to strengthening the financial capacity of smallholder organizations had been highly effective. The project addressed issues considered by participating organizations to be of central importance, such as financial analysis, accounting, internal credit, financial culture, etc. At the same time, the evaluation noted that few training initiatives address these areas of capacity directly. A recommendation made by the evaluation was therefore for other organizations working with smallholder groups to draw on this experience and use the materials that have been systematized.¹⁸⁰ The evaluation also highlighted the following points:

- It is important to carry out a diagnostic visit to all organizations interested in taking part as part of the selection process. This has several purposes: to take a snapshot of each organization's current state in order to understand their needs; to be able to group and classify organizations and design training strategies for each; to monitor the development of each group and the impact of the training methods used; and to correlate each group or category (e.g. A, BB) with particular hypotheses and results, such as access to or diversification of sources of credit.
- It is important to involve managers from the start, i.e. do not assume their level of knowledge without testing it. This is also to ensure that any recommended changes which emerge from the training have the buy-in and support of the managers who are responsible for the day-to-day running of the business
- Adapt the training events to the needs and level of participants. The project defined two main groups of participants – members of the organization or board of directors and technical and other staff members – and tailored the materials, training locations, and length of workshops to each
- Replicate the monitoring and administrative system developed by PorFin.

¹⁷⁹ For more on this see Case Study 6: "Minimizing Price Risk through Variable Sales Using Call Options"

¹⁸⁰ <http://www.claase.org/e-aprendizaje/>

- Contract local trainers for specific projects rather than for the project duration, which in the case of PorFin led to a results-oriented approach.

The strong emphasis on quality of delivery in the training design, execution, evaluation and systematization of the learning processes and materials was also a key factor identified by the evaluation as contributing to the project's success.

Regarding the length of the project, all organizations interviewed in the evaluation expressed the view that they would have liked the project to have continued beyond its end date. Analysis indicated that changes were more embedded in the organizations that had participated since the start. Among those included in the second phase, some changes were planned but it was less certain whether these would finally be implemented. The conclusion was that the project had underestimated the time needed for organizations to embed some of the new systems; some only had one or two business cycles to formalize these during the project duration.

Finally, although direct technical assistance was most valued by the producer organizations as a training approach (due to the possibility of developing trust and working in detail on real systems and information), and most wanted the project to continue, few considered it feasible to invest themselves in contracting the local consultants from own resources (although some organizations covered part of the costs for this during the project). This is partly a question of limited availability of resources and the prioritizing of other needs and also of historical tendency; technical assistance is usually seen as an externally-funded opportunity provided by NGOs and other partners, rather than a service that producer organizations are able to contract for themselves.

Case Study 19 – Facilitating Lending to Smallholder Producer Groups – The Twin Approach

Overview

This case study demonstrates how value chain partnerships can assist smallholder organizations to move up the value chain by becoming viable exporters and, in so doing, add value through more stable selling opportunities and higher prices. In the value chain partnership approach, anchor buyers and lenders come together with producer organizations and facilitate access to funding but, in this example, as yet mostly from ethical or social lenders.¹⁸¹ The attitude of commercial or mainstream banks to such arrangements, however, remains quite variable. The conclusion is that whilst value chain partnerships require substantial time and effort to gain traction, they can and do become sustainable in terms of continuity and benefits for participating farmers. The lesson on the one hand is that longer-term relationships with lenders and buyers underpin the development of smallholder producer organizations, and on the other that building financial management capacity should also include assisting lenders, including commercial or mainstream lenders, with developing their own in-house risk assessment and monitoring tools.

Background Twin is a UK-based charity working with more than 50 smallholder farmer organizations in 18 countries, representing approximately 400,000 coffee, cocoa, and edible nuts farmers. Twin’s mission is to create transformational change for smallholder farmers by unlocking value for farmers in the supply chain. It does this through supporting farmer organizations to become sustainable businesses through its Producer Partnership Programme¹⁸² and by developing market access through direct trading, marketing, and business advocacy.

Twin’s trading arm, Twin Trading, began importing coffee in 1987 and Twin co-founded the brand Cafédirect in 1991. Today, Twin Trading markets Fairtrade and sustainable-certified coffee to buyers in the U.K., Japan, various European markets, and the U.S., pursuing where possible a strategy of long-term relationships and strategic partnerships with its buyers. Recent examples include collaboration with Finlays, a leading coffee roaster, and Sainsbury’s, the second largest U.K. retailer, to develop and launch three single origin coffees produced by smallholder organizations in the Democratic Republic of Congo (Sopacdi), Malawi (Mzuzu), and Rwanda (Kopakama).

Most of the producer groups that Twin works with supply washed Arabica but a number produce natural Robusta. While Twin Trading does not buy Fairtrade-certified coffee only, it is its core business and the producer organizations Twin links with through its Producer Partnership Programme are either Fairtrade certified or in the process of gaining Fairtrade certification.

¹⁸¹ Anchor buyers and lenders are those organizations that engage with a producer association or co-operative at an early stage and through their commitment, demonstrate the viability of the business and the market opportunities that exist for the organization.

¹⁸² In 1997, Twin formally constituted its Producer Partnership Programme after having offered ad-hoc support to smallholder producer organizations for a number of years. This program supports coffee cooperatives and associations in six areas: strengthening financial management and business basics; governance; quality and adding value; climate and environmental management; women’s empowerment; and market access. Visit www.twin.org.uk for more information.

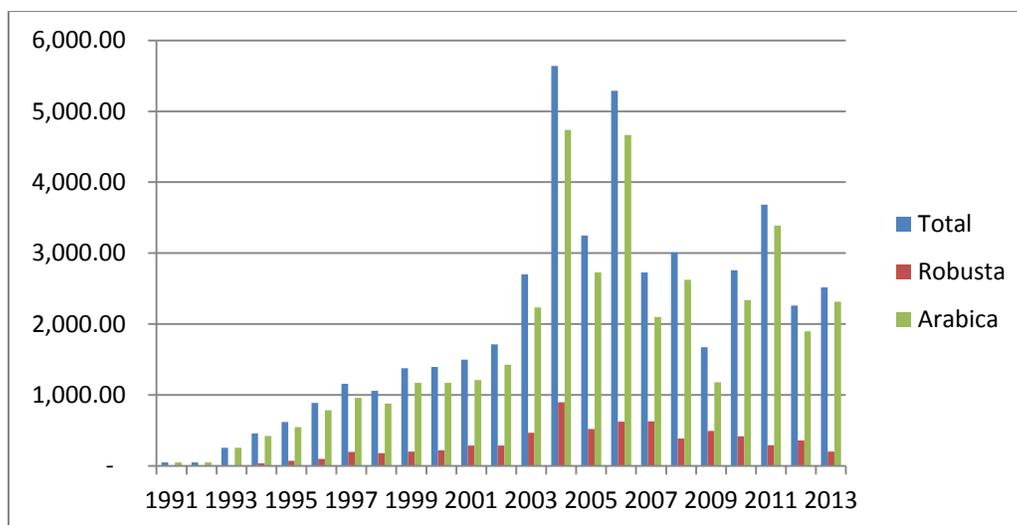


Figure 6.14 – Twin Trading Volumes 1991- 2013 (Metric Tons)

Approach to Risk and Finance. Twin’s approach to working with smallholder organizations on risk management and access to finance has several key components:

- Developing market access for smallholder groups; in some cases, being the first buyer to engage with a smallholder group and facilitate their access to international markets.
- Working in partnership with ethical or social lenders to facilitate trade finance and, in a few cases, medium- to long-term loans.¹⁸³
- Delivering training and advice to smallholder organizations on financial and price risk management.
- Working with lenders to strengthen their understanding of the coffee business and price risk and to improve the quality of information they receive from their smallholder clients.

Facilitating Lending. Twin’s interest in facilitating lending has been driven by both the need to secure coffee volumes through Twin Trading and the wider aim of strengthening producer organizations’ access to markets on sustainable terms.

As is clearly illustrated in the body of this report producer organizations have a range of finance needs that can be broadly understood as:

- Short-term needs for export finance (usually linked to contracts) – typically for 1-2 months
- Working capital needs for the season (not usually linked to contracts) – e.g. for 6 months
- Medium- to long-term needs for investment loans (typically 3-5 years) to fund infrastructure, expansion/diversification or renovation of coffee plantations

In Twin’s experience, the most challenging stage for a producer organization to access trade finance is when they are newly-established in the market but, fortunately, in the last 10 years there has been significant growth in the number of social lenders who are willing to engage with smallholder groups. However, these usually require purchase contracts or at least letters of intent to buy from regular customers such as importers or roasters, which poses a challenge for those who are just beginning to

¹⁸³ Ethical or social lenders: lenders whose mission includes enhancing the economic and social development and sustainability of their smallholder clients.

develop commercial relationships, in particular at the start of the season. Where harvest periods are relatively short, producer organizations are under pressure at the start of the harvest to gather coffee so that samples can be sent to buyers to agree contracts. But without actual contracts in place, it is very difficult to access the working capital necessary to collect that coffee, meaning the opportunity to collect a large portion of the actually available coffee may be lost because finance may not become available until the season is well underway and contracts have been concluded.

Although the context varies from one country or region to another, there are common barriers faced by smallholder organizations in accessing finance, including:

- Inadequate financial systems and internal capacity
- Lack of knowledge or awareness of who to approach to access finance
- Unwillingness of mainstream banks to lend to smallholder agricultural groups, due to perceived high risk and lack of understanding/knowledge of coffee sector
- High interest rates offered by local commercial banks¹⁸⁴
- Lack of guarantees (assets), in particular for longer term financing
- Lack of regular buyers
- Inadequate price risk management procedures¹⁸⁵

Response. To meet producers' export finance needs, Twin developed a combined strategy of building producer organization capacity, facilitating market linkages, lending directly, and developing relationships with ethical lenders.

The approach to facilitating lending mirrors that of Twin's Producer Partnership Programme, which is to support the incremental progress of the producer organization while building relationships and trust between the different actors. Where necessary, Twin's knowledge of the producer organization, including its management capacity and financial strength, has acted as a kind of informal guarantee or collateral during the initial period when the lender can get to know the client and test their performance.

The usual pattern of development has been to begin by supporting producer organizations to access trade finance against contracts with Twin Trading or other buyers; as trust grows between producer organizations, buyers, and lenders, it becomes easier for producer organizations to access working capital for the season and longer-term loans for investment in the business. In general, Twin does not work to establish new producer organizations from scratch and works instead with groups that are in the early stages of their development or those with more experience that can still benefit from strategic support and a partnership approach.¹⁸⁶

¹⁸⁴ In Twin's experience, it is possible to negotiate rates of interest with alternative or ethical lenders of 8-11% while local commercial banks usually charge more, in the range of 14%-18%.

¹⁸⁵ Most producer organizations with which Twin works with obtain very narrow margins, of on average 3-5 cents/lb. Taking into consideration the average rate of volatility of the NY market, it is evident that developing a clear and responsive strategy for buying, contracting, and price fixing is essential to avoid losses and the risk of defaulting on loans.

¹⁸⁶ The value of investment in Twin's Producer Partnership Programme has varied over time; in direct relation to Twin Trading's own purchases, the average cost per MT in any single year has been in the range of US\$200-US\$1,000. The investment has been covered by financial support from its Fairtrade buyer partners and by charitable funding. However, Twin's mission to support producer organizations goes beyond assuring purchases for

Facilitating Trade Finance

Early experiences. In the mid 1990s, Twin explored ways to offer pre-finance to smallholder groups by creating a revolving fund, managed by Twin but funded externally (initially by a private investor through Solidaridad in Holland). On presentation of a contract (either with a third party buyer or with Twin Trading) producer organizations could borrow up to 70% of the value with a limit of US\$100,000 per applicant, for up to 90 days. Twin would sign an agreement with the producer applicant, with final buyers paying the producer organization through Twin. This scheme worked well with few defaults; part of the informal guarantee was mutual interest, as many producers were also suppliers of Cafédirect so it served them to maintain a relationship with Twin.

This experience went on to inform a similar scheme created by Triodos in 1997, offering pre-finance to producer organizations certified by Max Havelaar (The Fairtrade National Initiative of The Netherlands, Switzerland, and Germany).¹⁸⁷ This was developed into their overall approach to lending using the triangular model of trade finance, whereby credit is extended to smallholder organizations against contracts, paid by the buyer on delivery of the coffee directly to the lender, who in turn pays the organization minus loan repayments and interest.

Growth. Twin's work on facilitating lending for trade finance increased substantially from 2004 onwards. The backdrop to this increase was the continued growth in sales of Fairtrade-certified coffee in the U. K. and a steady rise in the international coffee price, which increased the finance needs of producer organizations. In order to respond to the increased demand, Twin developed strategic relationships with social lenders to implement the triangular model of trade finance described above and illustrated in Figure 6.15.

its own business to widening and diversifying market access for the smallholder organizations with whom it works and increasing the value returned to them. Therefore, it regards the Producer Partnership Programme as an investment in the continued development of smallholder farmers and their organizations rather than a business cost. Individual buyers can invest in specific projects with smallholder organizations, carried out as part of Twin's Producer Partnership Programme and also benefit from the program as a whole.

¹⁸⁷ See www.triodos.com

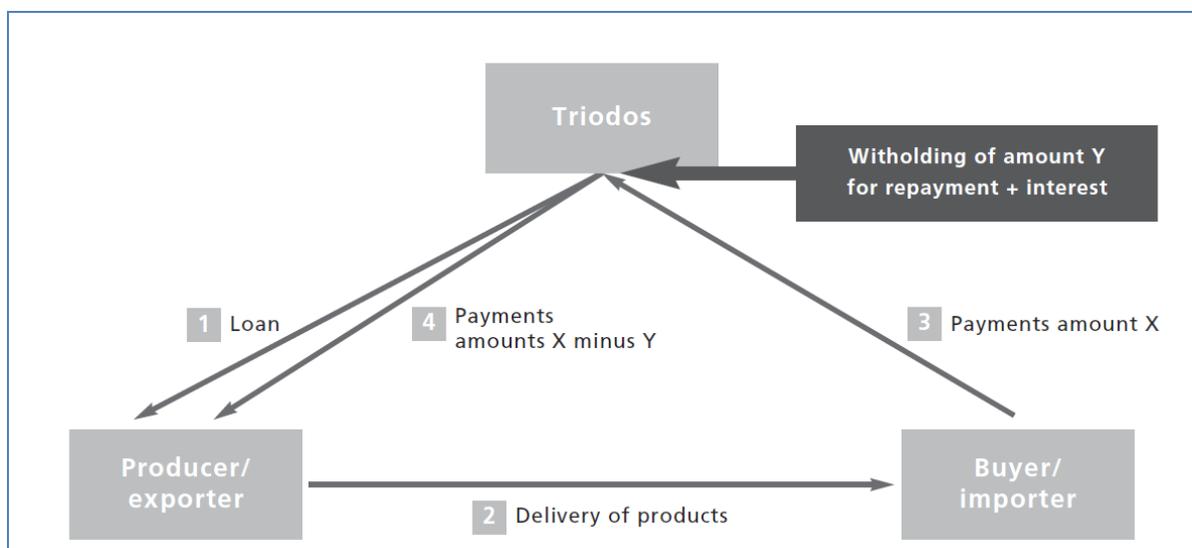


Figure 6.15 – Triangular Model of Trade Finance

Source: Triodos International Fund Management document on Trade Finance, 2004.

Where the risk of lending directly to a producer organisation has been considered too high, Twin has sometimes lent from its own funds, and born the risk. In these cases, Twin has some procedures in place for risk management by lending incrementally (e.g. pre-finance is only provided for a second container load (between 18 and 20 MT) when proof is provided that coffee for at least one container is stored in the warehouse) with close monitoring and on-the-ground contact through its producer partnership staff.¹⁸⁸

During periods of high prices and high price volatility, some producer organizations Twin has worked with have experienced defaults, with members not delivering committed coffee. Such defaults are usually caused by sudden price rises, when producer organizations have long-term fixed price contracts with buyers in place or have fixed the price for open contracts in advance but have not yet collected the coffee to fulfill these contracts. Volatility in differentials can also have an impact; e.g. in 2008/09, the local buying price in Peru increased significantly during the season, responding to increased demand for Peruvian washed Arabica (triggered by unusually high differentials in Colombia, where supplies were less than anticipated). Defaults have also occurred in situations where an organization has grown too quickly and lacks the infrastructure, and financial and management capacity to meet its commitments. The same is true when it has diversified and is making the mistake of using short-term finance to invest in projects with a long-term projected return.¹⁸⁹

¹⁸⁸ Twin’s producer partnership team includes associates who are based in the U.K., U.S., and in producer countries in Latin America and Africa, employed full-time or for a number of days per year on specific projects. Their time is covered by project funding and their expertise includes organizational strengthening, quality assurance, marketing, business, and certification support, and price risk management.

¹⁸⁹ Differentials are fluctuating values (in cents/lb), determined by market specifics, that link prices for physical (i.e. green) coffee with those on the futures markets of New York (Arabica) or London (Robusta). In this context, open contracts are those where all conditions, including quality, delivery, and the differential, have been stipulated except the actual price, which will be fixed, at a time and in a manner laid down in the contract, against a given

Twin's response is mainly pre-emptive, including work done through its price risk management program to help producer organizations be aware of the risks associated with certain types of contracts, and its work on general management and organizational support. When defaults occur on Twin Trading's own purchases, the usual approach is to continue working with the organization and recoup losses through future business. In some cases, Twin has been 'the first in and the last out', acting as an advocate for the organization in negotiations with buyers or banks to find a solution, and offering pre-finance for the new season in order to support the organization and inspire the trust of other buyers and lenders.

In 2004, Twin Trading lent just over US\$1 million in pre-finance and its contracts were used as guarantees for a further US\$1 million lent by ethical lenders. This increased year-on-year; for example in the period October 2005-September 2006, Twin Trading facilitated lending of US\$3.2 million of which US\$577,561 was from Twin Trading and the rest through third party lenders. This increased to US\$3.9 million in 2007-2008 and US\$4.1 million in 2011/12 in line with increasing international coffee prices. In 2012/13, the total was approximately US\$3.2 million and in 2013/14, US\$3.5 million.

Support to lenders. Lenders face challenges (in particular when they are newly established or new to the coffee business) to effectively monitor and support the performance of their smallholder clients and to understand the dynamics of the coffee market and how this will affect their exposure to risk. Twin's support to lenders has included: providing information on producer organizations, accompanying lenders on client visits, and delivering technical assistance to producer clients.

Twin has also worked to help lenders understand the risks associated with different kinds of contracts; traditionally banks have requested contracts stating a fixed price. Twin has worked with some lenders to promote the use of price to be fixed (PTBF) or open contracts, as under certain market conditions these can be attractive for producer organizations (but only if the principle is well understood and pricing decisions are taken in an informed and disciplined manner). In some cases, buyers have also been willing to sign contracts that provide a guaranteed sale and so are helpful for the seller to raise finance, but in which both price and differential will be fixed at a later date.

Longer-term Loans

In Twin's experience, once a producer organization has established a relationship with a lender and demonstrated the viability of its business, the lender is usually more willing to offer working capital for the season or longer-term loans for investment. This can be based on the producer organization's business plan, assets, or purchase intentions from a regular buyer or on a combination of these. However, even where trust has been established, lenders may still require additional assurances of the producer organizations' future cash flow. In such cases, Twin has continued to facilitate longer term loans, by providing a repayment mechanism against existing contracts between Twin Trading and the borrower.

For example, in 2005, Twin gave support to the coffee and cocoa co-operative union COCLA in Peru to access a loan facility from Shared Interest to invest in cocoa processing facilities. This loan was reimbursed through regular payments deducted from Twin Trading contracts. In 2006, Twin supported arrangements with Shared Interest to offer term loan facilities to Gumutindo, a coffee cooperative in Uganda, to refurbish its factory and warehouse. Security for the loan was provided in part by cooperative assets and also by future contract commitments from Twin Trading; Twin also offered a

delivery month of the futures market concerned. The combination differential/futures price then gives the final sales price FOB port of shipment. Such contracts are known as price to be fixed (PTBF) contracts.

guarantee of 50% of the loan value. The loan was repaid over a period of 5 years by deducting repayments from Gumutindo's coffee contracts with Twin Trading.

Although these kinds of loans are needed and have worked effectively, it is important to recognize that the repayment schedule can place a strain on a producer organization, in particular one that is growing and needs to re-invest in its business. One of the challenges is the unpredictability of the international coffee price during the repayment period; when the international coffee price is below the Fairtrade minimum these repayments are not difficult to manage, but it is more challenging in periods of high prices when trading margins narrow due to higher prices prevailing in the domestic coffee market.

Facilitating Trade Finance with Local Commercial Banks

Most of Twin's work has focused on collaborating with social lenders to make trade finance accessible to smallholder organizations. In some cases, however, Twin has explored the possibility of collaborating with local commercial banks through a system of internationally-provided guarantees. This model was trialed by Twin, Triodos, and Rabobank in Ghana in 1995/96, whereby Triodos Fonds (HTF) and Triodos-Doen lent money through Rabobank to a local bank. This money was used to leverage loans from the local bank to the cocoa cooperative union Kuapa Kokoo on a ratio of 1:5, meaning that every US\$1 of guarantee secured US\$5 of finance, with a first-loss agreement in place. Twin's longstanding relationship with Kuapa Kokoo helped to negotiate this arrangement and inspire the trust of the local bank. Twin explored trialing a similar approach with coffee organizations in Central America but found that there was insufficient interest from local banks to collaborate in this way.¹⁹⁰

In some contexts, the engagement of a producer organization with international financial institutions or regular Fairtrade buyers has provided informal and formal guarantees to local banks and has permitted producer organizations to access lending at more favorable interest rates. However, the possibility and desirability of engaging with the local financial sector depends in part on the local banking system itself and the political framework. For example, in Mexico it has historically been more common to access credit through government-supported schemes or, more recently, alternative financial entities, such as a Sociedad Financiera de Objetivo Multiple¹⁹¹ (SOFOM), rather than through commercial banks.

There are some contexts in producer organizations work with local banks, even if interest rates are higher than those offered by alternative lenders, due to the volume and nature of their business. For example, one Robusta producer organization working with Twin in Tanzania borrows locally at rates of 14-18% in order to be able to collect on average 5,000 MT from its members; it has explored working with international social lenders but found that it was not able to agree enough advance export contracts to use as collateral for a loan.

Gumutindo, the coffee co-operative in Uganda, is an example of an organization that began by working with ethical lenders and has recently started borrowing from a local commercial bank. Although the cost of finance is higher (at 17.5%), this support to their cash flow has enabled them to increase the volumes of coffee collected from its members. They found that depending only on pre-finance provided by international lenders limited their operations, in particular if the NY price (and therefore the local buying price) went up during the course of the season. The current facility from the local bank is for working

¹⁹⁰ In this context, first-loss refers to a socially- and environmentally-driven credit enhancement provided by an investor or grant-maker who agrees to bear any first loss on an investment in order to catalyze the participation of co-investors that otherwise would not have entered the deal. Sourced from The Global Impact Investing Network.

¹⁹¹ A SOFOM is a financial entity which may be regulated or unregulated and exists primarily to facilitate lending; clients can invest their own money in the fund and borrow against their deposits.

capital and is not linked to contracts, although evidence was required of past and anticipated sales; the next step will be to explore the possibility of pre-financing contracts, in either local currency or US dollars (borrowing in dollars would be at more a competitive interest rate, equivalent to that offered by alternative lenders.)

Gumutindo see this development as the latest evolution in their relationship with lenders. It began by borrowing directly from buyers, including Twin Trading, when their business was first launched in 1999 and it then developed relationships with two ethical lenders over the past 12 years. This enabled them to build a solid business; now, having used the local bank for nearly all of their local banking services since 1998, the combination of their track record as an exporter and a borrower and the existing relationship with the local bank is giving them the opportunity to grow further. Another advantage of working with local banks identified by Gumutindo is the opportunity to develop trust through frequent face-to-face contact, something that can be more difficult to achieve in relationships with international lenders.

Facilitating Lending to a Producer Cooperative: An Example From The Democratic Republic of Congo

In 2009, Twin started working with the smallholder farmer group Sopacdi in the Eastern Highlands of the DRC, through a three-year funded project. Together with the coffee roaster Finlays and the supermarket chain Sainsbury's, Twin developed a single origin coffee from this cooperative for consumers in the U.K. Twin worked with Sopacdi to strengthen and invest in all aspects of their operations, including: farm rehabilitation, quality management, infrastructure, procurement of equipment and buying procedures, processing methods, governance and management capacity, marketing strategy, and training on price risk management and international trade. However, operating in the DRC poses several challenges, including the lack of formal banking options or a regulatory framework for contract enforcement. This, combined with security issues and the relative inexperience of the producer organization, meant that a tailored approach was required.

For the first two years, Twin worked closely with Sopacdi to build its financial management capacity, at the same time marketing their coffee in European and U.S. markets. Support to financial systems included close accompaniment by Twin Producer Partnership Programme staff on the ground to install software and book-keeping systems and monitor the use of these during the season. Root Capital and Alterfin provided working capital during this period, using the contracts with Twin Trading and other buyers as guarantees. Finance for export was provided through Twin Trading against specific contracts, and Twin Trading bore the risk for these loans. During this time, Twin's Producer Partnership Programme team closely monitored performance, making weekly visits to review prices paid to farmers and ensure the money was being used to purchase coffee, reporting back to Root Capital every 1-2 months.

After this initial 2-year trial period, Root Capital and other lenders felt confident in lending export finance directly, rather than going through Twin Trading, with loans made against contracts with Twin Trading and other buyers. In addition, in 2011-12, Twin together with Oxfam Belgium and the micro-lender Alterfin developed an agreement to jointly offer trade finance to Sopacdi against contracts with Twin Trading for Oxfam and other buyers. Twin continues to accompany lenders on twice-yearly visits to the Sopacdi, and carries out business reviews every 6 months.¹⁹²

¹⁹² See www.alterfin.be/en

Despite the challenging circumstances in which producer organizations in DRC are operating, there have to date been no defaults on contracts. Sopacdi increased its export volume from 10 MT in 2008 to 171.6 MT of coffee in 2012. In the same period, Sopacdi's differential went from zero to +92 cents/lb versus New York, thereby more than doubling the farm gate price. During this time, the organization gained both organic and Fairtrade certification and increased its membership from 284 to 3,200 farmers. Today, Sopacdi has 5,600 members. Demand for Sopacdi washed Arabica exceeded supply in the 2012/13 season and volumes in 2013/14 reached 324 MT.

The work in DRC demonstrates the need for a holistic approach, in particular when working with organizations that are new to the market and/or operate in challenging circumstances. The work with Sopacdi took into consideration the key requirements for the long-term success of a producer organization, which would contribute to them becoming both a reliable supplier and a credible borrower in their own right.

As this example shows, this involves building the capacity of the cooperative to procure, process, and export coffee in a sustainable and reliable way; to continue to improve the quality of their coffee in order to generate higher farmer incomes; and to build relationships in a steady and sustainable way between lenders, producers, and buyers, building trust and mutual respect. Additionally, even in a challenging environment like the DRC, such organizations can over time also build successful relationships with lenders if producer organizations are given the support to manage their enterprises effectively, build strong cooperatives with the support of their members, and access higher value and stable markets.¹⁹³

Summary of Approach and Lessons Learned

Twin's position in the market and its network of relationships has enabled it to link and broker trust between buyers, producer organizations, and lenders. Twin's role in facilitating lending has been one of building relationships and mutual understanding along the supply chain and helping to strengthen capacity where needed.

Facilitating market access. Twin's work on promoting access to finance for smallholders cannot be separated from that on trade facilitation and its support for investment in processing facilities or quality management. Buyers who are willing to commit to buying ahead of the season and/or year-on-year, or who are prepared to engage with less experienced producer organizations can offer a crucial entry point for such groups to access trade finance and international markets.

Long-term relationships. In Twin's experience, the development of long-term relationships with both buyers and lenders underpins the progress of smallholder producer organizations. In some cases, it has been possible for producer organizations to secure finance earlier in the season against letters of intent to buy from regular customers, rather than signed contracts. In some instances, the promotion of long-term relationships between lenders and producer organizations has also led from access to just trade finance to the provision of working capital and/or longer-term loans.

Monitoring and technical assistance Some lenders can make funds available for technical assistance to invest in partner organizations. Twin's experience indicates that working with partners on the ground that have longstanding relationships with producer groups or that are implementing funded producer

¹⁹³ The Producer Partnership Programme investment made by Twin per MT in Sopacdi so far has been approximately US\$1,500/MT, based on the total volumes traded to date. However, as volumes continue to grow this average cost of investment will diminish over time.

support programs, has helped lenders to assess the risks associated with lending to specific organizations and to resolve any issues as they arise. It can be of value for lenders to undertake due diligence visits along with such partner organizations in order to develop a joint understanding of the client group and any relevant risks. These partner organizations can also assist with ongoing monitoring and support.

Building financial management capacity. The work Twin has carried out to strengthen the capacity of producer organizations – in particular, in business planning, management of cash flow as well as coffee procurement and pricing strategies – has laid the ground for better credit management and clearer financial reporting to lenders. Other lenders have invested in their own training programs in financial management because financial management capacity is an essential requirement for accessing and managing loans, along with quality management, good governance, and market access.

Recognizing the needs of lenders. Most recently, Twin has worked with lenders to develop their risk assessment and monitoring tools and has provided information that is relevant to their risk management on the functioning of the coffee market and on local market conditions in the countries where their clients are operating. Lenders have supported Twin’s activities in price risk management because they recognize the value that such training for producer organizations brings to their own risk management.¹⁹⁴

¹⁹⁴ Twin began its work on price risk management in 1997. To date, 284 organizations in Latin America have taken part in price risk management workshops, of which 162 are situated in Mexico, Central America, and the Caribbean (Mexico, Nicaragua, Guatemala, El Salvador, Honduras, Costa Rica, Dominican Republic) and 122 in South America (Peru, Ecuador, Bolivia, Brazil). In Africa, Twin has been conducting workshops and giving direct support to smallholder coffee organizations on this topic since 2008 in Uganda, DRC, Malawi, Tanzania, and Rwanda, as part of its wider support to develop their sales and marketing.

Case Study 20: Evolving Supply Chain Management – An Example From China¹⁹⁵

Overview

This case study demonstrates the importance of building trust through value chain partnerships, leading to value chain development and sustainability. An anchor buyer, in this case Nestlé China, assists with extension advice and enables willing and qualifying smallholders to individually forward sell some of their crop. The conclusion is that once individual smallholders realize the advantages of being part of a particular supply chain they will abide by their obligations, while holding guaranteed sales contracts at the same time allows them to become more ‘bankable’. The lesson is that this requires long-term commitment and, in this case, that farmer aggregation is not necessarily always a prerequisite. But aggregation is probably the answer where individual grower volumes are too small, provided of course that such entities can demonstrate sufficient advantages to ensure both loyalty and commitment.

1. Background

With its population of some 1.35 billion people, China is often viewed as a potential ‘game changer’ in terms of expanding global coffee consumption, yet the country’s potential to quickly become a major coffee producer is sometimes ignored. As a rare example of this potential, Nestlé-China evolved from relying almost exclusively on Arabica coffee imports in 1991 to 100% local procurement from 1997 onwards. Coffee production in China dates back to 1900 but was not in any sense seriously encouraged until 1988 when the Chinese government, with support from the UN Development Programme (UNDP) and Nestlé-China, initiated a significant development in Yunnan Province, with the total planted area growing from basically nothing to about 8,000 HA by 1998; today Yunnan is easily China’s most significant coffee growing province, accounting for about 95% of total current production.

Arabica, mainly Catimor and all wet-processed, is grown on terraces in hilly terrain at altitudes of 800 to 1,200 metres with a currently planted area of around 104,000 ha (including substantial numbers of immature trees).¹⁹⁶ Projected output for the 2014 crop year is between 70,000 and 80,000 MT but production is expected to rise sharply in future as trees mature; indeed, well established growers already average a hefty 2.25 MT per ha. The current government target is to reach 167,000 ha planted to coffee, while local estimates put the total potential production in the different prefectures of Yunnan Province at about 300,000 MT. This suggests that within a relatively short period of time China will become the single-largest producer of Washed Arabica in Asia, thereby leapfrogging over many current producers in Africa and Latin America as well.¹⁹⁷ In 2012, exports exceeded 1 million bags for the first time, while China also imports around 1 million bags annually, which is mainly Robusta for blending purposes.

¹⁹⁵ This case study has been made possible by the cooperation of Nestlé-China. With particular thanks due to Mr Wouter De Smet of Nestlé Agricultural Services in Yunnan Province.

¹⁹⁶ In the past four years alone the area planted to coffee in Yunnan Province has increased from about 29,000 ha to about 104,000 ha.

¹⁹⁷ Many growers process coffee to the green bean stage themselves on their farms or through contract milling of parchment. They also supply fresh cherry to collectors/traders who utilize wet-processing equipment.

Nestlé-China dominates the domestic market for soluble coffee and 3-in-1 products¹⁹⁸ but there is a growing number of manufacturers producing roasted and ground coffee as consumer interest in coffee is on the rise in China.¹⁹⁹

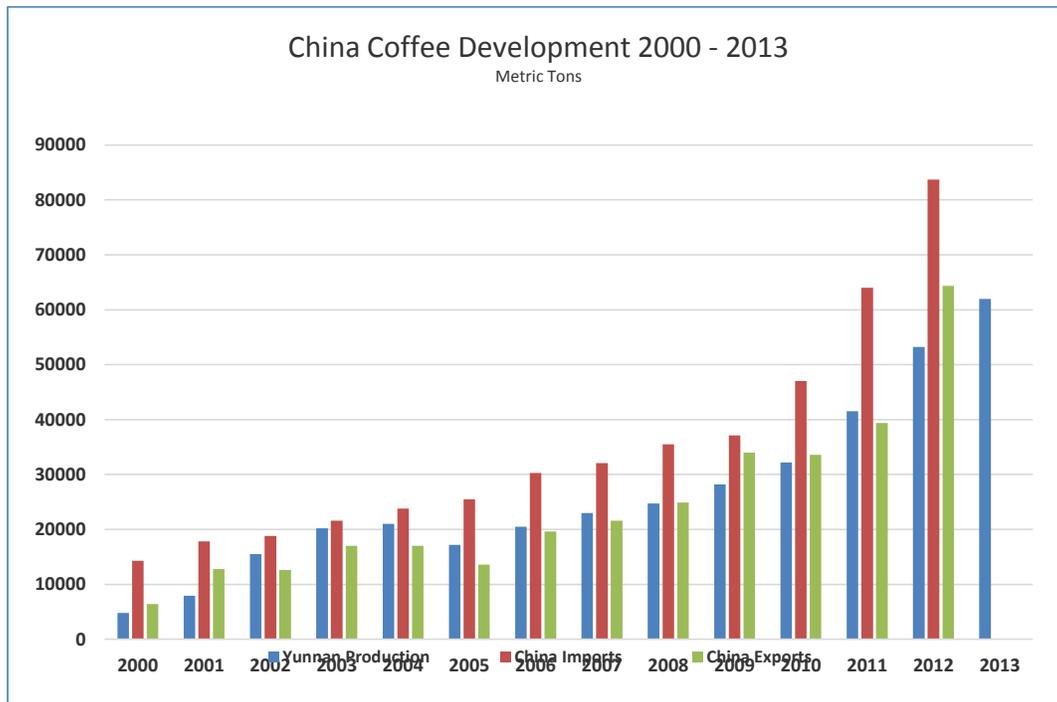


Figure 6.16 – China Coffee Development 2000-2013 (MTs pa)²⁰⁰

2. Brief Sector Overview

Production was initially state-driven but not all state-owned plantations weathered the 2002/03 coffee crisis. This led to much of the land being parcelled up and distributed between employees, companies, and/or businessmen who purchased or leased some areas, and by local farm workers who simply occupied portions to maintain alongside their own traditional farming enterprises. As a result, while in some areas growers still lack formal ownership, they operate and manage their coffee farms as would any tenant or smallholder.²⁰¹ Production in the Dehong/Lincang prefectures is however still a combination of parastatal and private growers, with two companies operating core plantations and collecting fresh cherry from surrounding out-growers they support with seedlings and, occasionally, fertiliser. Elsewhere in Yunnan Province coffee is mostly a smallholder crop with 74% of growers having

¹⁹⁸ 3-in-1 coffee refers to ready-to-drink products, usually delivered in powdered form via single serve sachets and containing coffee with whitener and sweetener.

¹⁹⁹ 3-in 1-products are usually a mixture of soluble coffee, coffee creamer, and sugar.

²⁰⁰ Source: Yunnan Production (Green Bean) – Nestlé-China; China Import/Export (All forms of coffee): ICO (2013 n/a)

²⁰¹ Land ownership in China is separate from land use, with land either owned by government or by rural collective economic organizations. Land-use rights vary with the purpose of the land. The Chinese government is however instituting guaranteed 30-year land rights to encourage longer-term farm investment. Nestlé-China suppliers have to provide official land use certificates.

less than 3 ha, and often much less. In addition, there are a number of large commercial plantations.²⁰² The Chinese coffee sector is being progressively liberalised with a mixture of domestic and international traders/processors, exporters and importers, private and state-owned firms, and a growing number of soluble and R&G manufacturers.²⁰³

3. Farmer Support

Grower support, extension and training is a mixture of public and private initiatives, mostly organised through government county coffee offices and coffee associations. Levels of support vary but to encourage new plantings, some prefecture or local government authorities provide some subsidies based on the area planted to coffee or the number of seedlings purchased. Companies such as Nestlé-China produce and subsidize the sale of seeds for ease of transport over large distances in mountainous terrain.

Individual small farms can access short term credit from rural credit banks either as a group, through connections, or by offering property (usually houses) as collateral.²⁰⁴ The use of bank accounts is increasing and there is evidence that some growers with proven track records as suppliers (e.g. to companies such as Nestlé-China) are able to obtain loans. Long-term agricultural investment finance is more difficult to obtain and is expensive.

Moves towards sustainable coffee farming through verification/certification and government initiatives to promote centralized wet-processing units are promoting farmer aggregation into cooperatives. This is meeting with mixed success, however, as farmers seemingly prefer to operate individually, perhaps reflecting past experiences with aggregation efforts. As has been seen in other countries there is also the risk that collectors or middlemen create 'cooperatives' to benefit from potential premiums for certified coffee, something that requires strict vigilance through sustainability standards.

4. Nestlé Agricultural Services

Nestlé Agricultural Services (NAS) has built a network of recognised suppliers, mostly individual farmers, who benefit from NAS training, provision of extension advice, and sale of subsidized coffee seeds.

NAS is dedicated to broad farmer support in the countries where Nestlé operates processing plants; in Yunnan Province, NAS operates an extensive research and development coffee farm to compare and test different varieties. It also helps demonstrate modern coffee farming practices, water-efficient wet-processing, anti-pollution or water sanitation measures, and good farming practices. Training includes provision of 'farm books' for farmers to record income as well as expenditure on farm inputs, labor, and other expenses, so as to promote an understanding that coffee is a business and farmers must know their cost of production. NAS coffee services are demand-driven and are available to both Nestlé-China coffee suppliers and non-suppliers alike. In this regard, Nestlé-China has signed a memorandum of understanding with the Pu'er Prefecture in Yunnan Province to support coffee development: anyone can submit a request for training but preference is given to groups of at least 10 persons. This approach has enabled Nestlé-China to link smallholders, village communities, and plantation owners to its supply chain. However, due to the rapidly-expanding area under coffee and the growing number of suppliers,

²⁰² Yunnan Province is divided into 16 Prefectures, each with its own local government. Coffee is grown in about 10 of these but the main coffee areas are in Pu'er, Lincang, Baoshan, Dehong, Xishuanbanna, and Wenshan

²⁰³ Individual smallholders are tax-exempt. Commercial growers pay income tax, and traders are subject to income tax, value-added tax, and local taxes.

²⁰⁴ Large companies and plantations can offer land as collateral but not small farms. However, a recent central government policy decision to extend this ability to individual farmers promises to address this.

the intention is to focus more on members of Nestlé-China's 4C²⁰⁵ Units. In fact, commencing with the 2014/15 season, Nestlé-China will only purchase so-called 4C-compliant²⁰⁶ coffee as part of its undertakings under the Nescafé Plan. Nestlé-China has also concluded an agreement with a fertilizer company to provide training on best fertilizing practices and to supply fertilizers at a discount to NAS 4C Unit members. This includes establishing a distribution warehouse close to Nestlé's Simao buying station, enabling farmers to collect fertilizers after delivering coffee.

Specific additional training is also provided to farmers who are selling their coffee to Nestlé-China. This training includes Nestlé's quality requirements as the company accepts only specific qualities. Growers deliver green bean to the Nestlé buying station where the quality is assessed and coffee is either accepted or rejected. There is a penalty system for both too high moisture content or defect count, while above-average quality warrants a bonus incentive. This type of 'positive quality control' encourages farmers to improve the quality they deliver and the Nestlé experience is that, over the years, quality in fact has improved. However, constantly growing numbers of new suppliers and variable weather conditions do mean that coffee continues to be rejected as well.

5. Evolving Approach to Supply Chain Management

Nestlé-China twice weekly announces a reference price for both conventional and 4C-compliant coffee, based on the New York-settled price of the previous day. Interested farmers have been trained in how to convert US cents/lb prices into local currency and are familiar with the Nestlé price calculation. Price announcements are sent on the day (Mondays and Thursdays) by mobile phone to all registered suppliers and are posted at the entrance to the purchasing station.

Nestlé-China has faced challenges stemming from this approach to pricing and to delivery from farmers. As purchases grew, so did the number of suppliers, making it increasingly difficult to handle all arrivals at the Simao buying station within the same day, and at peak times sometimes not even within a few days. Furthermore, growers from more distant areas could even find themselves unable to deliver coffee during the valid period of a given reference price, leading to disappointment if, on arrival, they found the price had dropped.

To address both issues, Nestlé-China in 2007/08 introduced pre-scheduled delivery contracts that allow growers to commit a quantity for forward delivery each time a reference price is announced. This is subject to a maximum volume per contract and five or six such contracts during a season, depending on the capacity of the grower concerned. The delivery date is set by mutual agreement and on arrival the coffee is handled separately and within the day.

Sixteen 16 contracts were signed in that initial season, climbing to 78 by the 2012/13 season. Currently, all 4C-compliant growers qualify automatically. Failure to deliver as per contract disqualifies the producer from supplying Nestlé-China but to date the compliance record is exemplary, something Nestlé-China attributes to its close grower-relationships. In instances where growers cannot meet an agreed delivery date, the contract will be rearranged by mutual agreement provided the delivery takes place before season's end, in which case the original reference price is maintained. In theory, growers should commit only already-harvested coffee, but in practice this is not always the case and this

²⁰⁵ 4C refers to The 4C Association which includes a code of conduct and supporting practices and verification. For more detail see: <http://www.4c-coffeeassociation.org/>

²⁰⁶ 4C or The Common Code for the Coffee Community is a mainstream base-standard for sustainable coffee production that relies on verification rather than certification. The Nescafé Plan is a global Nestlé undertaking that supports responsible farming, production and consumption of coffee.

stricture is not stringently observed because, realistically, it is impossible to verify this during the harvest season; experience to date also suggests it is not essential to do so.

The benefit of this approach for growers is that during the season not only can they secure a sale when they consider the day's price attractive but they can also take advantage of any price spikes that might occur. At the same time, limiting the volume per contract and requiring that concluding such contracts be spread over a season ensures growers do not commit an entire harvest on a single price point.

6. Conclusion. The Nestlé-China approach is interesting for a number of reasons. Like the international trade in coffee, it is based on mutual trust. Building trust takes time but Nestlé-China has shown it can be done as have the individual smallholders, who have abided by their obligations because they realise the advantages associated with being part of this supply chain. Growers can obtain a ready sales price (and the buyer an assured supply) while also retaining the ability to benefit from subsequent price rises, as they are required to spread such sales over the course of a season.

With secure sales in hand growers become more 'bankable', saving them from having to rely on expensive informal credit while also avoiding forced early season sales due to lack of ready cash. For its part, Nestlé-China has been able to continue expanding its purchases of quality coffee, and keep up with growing demand, by proactively providing extension services to farmers that include seeds of superior varieties and training in good agricultural practices, particularly as these refer to coffee and with a focus also on coffee quality. Finally, by collaborating with local government in terms of scheduling and providing support to farmers, Nestlé-China has enabled extension to be delivered in an efficient and optimized way, maximizing the impact and the number of farmers reached.

Clearly, to create this kind of system requires resources, long-term commitment, and an 'anchor buyer'. Nevertheless, in theory there are no reasons why this cannot function elsewhere provided farmers see real advantages in being part of such a supply chain and therefore will not easily risk being excluded by reason of default. Where individual growers lack volume, the answer probably lies in farmer aggregation, provided such entities can demonstrate sufficient advantages to ensure both loyalty and commitment.

Case Study 21: Extending Access to Finance through the Use of Supply Chains

Objective: In light of declining coffee yields and quality in Cote d'Ivoire, Olam International, through its local subsidiary Outspan SA, sought to maintain its supply of high-quality coffee in Cote d'Ivoire by supporting farmers and cooperatives in its coffee supply chain.

Response: In 2012, Olam began a three-part livelihood support program for local farmers and growers that would directly and indirectly support its supply chain for coffee. This program aimed to increase the volumes and the quality of production in Cote D'Ivoire. The three parts comprise: 1) introduction of good agricultural practices to cooperatives in order to access better technologies and management techniques; 2) asset building for farmers and cooperatives; and 3) rejuvenation of coffee trees and farms. Providing access to finance was one of the key mechanisms within this program for increasing the volume and quality of coffee available to Outspan.

Box 6.6 – High Level Profile of Olam²⁰⁷

Olam International is an agri-business operating in 65 countries. It works within value chains to identify and implement measures to grow responsibly as well as to sustainably deliver products. In 2010, Olam introduced The Olam Livelihood Charter, which focuses on eight core areas: 1) Finance, 2) Improved yield, 3) Labor practices, 4) Market access, 5) Quality, 6) Traceability, 7) Social investment, and 8) Environmental impact

Olam has been operating in Côte d'Ivoire since 1994 and currently works with over 85,000 farmers in the country through partnerships with more than 1,000 cooperatives. It is one of the largest exporters of cocoa, coffee, cashew, cotton, and wood products from Côte d'Ivoire. For its coffee operations, the company takes an integrated value chain approach with customers, working to ensure full traceability from origination to delivery.

Background:

From 2000-2010, Robusta prices were both volatile and experiencing significant declines. Ivoirian farmers struggled to remain afloat during this period, as the lower prices threatened their viability. Given this price volatility, farmers began to limit investment in their operations and neglect their farms by choosing not to replant older plantations; this ultimately lowered yields and quality, resulting in even lower prices. Given that farmers did not have access to financial risk management instruments they were forced to manage price risk through suboptimal management techniques, such as diversification of crops, etc.

Also during this period, cooperatives did not have the necessary funds to purchase the infrastructure to hull their own coffee, which meant they were largely dependent on third-party hullers whose processing resulted in lower quality coffee at a higher cost. This led to a drop in the national coffee crop from 350,000 MT in 2000 to the current crop of around 100,000 MT, which has seriously impacted the ability of Outspan to access and trade coffee of sufficient quality in the quantities it desires. It also negatively impacted the ability of farmers to get adequate finance to invest in their operations.

Action

²⁰⁷ More information on OLAM and its operations and its Livelihood Charter is available at <http://olamgroup.com>

Given its desire to protect its access to high-quality coffee (and thus its supply chain) while supporting OLAM’s Livelihood Charter, Outspan introduced a holistic program that would allow farmers to produce larger volumes of coffee of better quality. This required farmers both to make appropriate agricultural decisions and be able to borrow the capital necessary to invest in their operations. The program therefore had to address a lack of finance for asset building, along with price risk and yield risk. As such, Outspan choose to focus on building farmer/cooperative capabilities and providing these groups with the necessary resources to be able to operate on a sustainable basis.

Approach

Before this initiative was introduced in 2012, there was very limited involvement of exporters in the supply chain. In general, exporter participation was limited to pre-financing the licensed buying agents (LBAs)/cooperatives for their working capital requirement and buying bush coffee from them. Outspan looked to carry out the program by providing direct support to farmers and cooperatives in the supply chain.

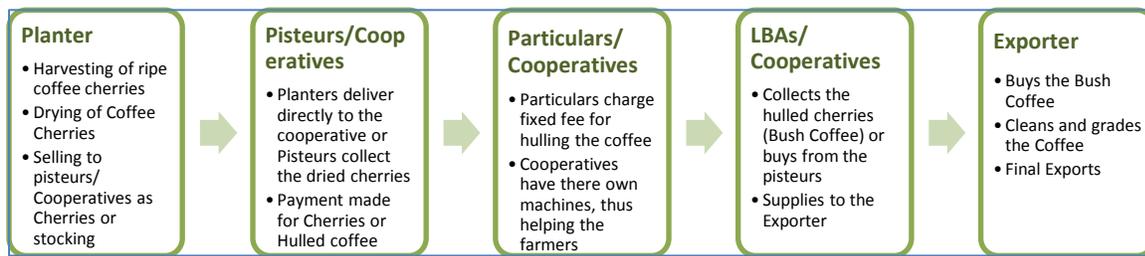


Figure 6.17 – OLAMS Supply Chain / Value Chain Approach

Outspan’s program needed to break the vicious cycle created by poor yields, high production costs, and exposure to risk. This required that Outspan take a holistic approach that addressed the challenges within the supply chain, beginning with production, through to processing, and finally to marketing. By supporting the whole supply chain, the Outspan program would hopefully guarantee better supply and quality of production. Cooperatives were critical to the program’s success as they enabled farmer groups to come together and get better value for their produce compared to selling it directly to LBAs. However, before this program, these cooperatives could not provide and farmers could not access other services or finance from exporters. There were three primary project activities:

I. Farmer Training

Outspan carried out farmer training that focused on best practices at the production end of the supply chain, which could improve yields and assist farmers in getting higher prices. The best practices covered in the training were primarily in the areas of farm management and related to post-harvest practices. OLAM developed material and organized training sessions to communicate these practices to farmers. Cooperatives were selected based on their organizational strength, production volumes, and openness to innovation. Farmer selection was conducted by each cooperative and the training sessions provided a mix of classroom and on-field training. The main activities were capacity building around good agricultural practices in order to improve the quality of coffee and yields. The activities under this umbrella included training on good agricultural practices, use of model farms to explain practical

operations, and the dissemination of posters explaining good agricultural practices. The training typically covered one or more of the following topics: post harvesting practices, good storage practices, coffee defect control, rain water harvesting, use of fertilizers and pesticides, and farm preparation for planting

II. Asset Financing

In order to bring down the cost of hulling and to ensure that farmers and cooperatives could control for quality, the program aimed to provide asset financing for hulling machines. The hope was that the farms could increase output and ensure the best outcomes for cooperatives and growers. These machines would reduce the costs of processing and spare farmers and cooperatives from utilizing more expensive third party hullers. This work began with assessment of available hulling machines in the market. Following the assessment, it provided asset financing to key suppliers for the purchase of shortlisted machines. This was done through Outspan's cooperative network in two phases: November 2012 - January 2013, and November 2013 - January 2014.

Outspan assesses the demand among the cooperatives for hulling machines at the start of the crop year. Based on the numbers of hulling machines to be purchased, the price of the machine is centrally negotiated. In general, each machine costs between US\$2,500-4,000. These machines are then given to the cooperatives as material finance. The amount is recovered from the cooperatives in the same crop year from the deliveries made by the cooperative (US\$10-20/MT delivered). If the cost is not recovered in one year, it gets carried forward to the following year. Essentially, the finance is for 6 months but can get carried over for 18 months. This finance is at zero cost to cooperatives.

III. Promotion of High-yielding Varieties Through Coffee Rejuvenation

Finally, Olam wanted to encourage farmers to rejuvenate older plantations by planting higher-yielding varieties to improve the overall availability of coffee and the quality of that coffee. The Olam program encouraged the development of nurseries at cooperative level and its support included the cost of setting up the nursery, seeds, monitoring, and technical support. Once ready, the saplings were distributed to farmers to enable them to replant part of their land with these higher yielding varieties. This work was carried out with 20 cooperatives per year in two phases: September 2012 – June 2013, and September 2013 – June 2014. In the crop rejuvenation program, the seeds and infrastructure (bags, sickles, and water pumps) were provided on a grant basis, while the cooperative bore some cost of maintenance of the nurseries for around 6 months. Partial cost of this maintenance was reimbursed to the cooperative at the end of the crop year in the form of cooperative premiums.

Outcomes

There has been some level of success within all three areas of the project. As a result of the work on implementing good agricultural practices, 6,000 farmers were trained directly and another 20,000

farmers indirectly.²⁰⁸ Following these initial years, it is hoped that 10,000 farmers can be trained annually and that 75% of procurement will be derived from supplier-owned hulling machines.²⁰⁹

The program financed 61 hulling machines for 37 suppliers in the fiscal year to June 30, 2013²¹⁰. In FY14, this same program is covering 37 hulling machines for 25 suppliers. As a result, better quality coffee has been received from suppliers having their own hulling machines, and suppliers have seen better margins due to hulling charges and quality premiums. The savings to farmers and the additional revenues from the new hulling machines are significant. The average cost charged by third-party hullers is about 25 CFA/kg (US\$50/MT). Cooperatives conducting their own hulling themselves can manage 10-12 CFA/kg (US\$20-25/MT). This is direct additional revenue to the farmer. On the quality front, old hulling machines can give outputs of anywhere between 30-50%. Outspan conducted a randomized that showed the average outputs in Côte d'Ivoire were approaching 43%. The new hulling machines being given under this program can give outputs between 48-52%. The higher outputs result in higher saleable quantities for the farmer. Also, these machines better maintained the quality of green coffee. Hulling with these machines already reduces damage to beans by 2-3%; this enables farmers to get quality premiums for their produce, which could range from US\$20-50/MT.

While the project has been largely successful with farmer training and hulling machine placement, success with the crop rejuvenation program has not come as easily. The crop rejuvenation programs required significant resources in order to gain the necessary scale and given that all finance has come from Olam's own funds, there is a limit to the size of the program. In the future, the program hopes to access additional funding to support its crop rejuvenation efforts and it is currently in discussion with Conseil de Café-Cacao for a possible public-private partnership for crop rejuvenation.

Lessons Learned

In a program where Outspan invests in its supplier cooperatives throughout the production cycle and only seeks to benefit from the increased throughput and quality improvements, side-selling always remains a significant risk. To manage the risk that cooperatives will sell their output to other companies, Outspan only works with cooperatives that have and maintain a track record with the company. It keeps a record of its exposures to each cooperative and depending on its track record and any side-selling adjusts accordingly. Outspan also maintains robust tracking mechanisms with the cooperatives, and only holds collateral in the form of vehicles. Finally, Outspan provides a fair market price for purchases. Given that its prices are competitive with the market, there is little motivation for the farmer to sell elsewhere.²¹¹

²⁰⁸ At a rough estimate, there would be 150,000 Ivoirian coffee farmers, of which Outspan would be sourcing from approximately 40,000 farmers.

²⁰⁹ The quality of hulling machines plays a vital role in the output and quality of the coffee. Although not part of good agriculture practices, it is a critical lever to ensure final quantity and quality of produce.

²¹⁰ Fiscal year for Outspan runs from July till June

²¹¹ These activities are primarily focused on managing the yield and quality risks. As far as price risk is concerned, the farmers are protected against price fluctuations by the regulatory body, which sells the crop forward and, depending on the realizations, declares a fixed/minimum farmer price for the season.

Summary

Outspan's approach has been to work with small- and medium-sized suppliers, growing its business by first helping them grow theirs. Support for initiatives that enable its suppliers gain access to more and better quality coffee is central to this idea. This enables Outspan to earn more through both higher throughput and also better margins. The internal accruals and the margins that Outspan makes from its operations are enough to support the training programs and hulling machine purchases. However, demand for support through the coffee crop rejuvenation program outstrips Outspan's allotted resources for crop replanting.

References

Case Study 8

Giovannucci, D. 2002. Colombia Coffee Sector Study. Environmentally and Socially Sustainable Development, Latin American and Caribbean Region. The World Bank, 2002.

FNC. 2012. Credit Lines and Programs of Incentives for Coffee Growers, Year 2012. National Federation of Colombian Growers. In Spanish: Líneas de Crédito y Programas de Incentivos para Cafeteros, Año 2012. Federación Nacional de Cafeteros. Colombia.

FNC. 2011. Credit Lines and Programs of Incentives for Coffee Growers, Year 2011. National Federation of Colombian Growers. In Spanish: Líneas de Crédito y Programas de Incentivos para Cafeteros, Año 2011. Federación Nacional de Cafeteros. Colombia.

FNC. 2011. Caficultura Climaticamente Inteligente. Informe del Gerente General. LXXVI Congreso Nacional de Cafeteros. 2011.

FNC. 2012. Carta del Gerente de la Federación Nacional de Cafeteros. Cambios al Programa PSF.

FNC Website (Statistics and Reports)

Cano, C. G.; Vallejo, C.; Caicedo, E.; Amador, J.S. Calderon, E, Y. 2012. El Mercado Mundial del Café y Su Impacto En Colombia. Borrador de Economía # 710. May, 2012. Banco de la Republica. Bogotá, Junio de 2012.

Silva, R. Santiago (2012). Government Economic Advisor in Coffee Matters. Efectos de los Programas de Renovación de Cafetales sobre el Productor y Beneficios para el Caficultor en Colombia 2007-2011.. Power Point Presentation.

Reyes, C. 2009. Coffee plantation renewal programs: Key instruments for the Colombian coffee sector. Camila Reyes del Toro. Power Point Presentation. March 2009.

Arias, A. 2007. La política cafetera en Colombia. Andrés Felipe Arias Leiva. Noviembre de 2007. Ministerio de Agricultura y Desarrollo Rural.

Muñoz, L. G. 2010. Colombian coffee sector Outlook. World Coffee Conference 2010. International Coffee Organization. Power Point Presentation by Luis Genaro Muñoz

General Manager FNC. February 27, 2010.

Personal Communication with Santiago Silva Restrepo (August, 2012). Government Economic Advisor in Coffee Matters. National Coffee Fund/Ministry of Treasure and Public Credit.

Case Study 12

ALMEIDA, L. F.; ZYLBERSZTAJN, H. Análise Comparada entre o Mercado de Crédito Agrícola no Brasil e nos Estados Unidos. Organizações Rurais & Agroindustriais, vol. 14, n. 1, 2012, p. 76-90.

BANCO CENTRAL DO BRASIL: www.bcb.gov.br

BIALOSKORSKI NETO, S. ; SOUZA, Juliana Vilela Prado de . Formação das Cooperativas de Café no Brasil: uma análise econômica e institucional. In: III Encontro de Investigadores Latino Americanos de Cooperativismo, 2004, São Leopoldo/RS. III Encontro de Investigadores Latino Americanos de Cooperativismo.

COSTA, C.H.G.; ANDRADE, F.T.; JUNIOR, L.G.C.; CALEGARIO, C.L.; ALBERT, L.H.B. Alternativa de Financiamento para a Cafeicultura – “CPR Financeira por Índice”. 48º Congresso SOBER – Sociedade Brasileira de Economia, Administração e Sociologia Rural, Campo Grande, julho, 2010.

CETIP S.A.: www.cetip.com.br

de Sousa, Eduardo Leão de Sousa and Fernando L. Pimentel. "Study on Cedula de Produto Rural (CPR) – Farm Product Bond in Brazil", Rural Finance Innovations, The World Bank, 2005.

Food and Agriculture Organization. "New Instruments of Financing Under Future Crops – The Brazilian Experience of the CPR System: Opportunities and Issues for Ukraine", December 2011.

IVANAGA, G. Cafeicultura – A Cédula de Produto Rural como Alternativa de Financiamento. Programa de Pós-Graduação em Administração – Universidade Federal do Rio Grande do Sul, 2007.

OZAKI, Vitor A.. Em busca de um novo paradigma para o seguro rural no Brasil. Rev. Econ. Sociol. Rural [online]. 2008, vol.46, n.1, pp. 97-119. ISSN 0103-2003.

PESSOA, A. Do Agro para o Negócio. Agroconsult. Maio, 2012

PIMENTEL, F. CPR: de onde partimos e para onde vamos? Preços Agrícolas, v.14, n.161, p. 9-11, mar. 2000.

Lamkin, Jeff. "CPR's and Investors View".

RIZARDI, S. A. CPR Física como Modalidade de Financiamento e Comercialização de Produtos Agropecuários. Programa de Pós-Graduação em Administração – Universidade Federal do Rio Grande do Sul, 2007.

Secretaria de Comércio Exterior - Ministério do Desenvolvimento, Indústria e Comércio:
<http://aliceweb.desenvolvimento.gov.br/>

WEDEKIN, I. Gerenciamento de riscos e novos instrumentos para o financiamento do

Agronegócio. Seminário de Planejamento Estratégico Empresarial 2014. CSMIA–ABIMAQ–Outubro, 2013.

SAES, M. S. M.; MIZUMOTO, F. M.; JUNIOR, R. P.; CAMPOS, J. P. V. Universidade do Café Brasil & Centro de Conhecimento em Agronegócios da Universidade de São Paulo (PENSA). Pesquisa sobre o Perfil do Produtor Rural de Café do Brasil. Março, 2008

Case Study 20

China and Yunnan Briefing and Summary with NAS Needs Assessment Report, 2013

Training and Technical Assistance as provided by NAS Simao, 2013

Arabica buying procedure 2013/14 season at Simao Buying Station, 2013

2012/13 Coffee Buying Season Overview, NAS Nestlé-China, 2013

'Coffee in China', ICO Document ICC-109-12, 2013

History of Coffee in China, NAS Nestlé-China, 2014

White Paper on Nestlé Coffee Development in Yunnan Province, 2014