

Contract farming in Ethiopia

Concept and practice



ISBN 978-94-91629-07-5

Holtland, G. (ed.). 2017. Contract farming in Ethiopia: Concept and practice.
Arnhem, The Netherlands: AgriProFocus.

editing Ruth Davies

graphic design Het Lab, ontwerp + advies

print De Groot - grootsgedrukt.nl

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Edited by Gerrit Holtland



Photo on cover

Green beans, Meki Batu Union, case 6; photo Gerrit Holtland

This publication is a joint production of AgriProFocus and its partners, who are mentioned below in chronological order of their involvement in the learning track on contract farming.



AgriProFocus is an international network with Dutch roots that promotes agri-entrepreneurship in emerging markets. The network is active in 13 countries in Africa and South East Asia and links 22,000 agribusiness professionals worldwide. Network members involved in this publication are Agriterra, Fair & Sustainable, Heineken, ICCO, KIT, SNV and Wageningen UR. See <http://www.agriprofocus.com/ethiopia>



The International Centre of Advanced Mediterranean Agronomic Studies – Institute of Bari (CIHEAM Bari), together with the Ethiopian Ministry of Agriculture, implemented SupHort (October 2011 – June 2015), a development programme for the horticultural sector. SupHort significantly changed the attitudes of thousands of small-scale horticultural farmers by increasing farmers’ knowledge about horticulture, upgrading their small-scale irrigation schemes, and enhancing their linkages to inputs and products markets. See <http://www.iamb.it/>



ICCO Cooperation is the interchurch organization for development cooperation. Supported by the Embassy of the Kingdom of the Netherlands, ICCO Ethiopia manages the Food Security and Rural Entrepreneurship (FSRE) Innovation Fund. AgriProFocus Ethiopia organised the learning activities for the FSRE Innovation Fund, which included learning on contract farming. ICCO and the FSRE Innovation Fund contributed to the cost of this publication. See <http://www.icco-cooperation.org/en/countries/ethiopia>



Fair & Sustainable Ethiopia is an Ethiopian consultancy PLC responsible for the secretariat of AgriProFocus in Ethiopia. Fair & Sustainable Ethiopia offers different value chain and business development services, mostly in the agricultural sector. Its team includes international and Ethiopian professionals and a pool of associated consultants. Its mission is to be an attractive national partner in development cooperation based on its professionalism and international network. See <http://www.fs-ethiopia.com/>



LANDac, the Netherlands Academy on Land Governance for Equitable and Sustainable Development, is a partnership between Dutch organizations working on land governance. LANDac is one of the IS-Academies, a series of programs sponsored by the Ministry of Foreign Affairs to improve and strengthen linkages between academia and development practitioners in the field of international cooperation. See <http://www.landgovernance.org>



Cooperatives for Change programme (C4C), implemented jointly by Agriterra and SNV, aims to better the business performance of 16 unions and 150 producers’ cooperatives by improving the quality and quantity of products, establishing sustainable markets and increasing income for their members. The project follows a value chain development approach and aims to benefit 210,000 people by 2016. See <https://agriterra.org/c4c-project-ethiopia/>



The Ethiopia Netherlands Trade for Agricultural Growth (ENTAG) project is part of the Bilateral Ethiopian–Netherlands Effort for Food, Income and Trade (BENEFIT) program implemented by Wageningen UR. ENTAG aims to strengthen the Ethiopian private sector by, among other things, supporting business models that are inclusive of smallholder farmers. See <http://entag.org>

Foreword

In agricultural development, Ethiopia and the Netherlands are strategic partners. The government of Ethiopia pursues its growth strategy by emphasizing agricultural transformation. The Embassy of the Kingdom of the Netherlands (EKN) is supporting Ethiopian ambitions for food security and agricultural growth. This cooperation aims for an intensification of production and processing, which are necessary to feed the growing population and for export earnings.

AgriProFocus Ethiopia is part of an international network with Dutch roots. AgriProFocus promotes the network approach as a growth diamond of collaboration between farmer entrepreneurs, companies, governments, knowledge institutions, consultancies, financial institutions and NGOs in the agrifood sector. We offer our members and partners linking, learning and leadership services through business events, learning activities and an online platform with 22,000 professionals worldwide.

Contract farming arrangements are important in linking commercial and development objectives. The inclusion of small-scale farmers in market-oriented value chains is expected to both augment the volume for the market and boost farmer income. This double impact is exactly the reason why governments and development organisations have supported contract farming arrangements in Ethiopia. As mentioned in this publication, contract farming initiatives have contributed to a new and much needed dynamic in the agricultural sector in Ethiopia.

At the same time, this book shows that contract farming is not a simple one-size-fits-all solution. The analysis of the cases show the diversity in design, in implementation and in terms of results for the contract partners. A key factor of success is the role of the interface between farmers and firm.

We thank all the authors for their contribution to this publication.
Enjoy reading!

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Acknowledgements

This book is not the result of a rigid scientific exercise. We did not start with a research hypothesis and did not conduct a randomized trial with control groups. Instead, a group of agricultural professionals started by sharing observations and questions from their practice. These were written down in descriptions. An iterative process followed: the descriptions contributed to the analytical framework, which was in turn used to collect additional data and further enrich the stories.

Eventually, the decision was taken to share our analysis, conclusions and recommendations with a wider audience through this booklet. The focus is on what actually happens in a selection of contract farming schemes in Ethiopia and the reflections that arise from this. This has led in turn to the development of conclusions and recommendations that could be applied more widely.

Credit for inspiring this learning track and this publication goes to Lamberto Lamberti from CIHEAM Bari / SupHort. In due course, professionals from five other organisations joined the learning track. We would like to thank all the authors who contributed: Sorsa Debela Gelalcha, Terfesa Dandena, Aklilu Amsalu, Getachew Mekonnin, Tarekegn Garomsa, Feshadu Adugna Tufa, Lamberto Lamberti and Tiglu Tesfaye. Their details are given in the last section of the book.

Considerable time passed between the write-up in 2015/2016 and publication in 2017. We would like to thank Victor van der Linden (Fair & Sustainable Ethiopia) for his effort in getting the draft ready for publication. Our thanks also go out to our John Belt and Egbert Hoving (feedback and proofreading); to Annemarie Kortleve and Gizaw Legesse (photos, bios); and to Ruth Davies (editing) and Brendan Timmers (design and printing).

In a true network approach, the publication has been made possible through financial contributions from SupHort (CIHEAM+MoANR), FSRE Fund (ICCO), LandAc, C4C (SNV+Agriterria) and ENTAG (Wageningen UR).

Gerrit Holtland and Wim Goris

Abbreviations

AMF	Assela Malt Factory
ATA	Agricultural Transformation Agency
C4C	Cooperatives for Change, a programme implemented by SNV and Agriterra
CCF	Cumulative Cash Flow
CFC	Common Fund for Commodities
CIHEAM Bari	International Centre of Advanced Mediterranean Agronomic Studies – Institute of Bari
CPA	Cooperative Promotion Agency
CSA	Central Statistical Agency
DGIS	Directorate General for Development Cooperation
ECX	Ethiopia Commodity Exchange
ESC	Ethiopian Sugar Corporation
ESM	Economic Simulation Model
ETB	Ethiopian Birr
EUCORD	European Cooperative for Rural Development
FC	Facilitator for Change
FDOV	Facility for Sustainable Entrepreneurship and Food Security
FSRE	Food Security and Rural Entrepreneurship
GoE	Government of Ethiopia
ha	Hectare
ICCO	Interchurch Organization For Development Cooperation
KIT	Royal Tropical Institute
MFI	Microfinance Institution
MoANR	Ministry of Agriculture and Natural Resources
MoU	Memorandum of Understanding
NGO	Non-Government Organization
OIC	Oromia Insurance Company
OIP	Outgrowers Incubator Project
PSI	Private Sector Investment (programme of the Dutch government)
qt	Quintal; 100 kg or 0.1 ton
SACCO	Savings And Credit Cooperative
SupHort	Supporting Horticulture Development in Ethiopia, project implemented by CIHEAM Bari and MoA of Ethiopia (2011–2015)
TOC	The Organic Cooperation
ton	A ton is a metric ton: 1000 kg, 10 quintals
USD	United States dollar
Wageningen UR	Wageningen University & Research

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1. Introduction

Contract farming (see the box below) is popular in Ethiopia. For policymakers, it is a high level priority. In the Ethiopian government's Growth and Transformation Plan II, contract farming is a main pillar of the strategy to promote agricultural development through commercial farming.

For agricultural firms, contract farming is a quick way to start up or expand production. The alternative, starting their own farm as a greenfield investment, takes more time and resources. In Ethiopia, firms generally take two or more years to get the title deed and develop the allocated land. In fact, hundreds of investment licences have been revoked as investors failed to develop the land allocated to them. Moreover, in most of the highland areas, shortage of land is a critical challenge and investors cannot acquire enough land without displacing smallholders. This context drives investors to set up a contract farming, or outgrower, scheme that allows them to focus on their core business: processing and marketing (often including exporting).

For the donor community, contract farming is linking agribusiness development to smallholder farmers. Donor agencies that support investments in the processing and exporting sectors demand that this financial support translates into benefits for smallholder farmers. Setting up a contract farming scheme is an often-used approach to attain smallholder inclusion in these value chains. The Netherlands support a relatively large number of companies running a contract farming scheme.

For smallholders, contract farming is expected to reduce market uncertainty; to improve better access to inputs, knowledge and services; and subsequently to provide higher income.

This book shows that this policy narrative and the subsequent development initiatives have contributed to a new and much-needed dynamic in the agricultural sector in Ethiopia. The cases describe how new inputs and technologies are being introduced, quality of production is improving, and smallholder farmers are being trained and can access finance and new markets. At the same time, firms are benefiting from a more secure supply of quality produce.

This book asks: Is contract farming a real solution to rural development challenges? The concept itself has all the potential to be just that. However, reality shows that impact for farmers and businesses is not guaranteed. Several schemes did not live up to expectations: sometimes because firms did not follow up on their promises, sometimes because farmers failed to deliver. One of the underlying problems proved to be the lack of investment by farmers and firms in a sustainable interface between them. In some cases, the firm or the interface effectively organizes input supply, rural finance or marketing for farmers where these services are poor. There is a risk that these schemes contribute to a further weakening of the service provision to other farmers. Successful schemes contribute to sustaining exports and are crucial for the development of the agricultural sector in Ethiopia.

Box: Contract farming and outgrower scheme definitions

The definition of contract farming used in this publication is “an agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices” (Eaton and Shepherd 2001).

In a typical contract farming arrangement, farmers commit to providing an agreed quantity of a product that meets the quality standards of the buyer at the time the buyer determines. In turn, the buyer purchases the product for an agreed price and, in some cases, supports the production process. This may entail the supply of inputs or tools, mechanization services, technical advice and/or access to finance.

An outgrower scheme is a special type of contract farming. We define such a scheme as “a central facility surrounded by growers who produce on their own land under contract”. In general, this central facility is a processing unit that adds value to the product. To make optimal use of its economies of scale, the firm signs delivery contracts with neighbouring farmers. Compared to other contract farming schemes, outgrowers’ contracts are often more comprehensive: farmers get more intensive support, and the price is fixed. Partners are more interdependent: the buyer needs the outgrowers to make optimal use of the processing facility, and farmers generally have no other place to sell their produce. Typical examples of crops produced in outgrowers schemes are tea, rubber and sugarcane: all are perennial crops that require significant, long-term investments and that need to be processed quickly after harvesting.

The origin of this book: contract farming learning track of AgriProFocus Ethiopia

AgriProFocus Ethiopia is a network promoting farmer entrepreneurship. Some of its members and partners are involved in contract farming in Ethiopia. Some are directly involved in a contract scheme; others facilitate them; yet others have the desire to do so. Six of the network partners (see p. 11) wanted to learn about the underlying principles of and the actual experience in Ethiopia with contract farming. AgriProFocus Ethiopia and SupHort came up with the idea of organizing a joint workshop. This two-day workshop was held 28–29 August 2014 and had 23 participants. On the first day, there were visits to a farmer group in Ejere (this group was ready to begin contract farming) and to a cooperative union in Tulu Bolo (the union had already had its first experience in contract farming). On the second day of the workshop, the analytical framework (see Chapter 3) was developed and eight cases were selected for further study.

The initial write-ups of the cases were shared in three workshops that occurred over the next year. These workshops resulted in new questions and new perspectives being expressed. This process (a learning track) repeatedly enriched the next draft of the cases in this publication. The joint learning track also benefited from several training sessions on contract farming. In 2015, three sessions were held, first for the innovators of the Food Security and Rural Entrepreneurship (FSRE) Innovation Fund, then for other network members and a third for the staff of the Agricultural Transformation Agency (ATA). Ideas for follow-up steps include a train-the-trainer programme based on this publication.

Credit for inspiring the learning track and this publication goes to SupHort, a horticulture programme implemented by the International Centre of Advanced Mediterranean Agronomic Studies – Institute of Bari (CIHEAM Bari), Italy, and the Ethiopian Ministry of Agriculture. SupHort also contributed to the seed potato case, the theory chapter

and the cost of publication. ICCO Cooperation contributed financially. Their interest was that contract farming emerged as an important topic in the FSRE Innovation Fund, managed by ICCO. Fair & Sustainable Ethiopia, as host of the AgriProFocus network, contributed to four cases: malt barley, bamboo, passion fruit and sugarcane. In 2015, LANDac joined the learning track, as contract farming relates to their work on land acquisition and food security. LANDac also contributed to three cases: passion fruit, seed potatoes and sugarcane. The Cooperatives for Change (C4C) programme, implemented by SNV and Agritererra, joined during 2015 and contributed to three cases: malt barley, chickpea and sesame. At the end of 2016, the Ethiopia Netherlands Trade for Agricultural Growth programme of Wageningen UR gave the learning track a last push by contributing to the cost of publication and a further training session on contract farming. All these organizations are introduced on p. II.

Structure and contents of the book

A brief discussion on contract farming theory is presented in Chapter 2. Chapter 3 presents the analytical framework used in this book, with Chapter 4 describing the eight case studies according to this framework (see Table 1). The conclusions and recommendations are given in chapters 5 and 6 respectively. Annex I presents the methodology of the Economic Simulation Model, which can be used to strengthen the interface between farmers and the firm. Annex II presents more information on the 2-2 Trade methodology of AgriProFocus.

Table 1: Overview of the case studies (data refer to 2015)

Case	Start	Contracted farmers	Farmers groups	Firm	Donor*	Facilitator / NGO
Malt barley	2014	10,200	Existing and new unions, coops, lead farmers, MFI groups	Heineken	DGIS/ ICCO	EUCORD, HUNDEE
Chickpea	2014	714	Existing union and cooperatives	ACOS	FSRE	FC
Seed potatoes	2013	110	Informal groups	Solagrow	FDOV	SNV
Sesame	2007	1,000	Existing union and cooperatives	Selet Hulling	PSI	Cordaid
Bamboo	2010	Start-up	New cooperatives	African Bamboo	PSI, GIZ	F&S Eth.
Green beans	1999	40	Existing union and cooperatives	Ethio Flora	CFC	None
Passion fruit	2010	16	New cooperative	AfricaJUICE	GIZ/ ICCO	FC, FFARM
Sugarcane	2008	3,722	New union and new cooperatives	Wonji Shoa Sugar Factory	None	None

* Donor names are DGIS = Directorate General for Development Cooperation; ICCO = the interchurch organization for development cooperation; FSRE = Food Security and Rural Entrepreneurship Innovation Fund; FDOV = Facility for Sustainable Entrepreneurship and Food Security; PSI = Private Sector Investment (programme of the Dutch government); GIZ = the bilateral aid agency of the German government; CFC = Common Fund for Commodities; EUCORD = European Cooperative for Rural Development; FC = Facilitator for Change; F&S Eth. = Fair & Sustainable Ethiopia

Case 1 is best known: malt barley is sourced from 10,200 farmers in Arsi Zone by Heineken and its Ethiopian breweries. This case involves unions, cooperatives, lead farmers and microfinance institution (MFI) groups all operating in the interface between farmers and the firm. **Case 2** focuses on chickpea. An active cooperative union acts as an interface between ACOS and 714 farmers in West Shoa. **Case 3** deals with Solagrow contracting seed potato farmers who are organized in two small, informal groups, one of 54 farmers and the other of 56 farmers. These three cases are the relatively young cases, which have been running for three years or less.

Case 4 has run for nearly 10 years: Selet Hulling exports organic sesame from Humera region. There are 1,000 farmers involved through their cooperative, Fana Limat. **Case 5** is about bamboo, a perennial crop grown in backyard groves in Sidama that offers export opportunities for African Bamboo. This case is not yet operational, but 2,400 farmers are targeted. **Case 6** has operated for over 15 years: Ethio Flora exports green beans grown by smallholders in Central Rift Valley. The number of farmers involved varied, but was 40 for the season of the case study. **Case 7** is another perennial crop: passion fruit is grown by smallholders in Upper Awash for export by a Dutch co-owned firm, AfricaJUICE. There were 16 farmers involved initially.

Case 8 is from the same area as **Case 7**; it is the oldest contract scheme in the sample, with smallholders producing sugarcane for the state-owned Wonji Shoa Sugar Factory since 1975. The number of farmers increased in each of the three up-scaling rounds, and now the total is 3,722.

The cases involve a range of investors and Ethiopian smallholder farmers. Data gathering was not a straightforward exercise. For example, it was hard to get basic data on yields (a key performance measure of contract farming schemes and therefore a sensitive one): all cases lack measurement of the yields that contract farmers are achieving. Estimates made by the companies, farmers and non-government organizations (NGOs) varied; for example, the estimates by different actors on the yield of a new chickpea variety ranged between 14 and 30 qt/ha¹. Data about prices and business deals are also elusive: in two cases (chickpea and seed potato) it took quite some time to discover that there had actually been no business transaction at all. Farmers, donors/facilitators (such as NGOs and consultants) and companies do not like to expose failure.

Throughout this book, data from 2015 are used. Some data from 2016 were available; these did not contradict the observations and conclusions.

Who should read this book?

This book is written by and for professionals working in agricultural development. It is meant to support rural development practitioners who want to design or support contract farming schemes in Ethiopia and elsewhere.

1 The measure of quintal per hectare (qt/ha) is the most commonly used yield measure in Ethiopia. A quintal, also known as a hundredweight, is equivalent to 100 kg or 0.1 metric tons. This measure is used throughout the text.

The format of this book is made with practitioners in mind. The analytical framework developed here is rooted in contract farming theory. However, it remains practical as its focus is not on concepts, but rather on informing the (ongoing) analysis of what is actually happening “on the ground”. The framework consists of five basic questions, which can be asked by any actor wanting to support a contract farming scheme:

1. Which parties are involved, and how did the initiative get started? (Partnership dimension)
2. What is agreed in the contract? (Contract dimension)
3. How is the firm–farm interface organized and sustained? (Interface dimension)
4. How is the contract enforced? (Enforcement dimension)
5. What is the impact of the contract farming scheme on farmers, firms and the system? (Impact dimension)

All this leads to the final question: what is the contribution of contract farming to overall agricultural development in Ethiopia?

The topic of this book links to another publication by AgriProFocus: It takes two to trade (Schrader et al. 2015). The 2-2 Trade methodology was developed by AgriProFocus, Wageningen UR and the Royal Tropical Institute (KIT) to assist farmers and their trade partners to solve (potential) conflicts in their business relations. More information on this is presented in Annex II.

This book is not the result of a rigid scientific exercise. There is no research hypothesis, but data have been gathered to answer the questions raised by the analytical framework. The focus is on what actually happens in a selection of contract farming schemes in Ethiopia, and the reflections that arise from this. This has led in turn to the development of conclusions and recommendations that could be applied more widely.



2. Theoretical background

Lamberto Lamberti, CIHAEM/SupHort

This chapter gives an overview of the international literature about contract farming, highlighting the key documents in the field and providing suggestions for further reading. The chapter addresses the following questions:

1. What are the main characteristics of contract farming?
2. What are the drivers for contract farming, and what do the different actors expect to gain from it?
3. What are the different types of contract farming systems discussed in the literature (typology)?
4. Under what circumstances does contract farming have the best chance of success?

These questions set the stage for the analytical framework introduced in Chapter 3.

2.1 The debate about contract farming

Contract farming is seen as a way to link smallholder farmers to markets, thereby addressing a major challenge in the transformation of agriculture in developing countries from subsistence farming to market-driven production. Further to their definition of contract farming mentioned in the introduction, Eaton and Shepherd (2001) also noted that contracts between farmers and firms usually include the following elements:

1. The provision by the contractor of inputs and/or technical assistance to growers
2. The guarantee by the contractor to buy the products, provided these match agreed standards in terms of quantities, qualities and time of delivery
3. The agreement to ensure a basic price at the time of purchase.

Contract farming moves away from spot market transactions, where producers and buyers agree on price at the time of selling. Vertical coordination between growers and buyers is a key characteristic of contract farming. It is a buyer-driven market mechanism that relies on strictly binding contracts between the actors that are agreed before starting production (Vorley et al. 2008, USAID 2012).

Smallholders still face a number of constraints, and there is a concern they could be marginalized from emerging market opportunities. For example, Vorley et al. (2008, p. 7) state:

With limited access to inputs, credit and services, low and inconsistent production volumes, dispersed production, weak negotiating positions, limited capacity to upgrade and meet formal market requirements, and poor access to information, the transaction costs for farmers, to link with the modern sector, are daunting.

Technoserve and IFAD (2011, p. 1) add further detail to the constraints that farmers face:

Many factors limit the ability of smallholders to boost their productivity and make the transition from subsistence- to market-oriented production. They commonly lack security of tenure over the land, restricting the investments they are willing or able to make in land improvements. They also often lack access to inputs such as improved seed, fertilizers, water and information or to credit needed to buy these inputs. As a result, smallholders are unable to deliver the volume and quality of produce that commercial buyers – retailers, processors and other agribusiness firms – require, which in turn limits the development of markets for agricultural produce.

Proponents often consider contract farming as a “win-win” arrangement and an efficient mechanism for reducing market failure and reaping mutual benefits for the actors involved. A different school of thought, the “Food First” school, refers to contract farming arrangements as a “win-lose” arrangement; detractors of contract farming stress the vulnerability and powerlessness of smallholders in the contract relationship. In many contract farming schemes, there is disparity in price information between the farmers and the firm. Also, due to high prices of inputs, smallholder farmers may be locked into the arrangement due to the debts they accumulate. The Food First school sees contract farming as supporting the penetration of cash crops at the expense of food security. Yassin (2014) gives more details on this debate, which is also linked to the issue of “land grabbing”, or acquisition by external investors. Many see contract farming as a way to modernize agriculture in an equitable way. Others stress the inherently weak position of smallholders and consider contract farming as only marginally better than land grabbing. In Ethiopia, this debate is very much alive at the moment.

2.2 Drivers for contract farming

The reasons for undertaking contract farming are multiple for buyers (firms) and growers (farmers). Both parties want to reduce overall market uncertainty and transaction costs (USAID 2012). For the firms, the priority is to secure a reliable, predictable flow of raw materials that meet their specifications in terms of quality and volume at reasonable cost. Farmers want access to assured markets, credit that is reasonably priced and adapted to their needs, and technical skills and innovations that will help them satisfy market requirements (Technoserve and IFAD 2011).

Market competition, consumer demands, technology development, government policies, product traceability and corporate social responsibilities make agricultural systems increasingly organized into tightly aligned chains and networks, where the coordination among production, processing and distribution activities is closely managed (Bijman 2008, USAID 2012, Vorley et al. 2008).

There is thus a tendency towards vertical coordination in agricultural value chains. Contract farming is a method of increasing this vertical coordination at the first link in the value chain, whose importance is on the rise in modern agricultural and food industries of both developed and developing countries, where increasingly strict quality standards and food safety rules apply. Bijman (2008) and Vorley et al. (2008) list a number of developments that may lead to a great expansion of contract farming:

1. Modernization of domestic markets driven by investments in emerging economies by domestic and transnational manufacturers and retailers
2. Increasing urbanization and changes in consumer preferences and of purchasing power
3. The rise of supermarkets in food retailing
4. The reduction of the role of the state in providing marketing, inputs and technical assistance.

It can be argued that for now, these factors are more applicable to emerging economies than to most sub-Saharan countries, including Ethiopia. This may change in the near future.

Drivers for firms

On the one hand, dealing with smallholders can expose buyers to problems such as side selling. On the other hand, there is convenience in working with smallholders; search costs are reduced and, when well established, contract farming schemes can lower prices. The drivers for firms to set up a contract farming system are discussed here.

Firms have both commercial and social drivers to engage in contract farming. The principal commercial benefit is a steady and reliable supply of quality produce. Other commercial drivers can be one or more of the following:

1. No need to invest in land and land-related assets that bring returns only in the long run, such as irrigation and plantations of perennial crops
2. Price and supply risks are more limited and better manageable than in non-contractual sourcing when the right provisions are made in the scheme
3. No need to manage a large labour force; rather, they use the intimate knowledge and skills of farmers about their land, the crops, the climate, etc.
4. Local sourcing reduces the need for foreign currency, in case importing is the only alternative, which is attractive for both the companies and the government.

The first is a powerful driver, especially for foreign investors. To set up a processing factory and develop an (export) market is a large, expensive challenge. If firms need to also start a production system to supply that factory, they add complication, time requirements and further expense to their task.

The second driver reflects the fact that contract farming is considered to lead to a better-coordinated supply chain: better quality and a reliable supply. On the financial side, firms benefit from a lower need to invest in land and land-related assets. This also reduces their exposure to production risks.

With regard to the third driver, smallholders are very efficient at turning limited external inputs into a maximum of output. They tend their fields, rotate crops, protect their land and work hard to solve problems when they occur. This efficiency allows them to produce relatively cheaply. Most firms would simply not be able to compete with smallholders in terms of production costs, especially if a firm needs only one crop out of a rotation.

The fourth driver is often overlooked but may be a motivation for companies to engage in local sourcing in developing countries, as their currencies are prone to fluctuation. This is the case only when the schemes they set up are not simply large plantations.

Firms can also engage in contract farming as part of their corporate social responsibility strategy, because it provides a way for them to support smallholders' livelihoods. Generally, the social motive is the connection to or point of overlap with the agenda of any donors.

Drivers for smallholder farmers

Smallholders are motivated to be linked to buyers because this reduces market uncertainty and provides higher income and better access to inputs, knowledge and services (Bijman 2008, USAID 2012).

The principal driver for farmers to engage in a contract farming system is to ensure a secure market for their product. They can benefit from better prices (higher or more stable) and from secure payments. They may also benefit from lower transaction costs, including lower search and negotiation costs, and lower transport costs for inputs and outputs, as these are generally organized collectively for the participants to the contract farming scheme.

Moreover, farmers often get support on one or more production factors:

1. Access to (high quality and/or cheaper) inputs, tools and technology
2. Access to relevant knowledge, information and skills (agricultural extension)
3. Access to finance in the form of an advance or a loan.

Securing a market is important for smallholders, as their marketing costs can easily be 10% or more of the sales price. Having a secured market that covers or incorporates these costs is thus a substantial benefit.

The improved access to production factors can be substantial as well. Farmers can save on transport costs of inputs and can benefit from better quality inputs and from better-trained and more specialized extension workers. Access to finance is always very welcome in cash-strapped rural households. Access to (mechanized) equipment for land preparation, sowing, harvesting, etc. can also be an advantage.

The potential impact of contract farming schemes on smallholder farmers can be a higher and more secure and stable income compared to selling on spot markets due to:

1. Lower fixed costs (e.g. equipment) and/or variable costs (e.g. inputs)
2. Increased yields due to better inputs and better crop husbandry
3. Better prices due to better quality products and premium prices
4. Lower transport and other transaction costs for inputs and outputs.

Indeed, many smallholders are eager to participate in a contract farming scheme. Yet there are also some less attractive aspects. The main one is that the farmers become dependent on a single firm in terms of inputs and outputs. This is especially risky when the firm is the sole buyer and the production cycle is long, which is the case, for example, for outgrowers of tea, sugarcane or fruit. Also, as the firm sets the prices for inputs, services and outputs, smallholders can be disadvantaged by the firm's price setting.

Other drivers in the contract farming system

A well-functioning contract farming system leads to lower transaction costs and a more efficient supply chain. This can translate to a win-win situation for both the farmers and the firm.

In principle, the price of produce goes down because a more efficient production system leads to a lower cost price, which is beneficial for firms. This is also good for farmers, if the lower price is more than compensated for by higher yields. In the long run, this is a win-win situation for all actors, as the lower price makes the whole value chain more competitive and therefore more sustainable.

Typically, buyers try to avoid direct links with individual farmers and opt for relationships with farmers' organizations instead. This should reduce the costs associated with dispersion of producers; diseconomies of scale; poor access to information, technology and finance; inconsistent volume and quality; lack of traceability; and management of risk. Such groups can take on a range of roles, including bulking, quality control, access to services and market information, and training in new technologies. Farmers' organizations can also improve the balance of power between producers and contractors, strengthening the incentives to continue bilateral activities (Vorley et al. 2008, Technoserve and IFAD 2011).

Buyers can set up sourcing arrangements with existing farmers' organizations. Other options are to organize individual farmers into commercially oriented groups, or work through "lead farmers" who act as intermediaries or agents that develop their own sourcing arrangements with individual farmers (Technoserve and IFAD 2011). Vorley et al. (2008) underline the importance of small-scale traders or farmer traders who play a critical role for smallholders by connecting them to markets and by providing services. The risks of working with farmers' organizations include lack of effective capacity to organize production and mobilize farmers, and the reliability of their leaders and management committee (Wageningen UR et al. 2009).

Other actors also play important roles in contract farming. Governments and their agencies, NGOs and MFIs all act as value chain facilitators; generally, they aim to reduce investment costs and risks for buyers and/or to empower smallholders. They are helpful in organizing reliable producers' groups or in recovering debt, when they have deep knowledge of and strong relationships with the concerned communities. In many cases, these third party actors are catalysing contract farming processes. However, their presence may add transaction costs to the farmers and/or the firm. A major risk the third party actors face (or may even create) is the establishment of unsustainable mechanisms of assistance to investors and buyers, who may become dependent in the medium to long term.

2.3 Contract farming typologies

Contract farming schemes are varied and can differ in terms of the scale of production, the actors involved and the complexity of embedded arrangements. Five main models can be identified (based on Eaton and Shepherd 2001). They are presented here, each with their pros and cons (based on Technoserve and IFAD 2011).

The **informal model** applies to individual entrepreneurs or small companies who normally make simple, informal, seasonal production contracts with farmers, particularly for crops such as fresh vegetables, watermelon and tropical fruits. Crops transacted under this model usually require only a minimal amount of processing. Material inputs are often restricted to the provision of seed and basic fertilizers, with technical advice limited to grading and quality control matters.

Pros: Little or no buyer investment in technical/financial support; low operational costs; high level of sourcing flexibility.

Cons: Limited control over production (i.e. products, varieties, quality, etc.); high risk of supply ruptures; strong buyer competition.

The **intermediary model** comprises buyers that undertake agreements with intermediaries who have their own informal arrangements with farmers' networks. An example is when food processing companies or fresh vegetable entrepreneurs purchase crops from individual "collectors" or from farmer committees.

Pros: Reduced risk, assuming effective management; minimal buyer investment in technical/financial support; marginally improved supply-chain management; low cost of switching to new partners.

Cons: Lower buyer visibility among farmers; marginal control over production (volumes, quality).

The **multipartite model** establishes a partnership between the private firm interested in the products; the farmers – usually cooperatives; and third parties, who are assigned to facilitate access to services. This model is common in developing countries, especially where governments have promoted joint ventures with private sectors.

Pros: Limited investment and reduced costs due to partner cost-sharing; reduced risks (vs. commercial production) due to geographically dispersed outgrowers.

Cons: Greater risk of side selling; no core production, so reliant on smallholder production; high transport costs.

In the **centralized model**, the buyer arranges agreements with several farmers, distributing production quotas for each farm at the beginning of the growing season and setting quality control measures so that specific quantities and qualities of products will be delivered at scheduled times. This model is very common for industrial crops (coffee, sugar cane, tea, bananas, cotton, rubber, etc.), but is also used for poultry, dairy, fresh vegetables and fruits. It is the most common model used in Africa.

Pros: Enables high level of control over product quality and volumes; frequent interaction with farmer inhibits side selling.

Cons: High level of investment needed to develop in-house technical assistance and pre- and post-harvest logistics and related infrastructure.

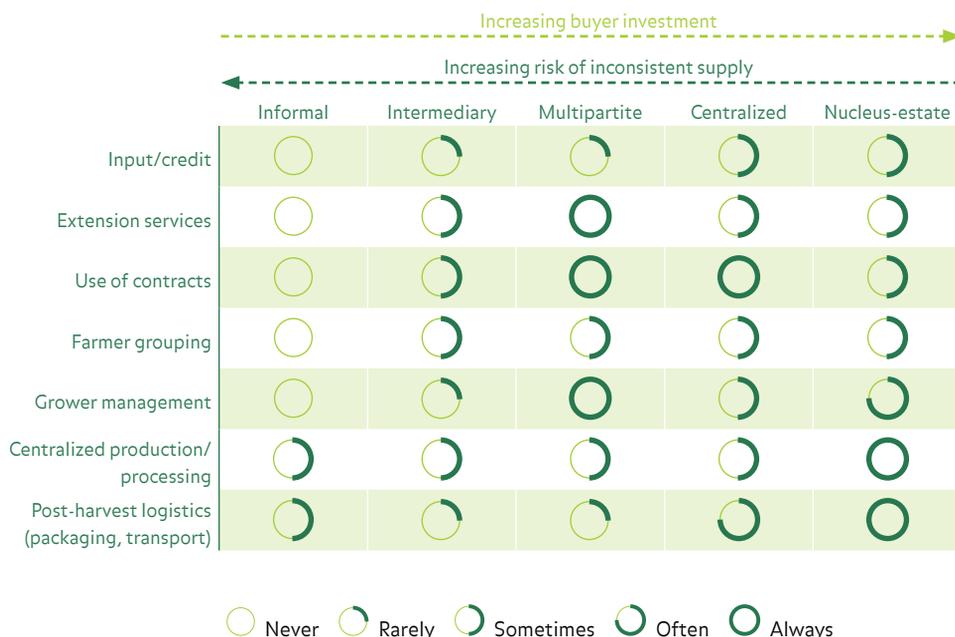
In the **nucleus-estate model**, the buyer has an estate plantation with a processing plant. The estate has a minimum capacity to supply the factory and, over time, develops arrangements with surrounding farmers to supply additional products of the required qualities to optimize the supply to the factory and make use of its economies of scale. This model is common for perennial crops and for dairies.

Pros: High level of control over supply chain; simplified technical assistance/extension/ farmer oversight; reduced risk of supply ruptures.

Cons: Requires heavy investments (land, labour) in production; higher crop-related risks; limited flexibility/options in selecting outgrowers.

Technoserve and IFAD (2011) classify these models along a scale of two dimensions: 1) increasing buyer investment (from left to right), and 2) increasing risk of inconsistent supply (from right to left).

Figure 1: Five contract farming models: based on Technoserve and IFAD (2011)



2.4 Under which circumstances does contract farming work best?

In general, products in a contract farming scheme system should be able to generate sufficient revenues that buyers can not only cover their input costs and generate a profit, but also cover the costs of developing and maintaining an effective and healthy relationship with the growers, that is, maintain the interface.

Some agricultural products are more suitable for contract farming mechanisms than others. The suitability is defined by a mix of crop characteristics and market conditions in which these crops are grown.

Bijman (2008) indicates that the most suitable crops for contract farming are:

1. High value crops, whose quality highly depends on investments of inputs and knowledge and for which customers are willing to pay a quality premium
2. Highly perishable crops, for which high levels of coordination are needed for harvest and delivery
3. Crops that are technically difficult to produce, for which specific inputs and skills are required for production and where growers depend on assistance from the buyers.

Technoserve and IFAD (2011) find that the most suitable crops for contract farming with smallholders have the following characteristics:

1. Limited market outlets
2. Low risk of side selling
3. Crops that need a long gestation period and significant investments, such as tree crops and their derivatives
4. Crops that attract a high premium for improved quality (such as coffee, vegetables, cocoa, tobacco, cotton).

The first two characteristics are related to the exclusiveness of the deal between farmers and the firm: there cannot be another market outlet. The third is related to high start-up costs and investment requirements that cannot be borne by individual smallholders. The last relates to the high product quality needed, which is difficult for individual smallholders to supply without access to the right inputs, techniques and equipment.

Some products are less suitable for contract farming schemes. This is the case for high-volume, low-value products, such as staples and some root crops, and less perishable crops that can be stored. Examples of crops with low suitability for contract farming are barley and chickpea, two of the cases in this book. The main reason for this is that these crops have spot markets that function well, making them more prone to side selling. If the value chain of the crop includes a processing stage to add value, spot markets have less influence.

Types of buyers (firms)

In many contract farming cases, buyers lead the contracting process and may invest significant resources. In some cases, large cooperatives or other producer organisations may look for a firm to do business with. The type of buyer involved is a factor in the potential success of a contract farming scheme. Buyers can be traders/collectors, wholesalers, retailers, processing companies or exporters, among others. Their attitude towards smallholders depends on factors such as their existing relationships with farmers, their scale of operation and their capacities, but also the rules and regulations that govern contract farming arrangements. Bijman (2008) reports that the large fixed costs of contract farming make it less attractive for traditional wholesalers or small to medium-sized collectors. It is, however, an option for the large processors, exporters or wholesalers that are the preferred suppliers to supermarkets.

Pricing mechanism

A transparent pricing mechanism is crucial for success. This includes a clear product description of, for example, different grades of produce. The conditions for the final purchase of the product are naturally very important, and misunderstandings and disputes frequently arise at the time of product delivery. A number of pricing mechanisms can be distinguished:

1. Fixed prices agreed at the beginning of each cropping season
2. Flexible prices based on local/global markets and/or processing and other costs of the agribusiness firm
3. Prices calculated on spot market values, adding a premium based on the product qualities
4. Split pricing: paying a fixed instalment before the cropping season and the second instalment depending on the sale price realized by the agribusiness firm
5. Prices on consignment basis, where prices are calculated after the produce has been marketed and sold.

Buyers usually avoid fixing the price in advance. They prefer flexible mechanisms to cushion market fluctuations at their end. However, incentives such as a minimum price and/or premium for high quality can motivate farmers. Alternatively, a buyer's guarantee to purchase second-grade products can also be a very important incentive for farmers and ensure contract implementation.

Recommendations

Different publications (Technoserve and IFAD 2011, Wageningen UR et al. 2009, USAID 2012) give the following recommendations for the process of establishing contract farming schemes:

1. That buyers and farmers both know the particular market product and its profitability
2. That contractors (firm and interface) should be able to clearly explain the benefits of contract farming to farmers
3. That the process of setting up the contract farming scheme should recognize farmers' capacities and gaps in their ability to undertake such a programme
4. That contracts should be shared and agreed among all partners, specifying obligations and rights, price mechanisms, services to be provided, rewards for quality products and ways to settle disputes
5. That farmers' organizations or local traders facilitate the selection, organization and management of the producers, thus reducing costs for investors. In case this is not (yet) feasible, other interface actors such as NGOs, MFIs and agricultural extension agencies are assigned to select and mobilize farmers
6. That there is an enabling environment, in terms of policies, legal and regulatory frameworks, infrastructures and institutions, to encourage investments in contract farming schemes.

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Further reading:

- Sources and case-specific literature are listed below each case.
- The Agricultural Transformation Agency's (ATA) work on contract farming: <http://www.ata.gov.et/programs/agribusiness-markets/commercial-contract-farming/>.
- The United Nations Food and Agriculture Organization (FAO) has a library about contract farming: <http://www.fao.org/>.
- Tools for contract farming: <http://private.tools4valuechains.org/>.



3. Analytical framework

3.1 Introduction

The analytical framework presented in this chapter consists of five key dimensions that are important to take into account in any contract farming scheme. The dimensions are based on five basic questions that are relevant for any actor wanting to support or engage in a contract farming scheme.

Table 2: Five contract farming dimensions

Question	Dimension
1. Which parties are involved, and how did they get started?	Partnership
2. What is agreed in the contract?	Contract
3. How is the firm–farm interface organized and sustained?	Interface
4. How is the contract enforced?	Enforcement
5. What is the impact of the contract farming system?	Impact

The analytical framework examines first of all who the **partners** are in a given contract farming scheme, and what the drivers are of the contract farming scheme at both the farm and firm level. Second, it looks in depth at the type and content of the **contract** involved. Third, it focuses on the “**interface**” between the partners. Fourth, it looks at the contract **enforcement** mechanism. Fifth and final, the **impact** of the contract farming scheme is addressed.

The concept of **interface** needs an explanation. It is used here to describe the interaction between firms and farmers. Whether the potential benefits of contract farming materialize is determined to a large extent by the efficiency of this interaction. In all contract farming systems, there are actors that play (or should play) the role of the interface. The issues that the interface deals with can be captured in questions that include, How do the firm and the farmers communicate, plan and organize the work to be done? How are inputs distributed? How are outputs consolidated, inspected, transported and stored? In Ethiopia, cooperative unions often play a crucial role; they sign the contract with the firm and are generally responsible for quality control, efficient communications and logistics and for organizing a reliable payment system. The role of the interface can, however, also be played by private actors such as lead farmers, rural entrepreneurs or informal groups.

In our discussion about the interface, we are concerned with the interaction between those people and organisations that play a direct role in the contract farming arrangement. This is different from the role of outsiders (like NGOs, government agents, consultants) that facilitate the contract farming.

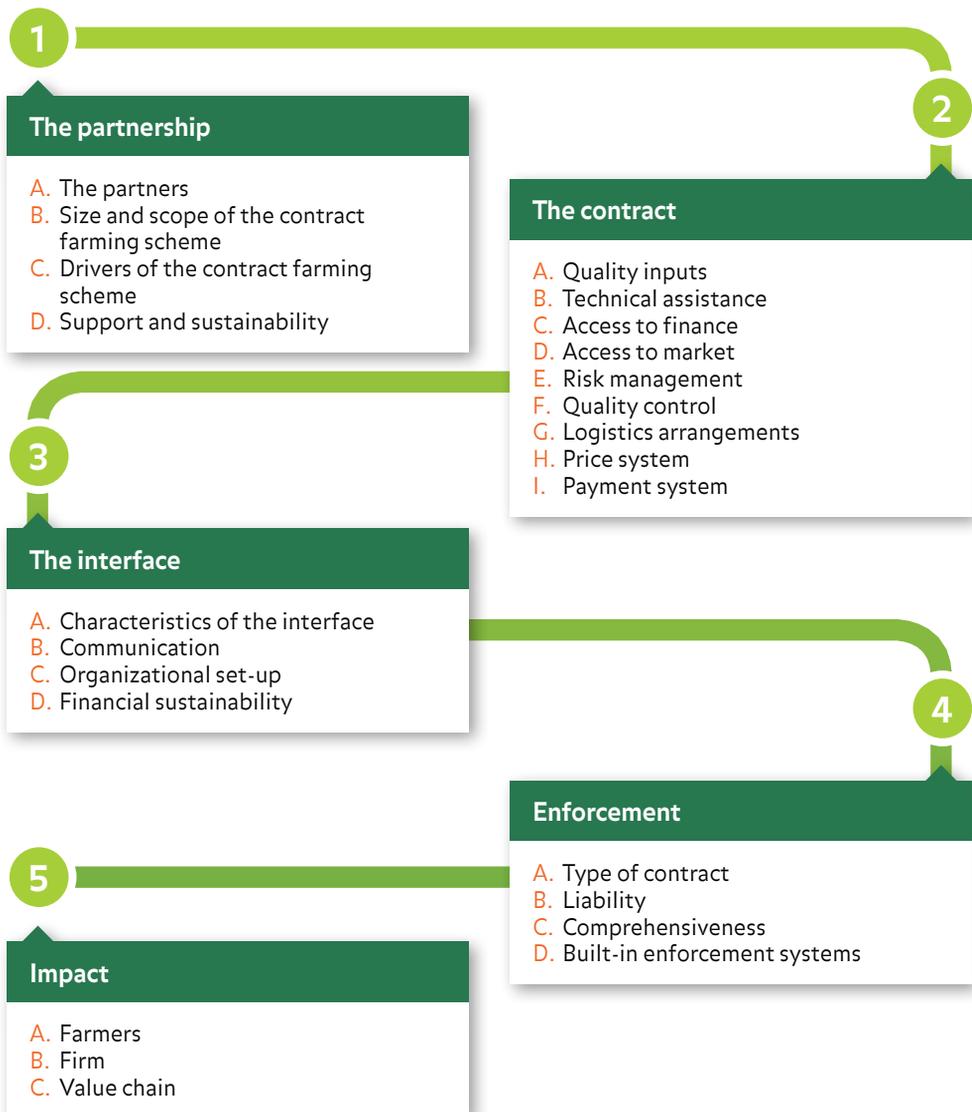
The five dimensions developed here are in line with the theory on contract farming. As discussed in the previous chapter, the partners and their drivers to engage in contract farming are important, as they will determine the model of contract farming that will most likely be used. The contract is at the heart of the contract farming arrangement, and in virtually all cases there is a third party – the interface – involved that connects farmers to the firm. In most cases this is a farmers’ organization, but it may also be that lead farmers form the interface. Donors or other third parties often play a role in strengthening the interface and in some cases take up part of its role, such as the capacity-building of farmers and provision of technical advice and support and logistical support. All parties involved have a stake in contract enforcement, as this is instrumental in cementing the deal and ensuring that the contract farming scheme works for all

involved. Taken together, these aspects determine the impact of a contract farming scheme on farmers and firms but also in the broader system: the larger unit of analysis such as the value chain or even the larger support systems like the rural finance system, the input supply system or the market system.

3.2 Five dimensions

The next paragraphs present details of the five main dimensions of contract farming. They are divided into 24 subdimensions, each of which can be investigated with further questions. Together, the 125 questions for the five main dimensions form a detailed checklist for design and implementation of a contract farming scheme. All case studies presented in the next chapter are assessed using these five main dimensions.

Figure 2: The five dimensions of contract farming





3.2.1 The partnership

To understand and appreciate any contract farming case, it is necessary to know the partners and the way they came together. The following aspects are important:

A. The partners

1. Who is the investor/firm? What are its main characteristics?
2. What are the drivers for each partner to engage in contract farming?
3. What is the firm's turnover, and how important are the contract farmers to it compared to its core business?
4. Who are the smallholder farmers? What are their main characteristics?
5. How important is the contract for them, compared to other dimensions of their farm and livelihoods?
6. Are the farmers organized (in a cooperative or otherwise)?

B. Size and scope of the contract farming scheme

1. What is the product involved?
2. What is the size of the partnership in terms of production volume and number of farmers?
3. How did the number of participating farmers evolve over time?

C. Drivers of the contract farming scheme

1. How did partners meet and come to know each other?
2. How did they come to an agreement?
3. Was there a third party involved? If so, what was its role?
4. Which methods were used to bring partners together?
5. What is the driving force for the partnership: why did it start?
6. What was the motivation of the initiator (the firm, the smallholders, a third party)?
7. What is the expected benefit for the farmers?
8. What is the commercial justification for the firm to engage with smallholders?
9. Is there a social driving force in place (corporate social responsibility)?
10. How is that reflected in the contract?

D. Support and sustainability

1. What support is there from a development partner / donor?
2. Who controls the budget?
3. To what extent is the budget transparent to farmers?
4. What say do the farmers have in the use of the project budget, and how does this manifest?
5. What assets are subsidized by the development partner / donor?
6. Who becomes the owner of these assets?
7. How has the phasing out of the development partner / donor support (exit strategy) been planned?
8. What is the plan to ensure the sustainability of the initiative?



3.2.2 The contract

As the name suggests, the heart of the matter in contract farming is the contract. What is in the contract and what is not? Here we deal with content-related issues only; we leave the legal set-up and wording of the contract to professional lawyers. The following aspects are important:

A. Quality inputs

Most contracts prescribe (or forbid) the use of certain varieties, quality seed, fertilizer and/or pesticides.

1. Which inputs are prescribed or forbidden?
2. What were the outcomes of testing on farmers' fields?
3. How is a timely and sustainable supply secured? (Through the firm or through the market? Other?)
4. How is the quality of the inputs guaranteed and checked?

B. Technical assistance

Often smallholders need access to irrigation, (new) equipment and new post-harvest technologies to fulfil the quality criteria of the firm. New inputs, new technologies and higher quality standards require more knowledge and skills from the farmers.

1. What is the cost of the technology, and what is the proof that it is profitable?
2. Who will own the technology?
3. How is the technology procured? Does the firm have a monopoly, or can the farmers get access to it elsewhere?
4. Who organizes, and who pays for, the maintenance and repair?
5. To what extent are farmers (and mechanics) trained and capable to handle the technology?
6. What additional knowledge and skills do farmers need?
7. Who will train the farmers?
8. How are the trainers qualified, and how are they paid?
9. What amount do farmers have to pay for the training they get?
10. How can the training and extension system be made sustainable?

C. Access to finance

Generally, contract farming leads to more expensive production systems; therefore, farmers expect firms to pre-finance their production.

1. Who will finance the inputs (and outputs) of farmers: the firm, a microfinance institution (MFI), a bank, other?
2. To what extent do the farmers have the collateral and track record to get a loan?
3. To what extent can a farmers' organization (e.g. primary cooperative) organize and guarantee the loans for its members?
4. What size loan does the farmers' organization need to purchase the produce of its members before selling it to the firm?
5. What size loan does the company need to pre-finance the production or to buy the harvest?
6. What amount is pre-financed by the donor for the farmers or their cooperative?
7. How will this money be recovered and transformed into a sustainable (revolving) system?

D. Access to market

1. How is market access arranged under the contract?
2. Is the market access negotiable, for example, for surplus quantities produced?
3. Is there a market outlet for second-grade produce?
4. Are the farmers free to sell non-contracted production elsewhere?

E. Risk management

Several risks need assessment and mitigation: production risks, price risks, side selling or more general non-compliance of one of the partners.

1. Which risks (of farmers and firms) are identified and mentioned in the contract?
2. Which risks are monitored?
3. What happens in case of a calamity (e.g. rains failing, natural disaster): is there a communication (action) plan that is agreed upon?
4. What is the balance between the risks and benefits for both parties?
5. To what extent does the firm guarantee the (costs of the) inputs, a certain yield, a certain price or a certain income?
6. To what extent do farmers (or a cooperative) guarantee a certain quantity supplied to the firm?
7. What risk prevention or mitigation measures are taken?
8. What external guarantee or insurance system is put in place?

F. Quality control

Quality of the produce is a critical issue for firms, yet farmers have limited experience with this and often lack the necessary knowledge of quality standards.

1. Which quality criteria are clearly defined, and can they be measured objectively?
2. Who does the quality control, and who decides on the grades?
3. To what extent is the relationship between grades and the production process clear and reasonable?
4. What alternative market for second-grade produce do the farmers have?

G. Logistics arrangements

Clear logistics arrangements are needed to deliver the inputs and to collect, transport and store the produce.

1. Who makes sure that the farmers get the inputs in time?
2. Who will buy the produce immediately when farmers want (need) to sell?
3. Who will organize and pay for the transport?

H. Price system

Price is a key feature of any contract. Farmers generally expect a better price from the firm than they can get on the market, despite the support they might get in production.

1. What is the price that is fixed in the contract?
2. To which benchmark price is the contract price linked? (Is the benchmark realistic?)
3. To what extent is the price setting transparent?
4. Who determines the benchmark price, and how is this done?
5. To what extent is the price linked to the quality of the produce?

I. Payment system

Virtually all farmers need to be paid cash; otherwise, they sell to other buyers. Yet, paying hundreds (or thousands) of contracted farmers is a complicated affair.

1. How are farmers assisted to open a bank account with a bank, MFI or savings and credit cooperative (SACCO)?
2. How can a reliable system be set up to disburse a lot of cash in rural areas?
3. What is the role of cooperatives, MFIs or SACCOs in this?



3.2.3 The interface

In situations where firms cannot work with all farmers individually, an interface is needed: a person or an organization to organise the communication between the firm and farmers, as well as to plan and coordinate activities (input distribution; output collection). The interface can also secure access to finance or training for farmers or add value to the produce. In practice, cooperative unions, primary coops, informal farmers' groups or lead farmers (sometimes called nucleus farmers) can all play the role of interface. The following aspects are important:

A. Characteristics of the interface

1. Is the interface an individual or a group? Groups are more participatory; individuals take quicker and more pragmatic decisions.
2. Is the interface formal or informal? A formal interface can enforce contracts better; an informal one will often be cheaper and more flexible.
3. Is there a single interface or a double interface (e.g. a union working with primary coops or a coop working with a number of lead farmers)?

B. Communication

Good communication is essential for the success of any contract farming initiative, yet both farmers and firms tend to neglect this. This can undermine the understanding and trust between partners.

1. To what extent is a two-way form of communication established (or does the company tell the farmers what it wants from them, and the farmers simply agree in the hope and assumption that everything will be fine?)
2. How does the communication show that the firm understands the farmers' livelihoods?
3. How are the concerns of farmers and of their community addressed in the communication process?
4. How is the community organized: is the communication limited to the (male) leaders or does it include all (female) farmers or even the whole community?
5. Which communication methods are used: is the communication limited to oral communication or is written information used as well?
6. To what extent is the communication consistent and concrete? (Vagueness can easily lead to misunderstanding, gossip and, ultimately, to mistrust and a collapse of the deal.)

C. Organizational set-up

When the number of farmers is relatively limited, a lead farmer (or nucleus farmer) can act as interface between the firm and the farmers. When the numbers are higher, usually cooperative unions (and/or primary cooperatives) play this role.

1. How is the cooperative embedded in the community?
2. To what extent is it autonomous (free of interferences by government agents, strong local private interests or existing conflicts in the community)?
3. How are the leaders elected?
4. How will farmers be convinced to become (active) members of a cooperative? (Many farmers are afraid of the costs, procedures and potential conflicts associated with a cooperative.)
5. What are the exact tasks and responsibilities of the cooperative, in both the short and long term?
6. To what extent are these tasks handed over gradually to the cooperative?
7. To what extent is the cooperative capacitated to handle these tasks?
8. What knowledge and business skills are available to the cooperative? (If not available, can qualified people be found to manage the cooperative?)

Similar questions can be asked for lead farmers, adding the following two:

1. To what extent are they well known and trusted by all members of the community?
2. Which tasks and responsibilities do these actors have, and are they capable of performing them in an efficient and transparent manner?

D. Financial sustainability

The ultimate aim of a contract farming scheme is to be economically sustainable. An intermediary but crucial step towards this goal is to make the interface economically sustainable. For firms, an interface partner means they only have to deal with one partner: a cooperative that can discipline its members to deliver the produce as agreed. For farmers, this means they have a cooperative that is able to negotiate good conditions for them.

1. What is the long-term business plan of the cooperative?
2. What are the tasks and responsibilities of the cooperative?
3. What are the investments needed to perform these tasks?
4. What are the running costs related to these tasks?
5. What cost-recovery mechanisms (e.g. charging commission) are in place to pay for these tasks?
6. What internal capitalization mechanism is there (to build up the financial reserves that are needed to become an independent player in the chain)?
7. How is any financial support (of donors or firms) accumulated in the cooperative?
8. Which adequate incentive systems are there to employ quality staff and to ensure that they work efficiently?

Successful contract farming systems can support cooperatives to become independent market players. This allows them to be able to explore alternative markets for farmers in case the contract farming does not work as planned. However, the effectiveness and efficiency of cooperatives in many cases leaves much to be desired, and private lead farmers can be an attractive option. In the latter case, the same questions as above still have to be posed to assess whether the interface is (financially) sustainable.



3.2.4 Enforcement

The principal reason to sign a contract is for the firm to ensure supply of the produce that it needs and that it has pre-financed. Enforcing a contract, for example through legal action in court, is a time-consuming and insecure process. Farmers generally lack the means to go to court, and firms often lack the will. The following aspects are important:

A. Type of contract

1. What type of contract is signed (partial, comprehensive)?
2. What is included in the contract?
3. Who are the signing parties?

B. Liability

1. How can the contract be enforced (in court)?
2. To what extent can a poor farmer who is offered seed by a firm be considered as having entered into the contract on voluntary terms?
3. To what extent can a poor smallholder who did not apply the agreed husbandry be held liable for the poor quality of the production?
4. To what extent are the underlying technical and economic parameters sufficiently clear to underpin a contract?
5. (In case of improved seed provided through the contract farming scheme): What is the average yield of the seed?

C. Comprehensiveness

1. What is the benefit of a comprehensive contract above a partial contract or a memorandum of understanding (MoU) or a letter of intent (LoI)?
2. How can partial contracts help to clarify the relationship at any given stage?

D. Built-in enforcement systems

1. Which inbuilt incentive systems (self-enforcing) does the contract have? (e.g. guaranteeing a farmer who delivers the produce in a given year access to good seed in the following year)
2. To what extent is the contract (MoU) balanced and fair? (Often there is a penalty for side selling by farmers, but what happens if a company does not deliver the inputs, or does not deliver them in time?)



3.2.5 Impact

Contract farming can have a range of impacts on farmers, firms and the wider value chain.

A. Farmers

1. What is the impact on farmers' incomes?
2. How much have yields improved?
3. How did prices increase? (Or how much did the cost price decrease due to a more efficient production system?)
4. To what extent are transport costs reduced?
5. To what extent are farmers' incomes more stable than before entering into the contract farming scheme?

B. Firm

1. What is the impact on the supply and income of the firm?
2. What is the impact of this on the utilization of assets for the firm (e.g. processing capacity)?

C. Value chain

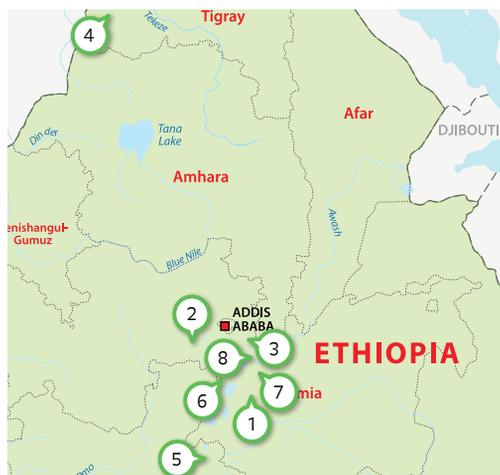
1. What is the impact on the competitiveness of the value chain?
2. How much has the volume of the business increased?
3. How many jobs have been created in the chain?
4. What is the wider impact in the community: additional jobs created in the community, any other economic spin-off in the community?



4. Case studies

Map: The eight case studies and their locations in Ethiopia

1. Malt barley p. 27
2. Chickpea p. 39
3. Seed potatoes p. 47
4. Sesame p. 55
5. Bamboo p. 63
6. Greens beans p. 71
7. Passion fruit p. 79
8. Sugarcane p. 89



4.1 Case 1: Malt barley

Gerrit Holtland, Tarekegn Garomsa and Terfesa Dandena

Number of farmers: 10,200	Drivers of the firm: local sourcing to secure supply
Type of crop: staple crop with value addition and local processing	Impact on farmers: very high
Drivers of the farmers: access to improved seeds, inputs and technical assistance	Impact on the firm: high, but at high costs

Summary

Malt barley production in Ethiopia is concentrated in Arsi and West Arsi zones, which together produce around 70% of the country's marketed malt barley; some 40,000 smallholders produce over 50,000 tons annually. On average, they grow half a hectare of malt barley with a yield of 27 qt/ha. They sell half of their production; the rest is for home consumption.

The main player in the Ethiopian malt barley chain is Assela Malt Factory (AMF), a state firm with a monopoly in producing malt. AMF performs a double role: toll malting on contract and malting its own supply of barley, which it sources from smallholders. It is the sole buyer of malt barley, as well as the sole supplier of malt to brewers. It sets the prices for both barley grains and malt. Over time this monopoly has led to inefficiency, low quality and thus suboptimal results. Foreign brewers stress the need to privatize the AMF, but so far without success. The government recognizes the inefficiencies, yet it is (understandably) not willing to replace a public monopoly with a private one.

Other private players in the malt barley chain, which use similar sourcing strategies to each other, are Diageo (with the beer brand Meta) and Dutch brewing company Heineken, which seeks to enhance production and to develop stronger ties with farmers in this area.

In this case, we focus on the contract farming scheme set up by Heineken. The work described in the case began in the 2014/15 season, and all data refer to this season.² The four different types of interface involved make this case study particularly interesting. Most of the analysis will focus on the unions and the cooperatives, but the performance of lead farmers and MFI groups is analysed as well.



4.1.1 The partnership

A. Partners

Heineken bought three Ethiopian state-owned breweries in 2011 and upgraded them. Next, it built a new brewery that started production in mid-2014. In 2015 its capacity doubled. In total, Heineken invested 400 million euros for a production capacity of 4 million hectolitres per year.

On the farmers' side, there are four types of interface that organize them:

1. Lead/model farmers: individual, better-off farmers
2. Multipurpose unions: existing unions with dozens of primary cooperatives as their members
3. Primary cooperatives: new malt barley cooperatives with 150–200 farmers
4. MFI groups: informal groups of some 60 farmers organized by an MFI.

Cooperatives and lead farmers gave Heineken a list of farmers they work with, including details about land size and expected yields. This allows the firm to forecast yields.

B. Size and scope

In the 2014/15 season, Heineken contracted 10,200 farmers. In total, 23,000 farmers are involved in contract farming schemes; about half of all market-oriented malt barley producers are in Arsi and Bale zones. Diageo has contracts with 6,100 farmers.

C. Drivers

Driving the contract farming scheme is the need for local malt barley to supply the quickly growing beer industry in Ethiopia. Between 2003 and 2012 beer consumption grew 15–20% annually, and this growth is forecast to continue for several years (Ethiopian News Agency 2016). When several state-owned breweries were privatized in 2010, international brewers were eager to enter the attractive Ethiopian market. Brewers doubled their capacity between 2013 and 2016.

The malt barley market is strongly competitive. Given the high demand, imports have to increase dramatically if local production is not increased. Yet foreign currency is very scarce in Ethiopia. This motivated the brewers, the government and the development partners to cooperate to limit imports, even though imported malt is slightly cheaper and of better quality than locally produced malt. Prices for local malt barely in the 2014/15 season were substantially higher than in previous years – up to 10% above the import price.

² Data on the 2015/16 season, where available, do not contradict the conclusions.

D. Support and sustainability

Heineken initiated the CREATE programme to set up a sustainable supply chain, with a target to source 60% of its malt barley supply in Ethiopia, Rwanda and Sierra Leone locally. CREATE is a partnership with the Directorate General for Development Cooperation (DGIS) of the Dutch government for the period 2013–2017.

In Ethiopia, CREATE started in the 2014/15 season and aims to organize a supply of 20,000 tons of malt barley from 20,000 farmers. It has two main components:

1. Introduce new barley varieties by providing barley seed and agronomic advice to farmers
2. Set up a contract farming scheme with four different groups: lead/model farmers, existing multipurpose unions, new malt barley cooperatives and informal groups organized by MFIs.

Other partners joined the programme in Ethiopia. DGIS contributed 1.2 million USD, Heineken 1 million USD cash and 440,000 USD in-kind, and ICCO 327,000 USD. On production issues, CREATE works with Malteurop, the world's leading malt producer: a French expert led an agronomic team in setting up trials and demonstrations and in providing training. For the work with malt barley cooperatives, Heineken partners with the European Cooperative for Rural Development (EUCORD) and ICCO, both international NGOs, and with Hundee, ICCO's local partner. CREATE mobilizes farmers and supports them to set up single purpose³ malt barley cooperatives. Consultants from Fair & Sustainable Ethiopia assist HUNDEE staff in designing a sustainable business model for the cooperatives. There is close coordination between HUNDEE, the CREATE programme and the raw materials development manager of Heineken.



4.1.2 The contract

A. Quality inputs

In the 2014/15 season, Heineken offered contracted farmers 5,310 qt of quality seed of local varieties (Holker and Sabini), sourced from Ethiopia Seed Enterprises and Oromia Seed Enterprises (both state-owned). This was sufficient for 85% of all farmers involved. As the new malt barley cooperatives were not yet well organized, 50% of their members did not get seed; instead, they used seed saved from the previous season. Distribution was late due to delays in cleaning by Oromia Seed Enterprises.

In the same year, the firm contracted several commercial farms to multiply seed of two new varieties: Traveler and Grace.⁴ This was successful, and in the following season all parties received seed of these new varieties, which had been tested in three agroecological zones. In the research station, the varieties Traveler and Grace produced respectively 47 and 46 qt/ha, or 12 qt/ha more than the most commonly used local varieties of Sabini and Holker (respectively yielding 35 and 34 qt/ha). The yield increase at the research station is thus 35%. In the second season farmers performed even better, producing between 40 and 70 qt/ha with the new varieties.

3 Cooperatives in Ethiopia are generally multipurpose cooperatives; in fact, the malt barley cooperatives were later forced by the Government of Ethiopia to integrate into existing multipurpose cooperatives, where they formed malt barley groups.

4 The new varieties have a lower protein content compared to traditional varieties (8.0% versus 9.2%), which is beneficial in the brewing process. Moreover, 100% of the new varieties was grade A, indicating a much larger grain size. Only 52% of the Sabini and 16% of the Holker varieties were grade A.

B. Technical assistance

CREATE's agronomic team organized trials and demonstrations and continues to cooperate with universities and research institutes on malt barley variety development and improvement. In 2014, the team trained people from government, NGOs and cooperatives using a train-the-trainer approach. Training in good agricultural practices was delivered to 3,500 farmers.

Trials with new fungicides showed an additional yield of 6 qt/ha, ranging from 3 to 12 qt/ha for different varieties. With the costs of the treatment being equal to 1 qt, these fungicides proved economically attractive. Heineken provided these chemicals to the farmers.

Quality inspection training was provided for 102 lead farmers and other people from unions and cooperatives. In addition, the project contracted the company Star Ethiopia for quality inspection work. This proved more complicated than anticipated; despite the training they received, not all inspectors were able to perform as expected due to lack of some basic quality-checking equipment.

C. Access to finance

Heineken delivered seed valued at 1,200 Ethiopian Birr (ETB) per farmer; the company also provided agrochemicals. Some of the farmers paid for the seed themselves or got it pre-financed by MFIs. Heineken pre-financed inputs for a total value of 5.1 million ETB. At harvesting, Heineken advanced another 4.8 million ETB for output marketing. The total advance of 9.9 million equals some 17% of the value of the malt barley collected. At the start of the second season, 9% of all advances were not yet repaid. The repayment rate for lead farmers and cooperatives was the same. For lead farmers, there was a huge difference between zones: in Arsi, the repayment was nearly 100%; in West Arsi, it was only around 80%. This was one of the reasons why in West Arsi, 40% of the lead farmers were replaced in the second year (another reason was delivery of poor quality malt barley). Of the cooperatives, 25% were not contracted again in the second season.

D. Access to market

Traditionally, the farmers consume 50% of the malt barley they plant. With a yield of 25 qt/ha and 0.6 ha/farmer, an average farmer was expected to deliver 7.5 qt of malt barley to Heineken. The table below shows how much malt barley was actually marketed by the different types of channels using different interfaces.

Table 3: Delivery performance of different types of interface

	Contracts	Farmers	Amount contracted (qt)	Amount delivered (qt)	Percentage delivered (%)
Lead farmers	44	1,864	1,676	3,381	202
Multipurpose unions	2	1,002	874	458	52
New malt barley cooperatives	16	2,526	2,479	1,221	49
MFI groups	4	256	353	124	35
Total	66	5,648	5,382	5,184	96 (average)

The lead farmers delivered twice as much as they contracted; unions and cooperatives delivered only half of what they agreed upon and MFI groups only one third.

The main reason for the poor performance of unions and cooperatives is that they were struggling to set up their governance and management system and to get recognized by the government. In this start-up phase they did not have the facility to store seed or sufficient working capital. As a result, they got only a limited amount of seed from Heineken. Farmers who used their own seed might feel less obliged to deliver to Heineken. Four cooperatives did not manage to deliver any malt barley. As they were supposed to deliver 20% of the total, the average of all others is 62%.

MFI-led groups performed very poorly. The groups were too small and were insufficiently organized. The small quantities make it difficult to organize a full truck, so it is not easy for Heineken to work with them. MFIs play a crucial role in organizing these groups; however, no special loan types have been developed that would assist them.

There are a few other indicators for performance of the interfaces, including the quantity of barley delivered per farmer, the advance from the company needed per quintal of barley collected and the quality of the malt barley. Lead farmers supplied an average of 18 qt per farmer, implying that they buy from more farmers than only the ones they had provided with seed. They need 138 ETB/qt for collection, and 15% of their barley is grade A. HUNDEE-led malt barley marketing cooperatives supplied an average of 6 qt per farmer, needed 378 ETB/qt to collect this and supplied barley that was 26% grade A. Unions collected 6 qt per farmer, for 198 ETB/qt, with 15% of the barley being grade A. This shows that the lead farmers are more efficient, the cooperatives are inefficient but conscientious about quality, and the unions are in between.

E. Risk management

The risks for farmers are very limited; malt barley production is well known to them and they can sell to many buyers. They stand to benefit from the better seed. The risks for Heineken, however, are substantial. It offered 17% of the value of the produce as an advance to 6,000 farmers without any guarantee. We saw that 9% of this (so 1.5% of the value of the produce) was outstanding at the start of the new season.

F. Quality control

Getting better quality malt barley was one of the main reasons for Heineken to enter into contract farming. One way of ensuring quality was to hire a firm (Star Ethiopia) to check the quality at the village-level delivery points (lead farmers and cooperatives). The basic parameters were grain size, varietal purity, amount of foreign matter, moisture level, colour and smell.

The work of the quality inspectors was useful, as it made farmers more aware of the importance of quality. At the same time, the result was not fully satisfactory; as mentioned, not all inspectors were able to perform as expected due to lack of some basic quality-checking equipment.

G. Logistics arrangements

Logistics was an important task for the firm. It had to collect 1,000 truckloads of malt barley from dozens of places in a relatively large area over a period of a few months. The contract stated that Heineken would collect the malt barley from the villages for free. In most cases Heineken organized the transport, yet the costs were mostly divided between the farmers and the firm. This was a breach of contract and illustrates the complexities of the price setting (see below).

Storage facilities had to be hired to consolidate the produce. Organizing quality inspections and setting up a payment system were additional logistical burdens.

H. Price system

The contract stated that Heineken would pay 7% above the base price and would cover the transport costs. Yet pricing proved to be a complex affair. A committee of members from the agricultural office, cooperative bureau, market development office, AMF and brewers set the initial base price at 850 ETB/qt. Heineken consequently offered just over 900 ETB/qt, but farmers waited for better prices. After one month another brewer, Diageo, offered a premium of 20%: 1,020 ETB/qt. Heineken slowly increased its price as well, but did not manage to buy much until it was also paying 1,020 ETB/qt. Later in the season, it added free transport for attractive deals (in term of quantity or quality). In the final stage of the season, the price went up to 1,050 ETB/qt plus transport for a large quantity (2,500 qt) from Raya Kajewa Union.

Quality issues confuse the price setting. This is a systemic issue; although Heineken sets clear standards, other firms use different standards: malt barley considered as second grade by one firm could qualify as first grade by another. Secondly, the price/quality ratio is not always consistent, making it financially attractive to mix malt barley of different qualities.

In the new contract for the second season, Heineken offered a premium of 10% on the base price and advised cooperatives to charge farmers 12 ETB/qt as direct handling costs and take a commission of 2% on top of that.

I. Payment system

Heineken set up a system that pays the interface as soon as a quality inspector gives approval using a smartphone application. The payment is made to bank accounts where available in a few days. AMF, in contrast, generally pays after one month, often even later.

4.1.3 The interface

A. Characteristics

As mentioned in 4.1.1, there are four types of interface at play in this value chain, constituting four different sales channels to Heineken: lead farmers, primary cooperatives, unions and MFI groups.

B. Communication

The firm made a significant investment in setting up a communications system with all actors. The agronomic team, Heineken and HUNDEE had regular meetings with farmers and their representatives, as well as with each other. Contracts were written in the local language and explained in meetings.

Communication with unions and cooperatives is often complicated. For example, when Heineken delivered seed to Raya Kajewa Union, the manager did not inform the board that these were intended for specific cooperatives. The board wanted to distribute the seed to all cooperatives. When the board was told this was not possible, it blocked the store and the police had to be called to free the seed. Another example is that in the second season, the cooperatives ordered three times more seed, on average, than they needed. Unions particularly ordered too much: up to 10 times more than required. This makes planning complicated and time-consuming. The communication and planning with lead farmers is much easier.



C. Organizational set-up

All four interfaces have the following responsibilities: 1. Organize seed distribution to farmers. 2. Organize pesticide distribution to farmers. 3. Facilitate technical assistance. 4. Purchase, storage and administration. 5. Quality inspection. 6. Organize sales to Heineken. 7. Pay the farmers, deducting advances.

The least amount of information is available about the lead farmers, as the CREATE project does not examine in detail how they organize everything. This is perhaps because the lead farmers delivered the agreed amounts.

More is known about how the cooperatives and unions operated. In the second half of 2014, HUNDEE started to organize farmers into 16 new malt barley cooperatives, which were later forced by the Government of Ethiopia to integrate as malt barley groups into existing multipurpose cooperatives.

On average, the cooperatives had 160 members, with each cooperative delivering 765 qt of malt barley. This is 12 trucks per season, with two trucks per week in the peak period. In 2015/16 the unions and cooperatives are supposed to deliver 50% more malt barley compared to the year before. In the long run, the aim is to get 500 members per cooperative, each delivering 10 qt. This would lead to 72 trucks per season, and one almost every day in the peak period. In the first year, volunteer cooperative members did virtually all the work. It is clear that this cannot continue; cooperatives will need to employ staff to be able to handle the increasing quantities.

The last interface is formed by the groups organised by the MFIs. Two MFIs have financed the inputs of malt barley farmers since 2011: Wasasa and Busa Gonofa. Supported by Terrafina (with a guarantee) and the International Center for Research and Development (CIDR) (with technical assistance) they organized farmers in groups of around 50. This system was piloted in 2011 with 124 farmers. It was a success, and in the next season 989 farmers were involved. The numbers fell to 730 in 2013 and 200 in 2014.⁵

In terms of input financing, Heineken gave seed to the MFIs to distribute to farmers. The farmers signed a loan agreement (18% interest). At harvesting, the MFIs collected the loans and repaid Heineken; the repayment rate was 93%. As discussed above, MFI groups managed to sell 35% of the contracted amount to Heineken.

D. Financial sustainability

Lead farmers

Lead farmers are the most efficient at delivering malt barley, yet little information is known about their financial model. They need fewer advances from Heineken, but it is unknown what price they offer to farmers delivering malt barley, or what their costs and (net) margins are. Interviews with local traders show that they buy malt barley for 100 ETB/qt, below the expected sale price. About half of this is needed for transport costs; thus their gross margin is around 5%.

Cooperatives

Many stakeholders prefer cooperatives as an interface, as this is thought to empower more farmers and offer more opportunities for long-term agricultural development. Therefore, some details about the financial performance of cooperatives are provided in Table 4, followed by a brief analysis of how they could improve this.

5 HUNDEE and the MFIs could not agree on the approach to follow. MFIs believed that investment should be commercially justified and capital needs should be covered by normal loans. HUNDEE felt that new cooperatives needed seed money to get started (e.g. a grant to build a store). Finally, the parties agreed to work in different areas and avoid confusing farmers with their different approaches.

Table 4: The financial performance of cooperatives

Gross margin on inputs	Gross margin on outputs	Financial details
Seed: 0%	Malt barley marketing: 1–5%	Avg. turnover: 1 million ETB
Pesticides: 3%		Net profit: 5,000 ETB
Fertilizers: 0.5%		Profit margin: 0.5%
		Dividend: 40 ETB/member
		Savings: 20 ETB/member

Source: Survey of six cooperatives supported by HUNDEE; five of them have been audited

In essence, the cooperatives organize the seed supply for free. The margin for pesticides is better, at 3%, but usually this applies to small amounts. The margin on fertilizers is always 11 ETB/qt, which is the difference between the purchase and sales prices fixed by the government.⁶

On the output side, the margin ranges from 1 to 5%. In most cases, buyers advance cash to the cooperative to buy a truck of malt barley. The buyer covers all direct costs, and the cooperative gets a commission of 10–20 ETB/quintal to cover its overhead costs. This gives a gross margin of 1–2%.

Summarizing the performance of the 16 cooperatives in 2014/15, we conclude:

- Four cooperatives did not deliver anything and ceased to operate as a cooperative.
- The cooperatives involved 150 farmers, which is 30% of the target of 500 members.
- Cooperatives paid their members a lower price for malt barley than traders paid.
- Despite the lower price, the cooperatives’ profits and dividends were very small.
- Savings are minute and do not compensate for inflation.
- Only 50–60% of the contracted amounts were delivered.

Obviously, members will only capitalize their cooperative if it is accountable. This is not always the case. Three of the audit reports show serious problems; in the case of Wamagne, which has a lot of cash, 100,000 ETB was embezzled, and two other cooperatives had cash shortages of around 3,000 ETB.

MFI groups

It seems natural that cooperatives would cooperate with MFIs to offer their members access to input loans. Yet cooperatives have cheaper options: interest-free advances from buyers and cheap loans from the Cooperative Bank of Oromia (via the unions). The latter is partly due to government pressure to give loans for malt barley producers. MFI financing thus becomes less attractive.



4.1.4 Enforcement

A. Type of contract

Heineken signs a contract with the interfaces which then sign a contract with the farmers. The contract specifies the price, quantity, quality of the produce, time of delivery and place of delivery.

B. Liability

The lead farmers respected their contracts with Heineken and delivered double the amount agreed. The unions and cooperatives supplied only 50–60% of the contracted amounts to the different buyers (AMF, Diageo and Heineken). It is apparent that contracts cannot be enforced.

⁶ Rashid et al. (2013) have shown that cooperatives suffer a net loss of 1% on fertilizer supply, while it would be 5–8% profit in a free market.

The main issue remains the price set by the committee, which is being considered as a benchmark; as soon as market players offer higher prices, enforcing any contract becomes unrealistic.

C. Comprehensiveness

In Ethiopia, the contract between the cooperative and the farmer is a rather loose one; in most cases, farmers simply sign a piece of paper specifying the deal details: the amount of seed (and pesticide) the farmer will get, the size of the malt barley field, the expected production and the amount to be delivered. It is difficult to see these signatures as legal proof that the farmer fully understood the conditions of the contract and can be held accountable for failing to deliver accordingly.

D. Built-in enforcement systems

The fact that the value of the seed needs to be reimbursed in kind can be seen as an enforcement system. However, this covers only part of the value of contracted malt barley.

As mentioned above in 4.1.2 C, at the start of the second season, 9% of all advances were not yet repaid. As a result of the repayment issues and other issues with quality, in West Arsi 40% of the lead farmers were replaced in the second year. Of the cooperatives, 25% were not contracted again in the second season. This ability to choose whether or not to re-contract farmers provides an enforcement mechanism in the current period.



4.1.5 Impact

A. Farmers

Table 5 shows the income per hectare for the 2014/15 season for the new malt barley varieties in comparison with the old varieties and alternative crops.

Table 5: Farmer income from malt barley in comparison with other crops

Item	New malt barley	Traditional malt barley	Wheat	Peas
EXPENSES	(ETB)	(ETB)	(ETB)	(ETB)
Seed	2,362	1,500	2,161	2,205
Fertilizer	3,330	3,330	2,580	1,955
Herbicide	895	600	1,050	760
Fungicide	930	600	1,116	1,200
Total costs/ha	7,517	6,030	6,907	6,120
INCOME	(ETB)	(ETB)	(ETB)	(ETB)
Yield (qt/ha)	45	35	30	15
Price per qt	900	900	850	1,400
Gross income/ha	40,500	31,500	25,500	21,000
Revenues/ha	32,983	25,470	18,593	14,880

Source: Field trials by Malteurop (malt barley) and expert opinions (other crops)

It is easy to see why farmers are enthusiastic about the new varieties: they can provide extra income of 7,500 ETB/ha. Revenues for malt barley are also higher than for other crops. In 2014/15, the new varieties were not available for contract farmers. In the 2015/16 season, however, they were. The first estimates in Arsi Zone show an average yield of 45 and 50 qt/ha, while the maximum for local varieties is 30 and 35 qt/ha for Holker and Sabini respectively: the gain for the new varieties is 10 qt/ha or more, which

gives an additional income of over 10,000 ETB/ha. With estimated additional costs of 2,500 ETB/ha (slightly higher than the data in the table suggest, as higher yields require additional cost to maintain soil fertility), the additional income is over 7,500 Birr/ha or 5,000 ETB/farmer.

B. Firm

In the 2014/15 season, Heineken collected 6,471 tons of malt barley, of which 5,184 tons came from smallholders in this contract farming scheme. This is respectively 14% and 11% of all the malt barley marketed in Arsi and Bale. It was 94% of the target, and the quality of the produce was better than in previous years.

The firm delivered the malt barley to AMF, which processed it for a malting fee. The better quality grains meant that the quality of the malt was better as well. The commissioned malt was still considered as part of the quota that the firm is entitled to, based on its market share.

C. Value chain

This case is the largest pilot on contract farming in Ethiopia. An important question is whether the scheme leads to lower transaction costs. So far, this is not the case. Heineken paid around 3 million USD for the malt barley. Approximately an additional 20% or 600,000 USD of donor money was invested in setting up the system: cooperative development, training, trials, demonstrations, value chain meetings, etc. These are one-off costs that have to be seen as sunk costs; this is the very reason that donors cover them, as no other value chain actor would.

Approximately another 10% or 300,000 USD was paid by the firm to organize its part of the scheme: importing, multiplying and distributing seed, quality control, advancing inputs and outputs, organizing the payment, storing the produce, etc. Part of this might be recovered by increased efficiency due to the breweries getting better quality malt. Another part might be recovered as the system becomes more efficient over time. As a first step in increasing efficiency, the firm stopped working with poorly performing cooperatives and lead farmers in 2015.

At this stage, it is unclear to what extent the additional costs can and will be recovered. Analysis of the underlying issues shows that the firm is involved in a large number of activities that are usually performed by others in a normal rural economy:

- Importing, multiplying and distributing seed is not the core business of Heineken. It does not have the expertise or system for this, or any comparative advantage.
- The firm does not have the systems and procedures to offer advances to rural farmers and their organizations. It is not able to demand any interest on the money it advances, and when cooperatives or lead farmers default, it has no leverage over them to recover their investment.
- When it comes to purchasing malt barley, local traders have a number of advantages over the firm (similar to their advantages over cooperatives). They are more efficient because they can make more efficient use of storage facilities, transport, staff and capital and can deal more efficiently with farmers, as they know them much better.

4.1.6 Conclusions

In the first two seasons Heineken, in cooperation with CREATE and HUNDEE, performed a large number of tasks that are outside its normal capacities and mandate. The main ones are:

- Chain coordinator: numerous meetings with farmers, unions, cooperatives, AMF, Ministry of Agriculture and Natural Resources, Cooperative Promotion Office, ATA, etc. to plan and coordinate the production and delivery of malt barley

- Input supplier: imports seed, multiplies and distributes it
- Chain innovator: trials on new varieties, row planting, plant protection; also, training of quality inspectors in the villages and setting up a new payment system (both are innovations)
- Chain financier: half a million USD was offered as an advance.

The costs of all these are substantial. Some costs are covered by donor support. It is not clear, however, whether this collective investment is compensated by increased efficiency in Heineken's brewing process. What is clear is that Heineken, like any other brewer, has no interest in managing and coordinating the supply chain in the long run. It needs other actors to take over these roles.

This case is an excellent illustration that the ultimate success of contract farming depends on the performance of many stakeholders simultaneously. It also shows that most stakeholders in Ethiopia still have a lot of homework to do. Although the results so far are well appreciated by all stakeholders, the progress at system level has been limited: the monopolies of AMF and seed enterprises are still intact. Banks and MFIs are reluctant (and/or unable) to provide the capital needed; often some form of government pressure is needed to get banks to finance output marketing by unions and cooperatives.

Another interesting question is to what extent does the capacity of a powerful firm like Heineken to solve ad hoc practical problems reduce the pressure on other stakeholders to implement the necessary systemic reforms (e.g. in the area of seed supply, rural finance and output marketing). There is no simple answer.

It actually seems to be the opposite: the results of the contract farming scheme so far seem to motivate all stakeholders to improve their performance. The project illustrates both the weaknesses of the present systems, as well as the potential impact of making these systems work. As such, the impact of the case seems to be much wider than the direct impact on the malt barley chain alone. For example, ATA has used the malt barley case as an inspiration to set up value chain alliances in a range of commodities (in the newly established Agricultural Commercial Clusters).

Sources

Heineken, HUNDEE, Fair & Sustainable Ethiopia and the Cooperatives for Change (C4C) program implemented by SNV and Agriterra have contributed this case.

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4.2 Case 2: Chickpea

Sorsa Debela Gelalcha, Misrak Akilu and Gerrit Holtland

Number of farmers: 284	Drivers of the firm: replication of seed, access to secure supply
Type of crop: staple crop with value addition and local processing	Impact on farmers: very high
Drivers of the farmers: access to improved seeds, inputs and technical assistance	Impact on the firm: low to moderate

Summary

Chickpea does well on the residual moisture that the soil retains at the end of the rainy season. Ethiopia is the largest producer of chickpea in Africa and the sixth in the world. It is the third largest exporter of the crop. In 2014, slightly over one million farmers planted chickpea on nearly 240,000 ha, which yielded 4.6 million qt. This is a tripling of the production since 2000, when it stood at 1.5 million qt (Central Statistical Agency [CSA] 2015).

Export of chickpea in 2014 was 490,000 qt, or 11% of production, down from the 17% exported of the 4.2 million qt produced in 2013. This was due to a drop of nearly 30% in export price, from 65 USD/qt to 46 USD/qt.

The local market remains attractive. Rapid urbanization (3.8% per year) and a growing income per capita are rapidly increasing domestic demand. Chickpea offers protein at a reasonable price for a growing number of people. Its reputation is shifting from “poor man’s meat” to a high quality, healthy source of protein for all.

Moreover, more value addition is taking place. Urban families are developing a preference for ready-to-eat food. More and more processed chickpea flour (with spices added) is sold in supermarkets and retail shops. The United Nations World Food Programme, with support from PepsiCo, developed a chickpea-based ready-to-use supplementary food for children aged 6–60 months old to address malnutrition. Another new development is the inclusion of roasted chickpeas in the traditional snack “kolo” (roasted grains).



4.2.1 The partnership

A. Partners

This case focuses on the Becho Weliso Farmers’ Cooperative Union. The contract scheme operated with two other unions as well: Melka Awash and Hundura Becho unions. Becho Weliso Farmers’ Cooperative Union was founded in 2000 in Southwest Shoa Zone of Oromia Region. The union has its office in Tulu Bolo and also conducts other business activities: it has a factory that produces bags and a facility for blending fertilizer. It has 80 primary cooperatives with 52,892 members (22% women). The union engages in production, processing and marketing services for its members, who mostly focus on growing grains and pulses.

ACOS is an Italian firm that has operated in Ethiopia since 2005, specializing in the production and sale of dried pulses. In 2006 it opened a modern plant in Adama for legume processing; this plant includes a storage capacity of 6,000 tons. Its clients are the major legume and dry cereal processing industries, particularly baked bean producers.

ACOS works with the Ethiopian Institute for Agricultural Research and farmers' unions to ensure that farmers produce the quantity and quality it needs. Its major activities are seed multiplication, research on new varieties of pulses best adapted to Ethiopian environments and development of best agronomic practices.

SNV and Agriterra, two Dutch NGOs, collaborate in the C4C programme, which works with cooperative unions in several value chains, including chickpea.

The Ministry of Agriculture and Natural Resources collaborated in this partnership through its extension system. Development assistants were involved in technical assistance to the farmers.

The FSRE Innovation Fund has financed an Ethiopian NGO, Facilitator for Change (FC), to work on improved chickpea seed production. This work is similar to the ACOS case presented here, but FC worked with the other union in the zone: Hundura Becho. Some of the lessons presented here are contributed by FSRE.

B. Size and scope

The C4C programme organized several workshops with the three unions and ACOS to explore options to work together. As a first step in the cooperation, a memorandum of understanding (MoU) was signed in 2013 with the Melka Awash Union to test the new variety, Kabuli, which has bigger kernels that have a better market in Europe. The union allocated 20 ha of land, which yielded 9.4 qt/ha; this is a normal yield for chickpea. As the land allocated by the union was of relatively poor quality, farmers wanted to grow the new variety on their own land in the next season. Primary cooperatives in Elu, Tole, Dawo, Becho and Saden Sodo districts were selected for their potential to grow and supply chickpea. This case study focuses on the 2014/15 season, when 284 farmers grew 142 ha of chickpea in the first round, and 430 farmers joined in the second round.

C. Drivers

The primary driving force for the Becho Weliso Union was to get access to the new Kabuli type chickpea variety that ACOS has imported and registered under the name ACOS Dube. The firm wanted to promote the new variety and to use the union's capacity to multiply seed. The new variety has larger seed than normal Kabuli types (which are larger than the traditional Desi types), but farmers were not confident that it would bring good yields. Therefore, the union was seeking technical assistance on how to grow the variety well.

D. Support and sustainability

The C4C project introduced an additional financial service: multi-peril crop insurance from Oromia Insurance Company (OIC). With more than half of its shareholders being farmers' unions, OIC is a natural partner to work with unions and cooperatives. The aim of the insurance was to support farmers in taking the risks of planting a new variety. It covers damage due to flood, irregular rainfall (too much or insufficient), frost, fire and locusts. Farmers can insure the inputs or the output. The total expected value of the harvest was 1,074,645 ETB (143 ha with 9 qt/ha with an estimated price of 835 ETB/qt). The insurance premium was 4% of the value: 42,986 ETB. Initially the C4C project and ACOS paid the premium. When farmers were asked to pay the premium in 2015, they declined to do so.



4.2.2 The contract

A. Quality inputs

ACOS supplied 198 qt of quality seed of ACOS Dube variety to the union as an advance that was distributed to 284 producers on credit. Another input provided by the contract farming scheme was rhizobium, a bacterium that improves soil nitrogen for subsequent crops. This input was provided through the Bishoftu Agricultural Research Institute.

B. Technical assistance

To help farmers with growing the new variety, the Becho Weliso Union organized in-house training by experts from ACOS, Bishoftu Agricultural Research Institute and SNV. As ACOS was motivated to get the best possible seed back (first generation), it assisted and trained the farmers on seed dressing, field inspection and chemical application. This was done in collaboration with union staff and development agents from the Ministry of Agriculture. Due to this support, no significant crop failure was reported.

C. Access to finance

The union and the cooperatives used their own capital to pay for inputs (except in the case of seed that was an advance). The union is able to borrow money from the Cooperative Bank of Oromia for working capital, but in this case no specific loan was used.

D. Access to market

ACOS and the union signed an MoU. ACOS committed to supplying improved seed on credit. The union was to select reliable members in six primary cooperatives, all of whom allocated 0.5 ha for chickpea. The farmers would supply 80% of their production to their cooperative, which would pass it on to the union; the farmer could use the other 20% as seed for the next season. The union had to clean and grade the 198 qt of chickpea and repay this in kind to ACOS. The firm had the right to buy the remainder of the chickpea in the hands of the union at the going market price. It turned out that this price was prohibitively high for the firm, so it did not make use of this provision.

E. Risk management

There was a risk management component added to the contract farming scheme through the introduction of crop insurance (see above). However, this only insured the farmers; the firm had no insurance in case of losses or defaulting by the unions, the cooperatives or the farmers.

F. Quality control

Quality control is one of the tasks of the union. After harvesting, farmers bring their chickpea to the cooperative, where the union picks it up. In its own storage facility, the union cleans the grain and prepares it for repayment of ACOS seed, distribution as seed to other producers and/or sales to processors and exporters.

G. Logistics arrangements

The union collects the seed from the ACOS store in Adama and distributes it to the cooperatives. It purchases and distributes fertilizers, pesticides and rhizobium. The farmers get the seed on credit; for the other inputs, they pay cash. The union also organizes all output-related logistics, including collection of chickpea, cleaning and onward distribution and sales, and reimbursement to ACOS.

H. Price system

Assuming a farm gate price of 1,200 ETB/qt, the price in the contract is built up as follows:

- The cooperatives pay the farmers 1,200 ETB/qt.
- The union pays the cooperatives 1,235 ETB/qt.
- ACOS pays the union 1,368 ETB/qt.

This was initially implemented from the level of farmers to the union; yet when the union saw the potential of the seed, it considered 1,600 ETB/qt to be a reasonable market price. If ACOS was not ready to pay this, the union preferred to distribute the chickpea seed to its members. This was the case in the 2015/16 season, when an additional 430 farmers got seed on the condition that they return an equal amount after the harvest.

The actual seed price in village-level deals between farmers was 1,100 ETB/qt at harvest time, and this increased to 1,400 ETB/qt at the start of the planting season. In some rural towns, it went up to 1,500 ETB/qt.

I. Payment system

The cooperatives pay cash, after subtracting the amount of seed that the farmer owes to ACOS. The union pays the cooperatives after 2–3 days, by bank cheque.



4.2.3 The interface

A. Characteristics

As discussed above, the interface in this case consists of a cooperative union and its primary cooperatives. Together, these organizations are the interface between the farmers and the firm. The capacity of the interface was built by the NGO's (Agriterra, SNV and FC) involved in the contract farming scheme.

B. Communication

Communication between ACOS and the union was relatively open and well functioning in the technical assistance phase; however, when it came to marketing of the chickpea, the union unilaterally decided to increase the price. This resulted in the firm deciding not to buy the surplus that the participating farmers produced, instead buying only the quantity of chickpea that needed to be reimbursed for the contract.

C. Organizational set-up

The organizational set-up is the same as with all Ethiopian unions and cooperatives. The cooperative members of the union constitute the General Assembly that elects the Board. The logistics and technical assistance work is done by the staff of the union in collaboration with cooperatives staff (often volunteers or members of commissions that receive a small reward for their work). The C4C programme was involved as a technical and financial partner and paid for the insurance supplied by the OIC.

D. Financial sustainability

The union has many responsibilities. It signs the MoU with the firm; collects and distributes the seed and other inputs; collects, sieves and grades the output; and distributes the second-generation seed to other members. The primary cooperatives organize the demand for basic seed and supply of first-generation seed to the farmers, both administratively and physically.

The cooperative gets 35 ETB/qt for its work; this equals a 3% margin. Each cooperative bought around 200 qt, putting their gross income at 7,000 ETB. This is not enough to cover costs; indeed, the cooperatives are not financially sustainable. This is illustrated by another element of the C4C support to the union: in eight primary cooperatives, 50% of managers' salaries was subsidized in the 2015/16 season.

The union does not charge its members for its work, not even for the transport of the seed. It considers this to be part of the services that any union is supposed to offer its members. It does, however, get a margin on the sales of chickpea. In this particular case, the union can afford to provide these services for free as it derives income from its bag-making factory and fertilizer-blending facility.

The union is operating under the assumption that it will benefit later when the seed is widely spread among members. However, part of today's farmers' benefits are windfall profits, received by innovators who are the first to try out new varieties and techniques. When more farmers get access to the seed, prices – and profits – are likely to decrease. By the time the union asks farmers for a contribution (commission) for the work it does, the margins will be smaller and the willingness and capacity to pay will be less.

Another issue is that the union's costs have to be paid somehow; this may in fact mean that less wealthy farmers are subsidizing their better-off colleagues (the innovators) through their cooperative union.

The individual farmers who participate in the scheme get a substantial benefit – double the income per hectare – yet the union that has given them access to this innovation receives a relatively small margin. If farmers contributed 25% of their additional profit, the cooperatives and unions would have had additional income of 888,474 ETB in three years, or 24,680 ETB per month.



4.2.4 Enforcement

A. Type of contract

An MoU has been signed between ACOS and the union. ACOS committed to supplying improved seed on credit, and the union committed to collecting the same quantity of quality seed from farmers to repay ACOS. Simple agreements have been signed between the union, cooperatives and farmers as well.

B. Liability

Although SNV, through the C4C programme, has added insurance to the scheme, there is no clear provision regarding liability in case of default by either party. The increase in market price and the unwillingness of the union to sell the remaining produce to ACOS was not foreseen. The decision not to sell to ACOS was also influenced by the request of the Agricultural Commercial Cluster of Oromia Region to (re)distribute the seed to farmers. The reasoning was that the farmers and the whole system benefit when farmers can plant the new variety as soon as possible. This seems logical, but such an intervention might very well deter private companies from working with unions in the future.

C. Comprehensiveness

The contract does not have any binding element with respect to the sale of chickpea to ACOS, except for the component about return of the seed. It only states that the firm is willing to pay the normal market price for the remainder of the produce.

D. Built-in enforcement systems

Only the binding element in the contract – reimbursement of 198 qt of seed – could be enforced.



4.2.5 Impact

A. Farmers

The union received 198 qt of seed. With a seeding rate of 140 kg/ha this allows farmers to plant 141 ha of chickpea. There are no clear data on the yields. Some farmers claim yields up to 30 qt/ha. But farmers returned the equivalent of 8 qt/ha. So either the yields were around 10 qt/ha, or farmers returned less than 80% of their chickpea to their cooperative. It seems that farmers are misrepresenting their yields significantly.

Data on the yield of non-contracted farmers are also hard to get. Table 6 below presents data about the contract farming scheme, in comparison with the traditional system.

The average national yield of 18 qt/ha is used as a reference. The yield of the contract farmers is set at 22 qt/ha. Unfortunately, this is only an estimate based on informal talks with farmers.

Table 6: Farmer income in the chickpea contract farming scheme

Items	Unit	Traditional system (Arerti)			Contract farming (ACOS Dube)		
		Amount	Price (ETB)	Total (ETB)	Amount	Price (ETB)	Total (ETB)
Expenditures							
Land rent	ha	1	2,500	2,500	1	2,500	2,500
Land preparation	ha	1	750	750	1	1,000	1,000
Seed	kg/ha	100	13	1,300	140	16	2,240
Rhizobium	lump sum	-	-	-	1	320	320
Pesticides	lump sum	1	200	200	2	200	400
Harvesting	qt	18	60	1,080	22	60	1,320
Threshing and storing	pds/ha	9	60	540	11	60	660
Labour	days/ha	24	35	840	30	35	1,050
Other costs				600			1,200
Total expenditures				7,810			10,690
Income							
Yield	qt/ha	18	900	16,200	22	1,200	26,400
Net income per ha				8,390			15,710

Table 6 shows that the net income per hectare nearly doubles under the contract farming scheme. As farmers have 0.5 ha, the extra cost is 1,440 ETB and the extra income is 3,660 ETB. This gives a return on their additional investments of 154%.

In this case, the seed was given in kind, so the average farmer had extra costs of only 320 ETB and still earned 3,660 ETB extra. This is a return on the additional investment of well over 1200%.

B. Firm

The firm succeeded in getting the seed it advanced back from the union (198 qt). However, as discussed, the price asked by the farmers was too high for ACOS to buy any part of the surplus for export. Apart from the valuable lessons learned, there was thus no direct benefit for the firm. It did invest in increasing the overall supply of a raw material it needs, which may result in future returns.

C. Value chain

The union received 1,584 qt of chickpea from the farmers. After quality control, only 34%, or 539 qt, was grade 1. Of this, the union provided 198 qt to ACOS. The remaining 341 qt was given to 430 new farmers; they can plant 243 ha with this quantity of seed. If the farmers who had the first-generation seed again plant 142 ha and again get a yield of 22 qt/ha, together they will produce nearly 4,000 qt of second-generation seed. If one third of this is grade 1, this is enough to provide almost 2,000 ha (or nearly 4000 farmers) with ACOS Dube seed for the following season. At this rate, all members of the union could have access to the new variety within four years.

4.2.6 Conclusions

In technical terms, the scheme is a success. Even when only the 34% of the produce that is grade 1 is used as seed, all members of the union can have the new variety within four years. The new seed gives higher yields, and the produce can be sold for a better price. In the long run, when the new variety is widespread, its price is likely to decrease.

The lack of financial sustainability of the interface is the weak point in this contract farming scheme. The union and cooperatives do a good job, but they are not rewarded sufficiently. While farmers get a return on investment of over 1200%, they are not asked to return any of this to the union that enabled them to get these profits. Apparently this will not change in the near future; in the 2015/16 season, farmers are still only required to return to the union the same amount of seed that they received.

This case study is typical for cereals and pulses that are traded on spot markets. Farmers welcome any improved seed, and unions and cooperatives go a long way to secure a free supply of it for their members. Yet the benefit of the new seed remains with individual farmers and is not used to set up a sustainable interface.

On the marketing side, buyers are eager to secure their supply, but their own business is not predictable enough to ensure that they purchase the chickpea. This is the case because many buyers operate on international commodity markets where prices fluctuate a lot. In the Ethiopian market, demand is strong and price movements are influenced more by local events. Thus the local and global prices are often out of sync; very often, one of the parties to a contract farming deal is motivated not to respect the contract.

Sources

This case was contributed by the C4C programme and by the FSRE Fund.

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4.3 Case 3: Seed potatoes

Gerrit Holtland, Tiglu Tesfaye and Aklilu Amsalu

Number of farmers: Wenchi 54, Bekoji 56; Total 110	Drivers of the firm: replication of seed, access to secure supply
Type of crop: high value horticulture crop	Impact on farmers: high, but could be higher
Drivers of the farmers: access to improved seeds, inputs and technical assistance	Impact on the firm: low

Summary

This case focuses on the attempt of Solagrow PLC to set up a quality seed potato production system with contract farmers. In this potato case, there is no export component involved as seed is produced and consumed locally. Estimates of the area under potatoes in Ethiopia vary widely; most likely the total area is some 70,000 ha (potatoPRO n.d.). Up to one million farmers grow the crop on (very) small backyard plots (average 700 m²).

Yields have long been in the range of 80–100 qt/ha (Haverkort et al. 2012, Bymolt 2014). In recent years, several projects have provided farmers with improved seed (mostly originating from Holeta Research Institute) in combination with better extension services. This is said to lead to yields of 160–240 qt/ha (Field visit by Holtland). A survey by Bymolt (2014) of 190 such project farmers showed a yield increase from 88 to 158 qt/ha. The latest statistical data from CSA (2015) show a national average yield of 137 qt/ha.



4.3.1 The partnership

A. The partners

Solagrow is an Ethiopian firm with Dutch shareholders that started operations in 2006. The firm has an explicit development objective: supply technologies and inputs to support Ethiopian farmers to produce more and better food and thus to contribute to the well-being of the Ethiopian people. Solagrow pledges to reinvest all its dividends in the country. Solagrow works from its headquarters near Bishoftu, where it has 28 ha of land for trials and vegetable production.

B. Size and scope

Solagrow has two farms at high altitude (over 2,400 m) of 100 ha each for the first propagation of basic seed: in Wenchi (Ambo Zone) and Doba (Arsi Zone). The second round of multiplication is done at another four farms of 30–50 ha at mid-altitudes (1,600–2,100 m). Each farm serves as a nucleus farm for surrounding farmers (for demonstrations, seed and mechanization). As this type of system can only become sustainable in a proper crop rotation system, the firm also works on other crops with the farmers. Presently, Solagrow works with 470 farmers on eight locations all over Ethiopia.

This case study focuses on two areas: Wenchi (Ambo Zone) and Bekoji (Arsi Zone). In Wenchi, the cooperation between the farmers and the firm was initiated in 2007. The firm started producing improved seed potatoes on 10 ha provided by the regional government. Initially, it was an adaptation trial to see if the area was suitable for potato production. Next it started working with contract farmers: in the first year seven farmers were involved; in the second year this increased to 27. In early 2016, 54 farmers were engaged in this location. They also grow snow peas for export, which is both economically and technically advantageous.

In Bekoji, the firm followed a bottom-up approach in land acquisition. It sat down with farmers to negotiate a lease contract. The land belongs to ex-soldiers who leased most of it to local farmers for grazing. The normal annual rent was below 1,000 ETB/ha, and Solagrow agreed to pay 2,000 ETB/ha for a period of 15 years. In early 2015, 56 farmers were involved in this location.

C. Drivers

Solagrow aims to be a financially sustainable firm that addresses the poor state of affairs in the seed potato production system, which is illustrated by the price of local seed potatoes. In well-developed potato production systems, seed potatoes can be sold at eight times the price of ware potatoes. This is due to the biology of the crop: seed quality is a major determinant of the yield. The quality of seed deteriorates quickly with each generation, and it is not uncommon that yields are 10% lower in each round. In Ethiopia, the price of local seed potatoes is only about twice the price of ware potatoes, suggesting an enormous margin for quality improvement of seed potatoes.

D. Support and sustainability

In 2014, with support of the Dutch government's Facility for Sustainable Entrepreneurship and Food Security (FDOV)⁷ project, Solagrow linked farmers to MFIs. Although the contract farming scheme failed that year, as the firm could not buy the seed potato produced by the farmers due to a lack of working capital, still the partners in the FDOV project (SNV and MFIs) continued to work on the group formation process and on training the farmers. The supporting actors thus assured the sustainability of the scheme temporarily. Of course for a successful contract farming scheme, the firm needs to be able to honour the contract.



4.3.2 The contract

A. Quality inputs

The firm has set up a warehouse near the production area to supply farmers with high quality potato seed of the right variety, adapted to the agroecology of the area. The seed is distributed to farmers at 800 ETB/qt and free of transport cost. This is well above the 250–375 ETB/qt farmers pay for local seed.

B. Technical assistance

Farmers need to apply good agricultural practices, paying more attention to disease control and quality issues in general. The firm offers technical assistance for free. It employs one agronomist and covers the salary of one Kebele administrative staff member. Farmers are trained on-farm in the key issues of crop protection and post-harvest handling. This is important, as seed potatoes need much care during harvesting: only egg-sized seed potatoes are to be harvested, so the correct timing of harvest is important.

C. Access to finance

Solagrow initially offered all inputs for free to farmers. In 2014, with support of a Dutch-FDOV project, it linked farmers to MFIs. In Wenchi this is Specialized Financial and Promotional Institution, an MFI that offers farmers a loan to purchase inputs. All 54 farmers took a loan. Farmers in Bekoji are better off; only seven of the 56 took a loan from another MFI, Harbu. Loans are mostly in the range of 5,000–6,000 ETB. In both study locations, most farmers are now able to pay cash for inputs.

⁷ Solagrow is presently part of multiple Dutch FDOV projects. See <https://aiddata.rvo.nl/projects/NL-KVK-27378529-FDOV12ET09> (€ 1.7M) <https://aiddata.rvo.nl/projects/NL-KVK-27378529-FDOV14ET06> (€ 3.0M for three beneficiaries)

D. Access to market

The firm guarantees to buy all quality seed potatoes at the current market price plus 100 ETB/qt. For the season investigated in this case study, this did not happen.

E. Risk management

The firm uses a comprehensive approach: it offers farmers access to inputs, technology (mechanization services), skills, finance and markets. The risks for farmers are limited to production and price risks. The main risk for the system might emerge from the comprehensive approach: the firm has significant responsibilities and needs a lot of (human) resources to discharge these. While it gets significant donor support to do this (a subsidy of € 1.7 million from FDOV, see above), it also requires much management effort to orchestrate the contract farming scheme and make it effective.

F. Quality control

The agronomist of the firm monitors the agronomic practices and checks the quality of the seed potatoes. He informs farmers when to harvest. Timing is crucial: farmers are used to optimizing their yield in kg/ha, so they tend to wait too long and tubers get too large. However, for seed potatoes, the important factor is healthy tubers, so earlier harvesting is better. Seed selection is done in the field to avoid transport costs. Rejected potatoes are transported to the nearest market (at the farmer's cost) and sold as consumption potatoes for the local market price.

G. Logistics arrangements

The firm provides all logistics: seed potatoes are delivered to the farm, and the harvest is collected from there as well. Rejected potatoes can be transported to the nearest market if farmers agree to pay the costs.

H. Price system

The contract states that the firm buys all quality seed potatoes at current market price plus 100 ETB/qt. However, it is not easy to know the current market price; for example, in Bekoji there is no established seed potato market. In areas with a more established seed potato market (such as Wenchi), there are different qualities of seed potatoes on the market with different prices. The question is which of these prices will be the benchmark.

As the firm did not actually buy the seed at the end of the 2014/15 season, there are no data on the sales price from Solagrow. Having no market outlet via the firm, the farmers sold the seed to each other; in Bekoji the price was 50 ETB above what was considered to be the market price for "normal seed" (which came from elsewhere).

The firm is willing to buy the rejected potatoes at the normal market price, but farmers are also free to sell them on the market. In practice, farmers opt to do the selling themselves.

I. Payment system

The firm plans to pay cash, after subtracting any advances that have been made available to farmers. In practice, there are no advances as farmers have access to small loans from the MFIs.



4.3.3 The interface

A. Characteristics

Farmers are organized in informal groups called producer groups, which have their own by-laws. All communication between the firm and the farmers goes through these producer groups.

B. Communication

The firm is very close to the farmers; there is direct communication between the top management of the firm and the farmers, as well as the formal communication lines that go through the producer groups. Organizing the communication is the only function of the groups. They have no role in the distribution of inputs or the collection of seed. The employee of the firm who does the training also looks after the communication.

C. Organizational set-up

The contract farming scheme in this case study is very small. However, in 2013 Solagrow was awarded a new FDOV project by the Dutch government to set up an extensive contract farming scheme with approximately 11,000 farmers in three years from the beginning of the project. Farmers will follow a four-year crop rotation in which seed potato is the “engine” that brings in the main profit of the system. The farmers will be organized in groups of five for loans from MFIs; 5–10 such groups will then be united in second-level groups and 5–10 of these will be organized in a cluster of around 250 farmers. Although these clusters will be large, they are still supposed to be informal.

As the only role of these groups is to organize the communication, they need few resources. This is meant to enhance their sustainability. Whether that is feasible or an incentive system is needed will only become clear in the future. Much will depend on what “communication” entails. Other cases illustrate that it firstly implies administering members’ needs and obligations. How much seed do they need, of what varieties, which pesticides, how much do they want to market, etc.? Secondly, it usually involves meeting with farmers, with the firm, and with government officials. Thirdly, the leaders are required to negotiate with third parties on behalf of the members. The skills, time and social capital needed to fulfil such tasks are often underestimated.

A major risk is sustainability: a community leader willing to take on these responsibilities in the initial stage may be found, but when it becomes a permanent task without a clear incentive, that person may withdraw. A second risk of the voluntary set-up is that farmers will find it difficult to save a substantial part of their (additional) profit. At present all the gains of the scheme go to the farmers or the firm, and none to the interface.

The Wealth Creation through integrated development of Potato Production (WCPP) project, funded by the Common Fund for Commodities (CFC), ran from 2008 to 2012 and was evaluated at the end of 2013. The project gave smallholder farmers access to new seed, training and storage. The evaluation concluded that seed producers increased their yields from 88 to 158 qt/ha and that they earned over 60,000 ETB/ha per season. This was invested in assets such as houses, mobile phones and livestock. Farmers also bought more fertilizer and rented more land. Yet they did not invest in any system to sustain the supply of high quality seed. Indeed, the survey found that farmers had not renewed their seed in the last four seasons.

Like many similar projects in Ethiopia, the new seed was given to individual farmers. If they had been given to a functional cooperative, which would have given them an advance to its members on the condition of returning 1.5 qt per quintal received, a sustainable revolving system could have been set up that would ensure that the cooperative had enough money to buy new high quality seed every year (see also Holtland 2008).

D. Financial sustainability

As Solagrow is playing the interface role, it has the role of accumulating the savings that can sustain the supply system. This could very well be the best option for the moment in terms of skills and efficiency. Still, the option to set up a solid cooperative could be explored. When the scheme works as intended (so the farmers sell their seed for 500 ETB/qt to the company), farmers could be asked to invest one quarter of their profit in a cooperative. With 500 farmers in a cooperative having 250 ha of seed potatoes, this would yield 1.5 million ETB, enough to purchase the annually needed 2,500 qt of quality seed, after the running costs of the cooperative are deducted.



4.3.4 Enforcement

A. Type of contract

The contract is signed between Solagrow and the informal groups. All members sign individually, on the same contract.

B. Liability

It seems that this type of contract cannot be enforced, as the group is not a legal entity. In practice, this was not a problem; instead, the problem was that Solagrow was unable to buy the seed from the farmers as promised in the 2014/15 season, due to a cash flow problem in the firm. As this was not yet fully resolved at the time of planting in 2015, no contracts were signed for that season. The firm also did not purchase the rejected potatoes, for which it offers only the going market price. Farmers preferred to sell these themselves.

The failure of the firm to buy the seed potatoes had a significant impact on the farmers. With a local market price of 400 ETB, farmers expected the firm to pay 500 ETB/qt. In practice, they had to settle for 425 ETB/qt from local traders (who apparently did assess the seed as being better than average seed on the market). With an average seed yield of 110 qt/ha, this is ETB 8,250/ha lower than agreed in the contract. This means farmers got less than half of the additional benefit they expected.

C. Comprehensiveness

The contract did not include any significant provisions besides the main deal: the company would buy seed potato at the market price plus 100 ETB/qt.

D. Built-in enforcement systems

There was no enforcement system. This case shows that although in some cases the farmers can be subjected to enforcement, it is very difficult to do so with the firm.



4.3.5 Impact

A. Farmers

So far the impact is limited, as the firm did not purchase the seed potatoes. However, the farmers are still interested because even if the firm does not buy the seed potatoes at a premium, they can still derive a profit (Table 7).

Table 7: The impact of quality seed potatoes on farmers' incomes

Items	Unit	Traditional grower			Contract farmer		
		Amount	Price (ETB)	Total (ETB)	Amount	Price (ETB)	Total (ETB)
Expenditures							
Land rent	ha	1	2,000	2,000	1	2,000	2,000
Land preparation	ha	1	2,000	2,000	1	3,350	3,350
Seed potatoes	qt/ha	30	400	12,000	30	800	24,000
Fertilizer	qt/ha	2	1,450	2,900	4	1,450	5,800
Pesticides	lump sum	1	1,450	1,450	1	2,900	2,900
Harvesting	qt	120	10	1,200	200	25	5,000
Labour	days/ha	25	40	1,000	50	40	2,000
Other costs	lump sum				1	1,000	1,000
Total expenditures				22,550			46,050
Income							
Yield (seed)	qt/ha	70	375	26,250	110	425	46,750
Yield (ware)	qt/ha	70	250	17,500	110	250	27,500
Total gross income				43,750			74,250
Net income per ha				21,000			28,200

There are no data available from the contract farmers; estimates used are based on interviews with experts and some data from reports (Haverkort et al. 2012). The data refer to 2013 and 2014. Data from 2015 are not complete enough to use; in any case, prices were substantially higher for both ware and seed potatoes, suggesting higher potential profits.

As can be seen in the table, the net income (income minus expenditures) is 28,200 ETB/ha, and farmers earn 7,200 ETB/ha more with the new seed. Assuming farmers have 0.5 ha, they gain 3,600 ETB on average. This is a good incentive to stay in the scheme.

B. The firm

Under the current circumstances, there is no financial return to the firm. However, it has learned valuable lessons and has stimulated the set-up of a scheme from which it could benefit in the near future. Solagrow has many responsibilities to donors and farmers alike that it has not been able to fulfil in this case.

C. The value chain

With a benefit of 3,600 ETB for 470 farmers, the total additional income is nearly 1.7 million ETB. The potential impact on the potato sector is much higher. When the larger scheme is implemented, 11,000 farmers would get a yield of 220 qt/ha on 5,500 ha and sell it to Solagrow at 100 ETB/qt above the market rate (500 ETB/qt); their extra income would be 130 million ETB.

The impact of better seed extends to the next generation of farmer who buys the seed; they also get higher yields and incomes. If Solagrow could ensure that 11,000 farmers produce 110 qt of quality seed, this would be enough to plant 40,330 ha of potatoes. This covers over half of the present potato area. Yet, at the moment, only 2% of all potato farmers use improved seed.

The main bottleneck in the seed market is the lack of finance for farmers. Bymolt (2014) in the KIT review of the CFC project found that farmers who had been given quality seed by the project did not renew their seed for four seasons or more. The main reason is that poor families do not manage to save the profit they make for buying new seed. A second problem is that each farmer only needs a small amount of seed (generally 10–15 qt for 0.5 ha), and getting this delivered to them is inefficient. As discussed, a solid seed potato cooperative could be a sustainable solution to this (Holtland 2008), yet there are no serious efforts towards this currently in Ethiopia.

4.3.6 Conclusions

This contract farming scheme is driven by the potentially large benefits from high quality seed potatoes. As traditional potato seed is severely degenerated, the potential benefit of high quality seed potatoes is very high. The large benefit makes it possible to use commercial loans from MFIs to finance the quality seed. This allows relatively poorer farmers to join the scheme.

The organizational set-up differs from all other cases: rather than working with unions and cooperatives, the firm has staff at a low level in the system. When the system is scaled up, these staff will have to delegate a number of important interface functions to volunteers: people that have to lead informal groups. It remains to be seen whether that will work; experience from other cases suggests that either some form of incentive will be needed or the firm's staff will need to take on some tasks and responsibilities of these groups. In both cases, the costs for the interface will increase.

Sources

SupHort and the LandAc program contributed this case.

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4.4 Case 4: Sesame

Sorsa Debela Gelalcha and Gerrit Holtland

Number of farmers: 1,000	Drivers of the firm: access to secure supply of high quality produce
Type of crop: staple crop with value addition and local processing	Impact on farmers: high
Drivers of the farmers: access to inputs, technical assistance and organic price premium	Impact on the firm: high

Summary

Sesame is an important export crop for Ethiopia. The country is the sixth largest producer of sesame in the world. In terms of export, it used to be third in the world but dropped to tenth as countries such as Sudan and Tanzania became stronger. The main production area is Humera in northern Tigray. The Humera type of sesame grown there has a good reputation: it is sweet and has large seeds and an attractive white colour.

The area under sesame has expanded dramatically in the last two decades. The main jump was from 64,000 ha to 211,000 ha from 1997 to 2007. In the last few years it has been around 290,000 ha (CSA 2015). Data about yields are inconsistent: CSA data suggest yields of 7 qt/ha; field studies in Tigray and Amhara consistently give only half this: 3.5–4 qt/ha. CSA data on the area per farmer are also inconsistent: in the 2013 and 2014 seasons CSA data show an average size of less than 0.5 ha, while field studies in the core production areas give 3–4 ha/farmer.

It is estimated that over 90% of the production is exported; its export value is second only to that of coffee export. In 2013/14 around 300,000 tons – worth 600 million USD – were exported, mainly to China. The next season saw an increase of 5% in volume, yet a decrease in total value of 22% to below 500 million USD. Interestingly, exports in 2014/15 were higher than the reported production, which is possible as traders stored substantial quantities from previous seasons, expecting prices to rise; however, they did not. Sesame prices have been very volatile in the last few years: in 2012, the average price at the Ethiopia Commodity Exchange (ECX) was 2,300 ETB/qt. In 2013 this rose 50% to 3,500 ETB/qt. In the first half of 2014, another 20% increase led to a price of 4,200 ETB/qt. At the end of 2014 the price started to drop quickly, and by early 2016 it was well below 1,500 ETB/qt.

Most of the price fall can be explained by a collapse in world market prices from 2,500 USD/ton to less than half that. Another reason is a local policy change. For many years, Ethiopian exporters were mainly interested in getting foreign currency for their sesame, as they would use this for more lucrative imports. They exported mostly to China in bulk deals of low quality sesame, for which they received correspondingly low prices. In order to give exporters an incentive to improve quality, the government decided in 2016 that the exporters can no longer retain their foreign currency from export to China.



4.4.1 The partnership

A. The partners

Fana Limat is a sesame cooperative in Maycadira in Humera lowland. Established in 1998 by 70 members (21% female), in 2015 it had 3,148 members (27% female). Its main objective is to alleviate problems related to access to inputs, services and output marketing for its members.

Selet Hulling was established in 2007 as a joint venture between the Ethiopian firm Kaleb Service Farmers House (Kaleb) and the Dutch firm The Organic Cooperation (TOC). Kaleb specializes in the export of oil seed, coffee and spices, as well as in the import of agricultural machinery into Ethiopia. TOC, owned by the Canadian SunOpta Inc. group, specializes in the international sourcing and supply of certified organic ingredients for food and bakery industries. It develops projects around the world and sources over 80% of its raw materials out of its own companies and projects. Selet Hulling exports between 20,000 and 25,000 qt of sesame per year. Assuming all of this is exported to the EU, the firm supplies over 40% of the sesame that Ethiopia exports to the EU.

B. Size and scope

In order to source adequate quantities of quality organic sesame (Humera type), Selet Hulling has worked with two primary cooperatives in Humera lowland. It has worked with these cooperatives since 2007. The Tigray Regional Cooperative Promotion Agency, which is in charge of registering and supporting cooperatives, played a facilitation role in this partnership. Initially, the contract covered 300 farmers; this has grown to 1,500. In this case study, the focus is on Fana Limat cooperative, which delivers two thirds of the sesame bought by Selet Hulling from 1,000 outgrowers; Selet Hulling has a similar arrangement with a second cooperative with 500 farmers.

C. Drivers

The objective of the firm is to get adequate traceable organic sesame supply for processing and exporting. The firm's own farm is 300 ha, and it produces around 2,250 qt, which corresponds to about 10% of the processing capacity (1,600 kg/hour).

The cooperatives supply the rest of the sesame. Traceability is possible because the cooperative members all have their unique identification number. Farmers benefit from the pre-financing they receive from the firm for harvest activities, from training and from a secured market for their produce. The firm's own farm also conducts research and development activities and serves as a nucleus farm for the outgrower farmers from both cooperatives. The nucleus farm average yield is 7 qt/ha, 40% above the average of the farmers, who could benefit from copying applicable best practice from the farm.

The firm wants to double its processing capacity and output, meaning that the supply from the cooperatives has to double too. This means either farmers need to increase their production, or the number of sesame farmers needs to double.

D. Support and sustainability

The system is sustainable and does not need any outside support. It has been built over time on trust-based relations between the firm, the cooperative and producers, rather than relying on legal enforcement mechanisms.



4.4.2 The contract

A. Quality inputs

To produce organic sesame, farmers need access to rented tractors, improved seed, organic fertilizers, and labour. Improved sesame seed of the Herir variety is locally available. Fertilizers can be obtained from the cooperative. Only small amounts of fertilizer are used; on average 30 kg/ha is used, which costs around 400 ETB/ha. Farmers prepare organic fertilizer from local materials and plant neem trees; the leaves are used to make an organic pesticide to protect the plants.

Access to tractors and labour is more complicated. Sesame production requires a lot of labour. Geerts (2015) shows that smallholder sesame farmers (up to 30 ha) in Tigray spend 4,800 ETB/ha on hired labour. The value of the family labour used is 1,000 ETB/ha. Total production costs are 6,200 ETB/ha, and 90% of this is labour cost. Recently, some commercial farmers introduced new types of tractors that can better prepare the soil and allow for sowing sesame in rows. Selet Hulling aims to introduce such tractors and extend their service to the producers.

B. Technical assistance

Selet Hulling only buys from farmers that are certified organic by Control Union. The cultivation techniques that they use do not differ significantly from many of the other farmers, who are organic by default. Some technical assistance is provided related to organic fertilizer and pesticide production.

Selet Hulling organizes training, on-farm coaching and visits to its nucleus farm for producers and cooperative leaders. The focus is on the knowledge and skills to ensure the sesame is not contaminated with any pesticide residues during production, harvesting and post-harvest handling. However, support is not given regularly. According to the farmers, at the beginning of the engagement, technical assistance was given at least once a year. But over time it has been reduced. The firm explains that this is because farmers are now capable of producing the required quality of sesame.

C. Access to finance

Sesame farmers need money from June onwards for the first round of weeding. Geerts (2015) shows that on average, farmers borrow between 7,000 ETB (from cooperatives) and 14,000 ETB (from MFIs). As they have 3.4 ha on average, the loans range from 2,000 to 4,000 ETB/ha; this is 30–65% of the money needed.

Selet Hulling advances 3 million ETB to the cooperative without charge. The cooperative advances this to the 1,500 farmers involved: 2,000 ETB/farmer. The cooperative charges the farmers interest of 15% to finance its loan extension costs and related expenses.

D. Access to market

Farmers have to repay the loan in kind immediately after harvest on the basis of local market prices. The cooperative does the same to the firm, on the basis of the ECX price.

The requirement to repay in kind immediately after harvest generally means that farmers get a relatively low price. With sesame, this is partly mitigated by the strong influence of the world market price which moves independently of the yield in Ethiopia. Geerts (2015) shows that across the period 2012–14, in one year the price increased sharply after the harvest; in one year it was level; and in one year it declined sharply.

E. Risk management

The main potential risks for the firm are that farmers may not repay the loan (because they have sold their produce elsewhere) and the risk of getting contaminated sesame. To minimize side selling, the firm works on building trust and a strong relationship with the cooperative and its members by offering better incentives than alternative market outlets. It also tries to resolve any conflict amicably, taking into account the context. Both parties claim that they are satisfied with this approach.

For farmers, the main risks are natural disasters (drought, pests, disease, etc.) that may affect production. No mitigating action is undertaken.

F. Quality control

The quality parameters are commonly understood and accepted. The cooperative and the firm also review them every year. Sesame needs to be clean, white in colour, homogeneous in size and with limited moisture content. Organic sesame should be free of any chemical contamination; this is not too difficult to achieve, as very few farmers use these chemicals. Geerts (2015) shows that different groups of smallholders invest only between 5 and 8 ETB/ha on chemicals. Farmers explain that synthetic chemicals do not bring many benefits; they prefer their organic production practice, including the benefit of having access to the contract farming scheme.

G. Logistics arrangements

At harvest time, the firm distributes a special bag which the farmers fill with their sesame and deliver to the cooperative. The cooperative visually inspects the produce and registers the quantity each farmer supplies. When the cooperatives deliver to the firm, the same inspection takes place.

H. Price system

The cooperative buys the sesame for the going market price plus a premium of 50–100 ETB/qt, depending on the quality. The cooperative sells to Selet Hulling for the going ECX platform price; it does this from its own store gate, which means it does not incur any transaction and marketing costs, saving the cooperative over 100 ETB/qt. Selet Hulling supports the cooperative by sharing (50%) of its losses when the price declines and the ECX price is lower than the cooperative purchase price.

I. Payment system

After the sesame is received by the cooperative, the amount for the loan repayment is deducted. The remaining balance is stored for free in the storage facility of the cooperative. The farmer can decide to sell it at any time. The cooperative pays the farmers in cash upon delivery. Selet Hulling pays the cooperative within a few days of receiving the produce through a bank cheque.



4.4.3 The interface

A. Characteristics

The interface is formed by Fana Limat cooperative. It plays the role of connecting and facilitating transactions between the producers and the firm.

B. Communication

Fana Limat takes care of all communication and administers the money and the sesame flows. It co-organizes the technical assistance, in cooperation with the staff of the firm.

In case of default, the cooperative exercises social pressure and can exclude the farmers from any further service from the cooperative. As a result, no intentional failure of repayment has been reported in these later years of the arrangement.

C. Organizational set-up

Cooperative leaders select the farmers, based on their activities and moral character. The contract is a long-term agreement that is reviewed yearly based on the lessons learned and challenges encountered.

D. Financial sustainability

Due to the service fees that the cooperative charges for lending money to its members, and the adequate price mechanisms, it is financially sustainable under current market conditions. The 3 million ETB advance by the firm is a major incentive for the cooperative, which makes a 15% gross margin through loaning the money to farmers. This gives an income of 450,000 ETB/year or 37,500 ETB/month. This is the largest incentive for any interface among the eight case studies.



4.4.4 Enforcement

A. Type of contract

The contract does not contain many details. It offers much flexibility for the producers, the cooperative and the firm on discharging their responsibilities and resolving challenges. It does not foresee sophisticated mitigation or resolution mechanisms.

B. Liability

The firm feels that detailed agreements are not useful, as the legal system is too weak and bureaucratic to enforce them. It relies more on building trust and a strong relationship with the farmers to minimize potential risks and to resolve any problem amicably. The farmers and cooperative leaders have the same feeling and understanding. The firm generates trust by advancing the 3 million ETB without any guarantee; farmers understand that this is a major sign of trust and respond with responsible behaviour.

C. Comprehensiveness

The contract is not comprehensive.

D. Built-in enforcement systems

The contract farming scheme relies on goodwill rather than enforcement; the firm uses the carrot rather than the stick approach.



4.4.5 Impact

A. The farmers

On average, the cooperative delivers 12,000–15,000 qt per year, or 8–10 qt per farmer. Farmers benefit in a number of ways. Firstly, the premium of 50–100 ETB/qt of sesame provides 675 ETB on average per farmer.

Secondly, farmers get relatively cheap loans of 2,000 ETB at a 15% interest rate. There are great differences in interest rates on loans for sesame farmers. The cheapest are bank loans at 10.5% per year, but smallholders do not qualify for these. The next ones are MFIs, at 19%; the third ones are loans from cooperatives, at 31%. When it comes to informal loans, the rates increase rapidly: from 49% to 76% for relatives and friends and even up to 259% for informal moneylenders. Savings and credit cooperatives (SACCOs) charge very high interest rates as well: 173%. The most direct comparison is with normal loans from cooperatives, which cost 31% (Geerts 2015). The 16% advantage in a loan from the contract farming scheme is thus significant.

Following Ethiopian law, dividend to farmers is 70% of the profit. As seen below, this is 300 ETB/member; if we only consider the 1,500 farmers involved in the scheme, it is 600 ETB/farmer.

The cooperative is also making a profit from the sesame contract farming scheme (Table 8).

Table 8: The income for the interface: Fana Limat sesame cooperative

		ETB
Gross margin on advancing loans to farmers	15% of 3 million ETB	450,000
Fee for storage	100 ETB * 13,500 qt	1,350,000
Annual running costs		-900,000
Dividend to farmer members	70% of profit (by law)	-630,000
	Result for the year	270,000

B. The firm

The total cost of the interface for the firm is 240 ETB/qt; this is 10–15% of the price of the produce (depending on the price of sesame).

Part of the firm’s expenditures are normal sourcing costs; others are extra costs that have to be recovered by the premium for organic sesame that Selet Hulling receives on the international market. This premium is 9–25% (CBI 2013). Due to the fluctuations of the price on the world market, this value is difficult to calculate; but for a 12% premium on an average price of 1,000 USD/ton, the premium translates to 250 ETB/qt or 3.4 million ETB in total.

Out of these benefits, 1.8 million ETB is paid as a premium to the cooperative. The costs of the 3 million ETB advance are estimated at 0.5 million ETB: 8% interest costs and 8% provision for defaulters. The remaining 0.7 million is used for the organic certification system, the extension workers, a contribution to the school and a provision to cover half of the losses of the cooperative when ECX prices go down quickly.

These calculations show how fragile the positive impact on the firm is; there is a risk in agreeing on a fixed premium for organic producers. When the sesame was sold at over 4,000 ETB/qt, a premium of 100 ETB for the best quality was equivalent to 2.5% and the firm made some profit while still paying the premium. When the price recently plummeted to less than one third of this price, the same premium was equivalent to 7.5% and the firm may have incurred a loss.

C. The value chain

The set-up of the contract farming scheme functions well. There is a real win-win for the firm and the farmer. The impact goes beyond the farmers of today, as the firm is planning to double its production. Sopov et al. (2014) report on the case of Depasa Agro Industry, which uses a very similar approach with 1,600 farmers, offering further proof of the benefits of this type of contract farming scheme.

The case might have an impact on the sector as well. While exports from Ethiopia to the EU have been shrinking, the Dutch sesame traders are still interested in new opportunities. The Netherlands African Business Council organized a trade mission on sesame in 2015; the Selet Hulling model was one of the sources of inspiration.

The case has an extra element related to the firm’s corporate social responsibility. Selet Hulling co-financed the building of a school in Humera. This allows children to attend a high school close to their homes, which increases their chance of attending university later. The firm’s support for the education and livelihoods of the children in the community is appreciated; this also consolidated the relationship with the sesame producers.

4.4.6 Conclusions

The sesame case is one of the more successful cases in this publication. Driven by the premium on organic sesame, side selling is not an issue and a stable win-win arrangement is possible for both the farmers and the firm. This is a major achievement in a period when Ethiopian sesame is losing ground in the high quality segment of the world market.

One major reason for the success of the contract farming scheme is the positive role of the cooperative. This is possible because it has a strong incentive to perform. While in most other cases the interface is expected to work for free and does not get a fair share of the benefits, here the cooperative gets more than half of the total benefit that goes to farmers.

As the cooperative is being rewarded for its work, transaction costs have gone down over time. There are no data, but all stakeholders stress that they have developed a strong, trusting relationship that makes doing business much easier. This trust is reflected in the advance given by the firm and its guarantee to cover half of the losses of the cooperative when prices fall. Farmers appreciate this very much and respond with high repayment rates of their loans.

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4.5 Case 5: Bamboo

Gerrit Holtland

Number of farmers: 2,400 (foreseen potential)	Drivers of the firm: access to secure supply of high quality produce
Type of crop: highly perishable (due to processing requirements of the firm)	Impact on farmers: high (potential)
Drivers of the farmers: access to inputs, technical assistance and price premium	Impact on the firm: high (potential)

Summary

This case was contributed by Fair & Sustainable Ethiopia and is based on the experience of the author in working with African Bamboo and GIZ (the bilateral aid agency of the German government, which provides services worldwide in the field of international cooperation for sustainable development) on the bamboo sector in general and the contract farming scheme described here in particular. It is a potential case; although detailed assessments have been done and some work has been undertaken on the ground, the contract farming scheme was not operational at the time of writing (2016).



4.5.1 The partnership

A. The partners

African Bamboo is an Ethiopian firm established in 2012 as a subsidiary of Fortune Enterprise PLC, which since 1961 has manufactured wood and metal products in Addis Ababa. It is currently building a plant to produce woven strand board, compressed bamboo-based panel boards for outdoor and indoor flooring, cladding and structural applications intended for the European export market. It is cooperating with a German partner that is seeking an alternative supply of bamboo panels, as China is reaching its maximum production capacity. With a million hectares of (wild) bamboo, Ethiopia might be a good alternative supplier. The total planned investment is over 20 million euros. GIZ is the main donor and supports the linkages with German institutes that work on the technical part of the bamboo factory.

In the initial business plan, the firm needed 1 million bamboo culms per year. This was later doubled to 2 million culms and later again increased to 3.2 million culms. Assuming that a healthy bamboo plantation has 11,000 culms/ha, of which 25% can be annually harvested sustainably, almost 1,200 ha is needed to supply the firm with 3.2 million culms each year.

B. Size and scope

After several areas were surveyed, Sidama and the adjacent area of West Arsi were selected as 8% of this area is under bamboo, of which 9,600 ha are accessible. Bale Zone has more bamboo (25,000 ha), but it is less accessible. Initially, the project was to set up and capacitate 31 bamboo cooperatives. This was later increased to 40 cooperatives, with 2,400 members in total. This means that the cooperatives have 60 members on average. Each member is presumed to have 0.5 ha of land.

C. Drivers

The firm explored three options for sourcing this large quantity of culms. The first was to exploit some natural bamboo forests (e.g. in Bale Mountains), but these areas proved to be too isolated to make exploitation commercially viable. A second option was to invest in bamboo plantations; however, land acquisition in Ethiopia is complicated, and as bamboo only starts to yield after four years this option was considered too time-consuming and thus expensive. The third option was to buy culms from smallholders, through a contract farming scheme.

The farmers are driven by the profits from bamboo, which are more than from other options currently available to them.

D. Support and sustainability

The linkages with the farmers were initiated in 2010, when African Bamboo was awarded a Private Sector Investment (PSI) project from the Dutch government. The local administration and the Cooperative Promotion Office played an important role in selecting the cooperatives and getting the partnership going.

In 2012 the firm, in consultation with GIZ, asked Fair & Sustainable Ethiopia to:

- Train the farmers and African Bamboo staff about cooperative development
- Design an operations model for the cooperatives and establish a fair price, to ensure a good balance between the interests of African Bamboo, the cooperatives and the farmers
- Based on outcomes of the simulation model, advise farmers and African Bamboo how to shape their future cooperation.

As of the end of 2016 the firm had not yet managed to set up the factory, so there was no sourcing of bamboo. Consequently, the bamboo cooperative never became active. Still, a series of activities have been undertaken by the firm: bamboo nurseries were set up, seedlings were distributed, stores were built for several cooperatives, a pilot facility was set up to prepare bamboo culms for final processing in the factory, pilot groups were set up to produce bamboo mats for shelters in refugee camps, etc.



4.5.2 The contract

A. Quality inputs

The firm has set up a bamboo nursery with high quality seedlings of the right variety that are distributed for free.

B. Technical assistance

The firm offers technical assistance for free: government extension workers and farmer leaders are trained in the key issues of clump management and pruning. This is crucial, as bamboo stands grown by smallholders usually have 20,000 culms/ha, with culms that are too small for the firm's purposes. African Bamboo needs culms with at least a 4 cm diameter, and for this a stand of around 11,000 culms/ha is optimal. However, the farmers prefer the thinner culms, which they use for fencing, roofing and other household uses. The farmers may eventually need to separate the commercial section of their stand from the household section.

Training about plant protection and fertilization was also offered. Culms with even a small defect due to an insect bite cannot be processed in the factory, so farmers will need to become more attentive to pest control and quality issues in general. The firm expects that through better clump management, weeding, mulching and thinning, yields will increase by 40%.

C. Access to finance

Thinning the present bamboo stands would lead to an initial loss of production for the farmers. The firm considered compensating that loss by offering farmers an advance on the yield. This could be done if thick culms were clearly marked in the stands; farmers could get a delivery contract for them. However, the capacity of the cooperatives proved to be too low to implement this scheme, which would also have been expensive.

D. Access to market

The firm wanted to buy 1,000 fresh culms per cooperative, twice a week, at 13 ETB/culm. Therefore, the market available to each cooperative is 26,000 ETB/week.

E. Risk management

If and when the scheme becomes operational, the biggest risk to the firm is the failure of farmers to deliver the right quality culms: fresh and free of any damage. As it turned out, the biggest risk for farmers was that it never got started.

F. Quality control

Quality control is crucial. Bamboo grows at high altitudes, where the infrastructure is very poor and transport expensive. Bringing low quality culms to a cooperative where it will be rejected by the firm is inefficient. To prevent this, two weeks before the planned sale date the quality manager would need to visit the farm and determine which culms are of sufficient quality to be delivered. These would be marked as suitable for harvesting and that mark checked at the collection point of the cooperative.

G. Logistics arrangements

Planning the delivery of the culms is complicated, as the factory can only process culms that are less than three days old. The collection truck has a capacity of 1,000 culms, and African Bamboo wants to buy 1,000 fresh culms each day from a cooperative, two days per week. The members therefore have to bring 333 culms per day in the three days before the firm collection. Members living nearby can bring about half of the culms to the collection centre of the cooperative. Culms from members living further away have to be delivered by donkeys. A donkey can carry 4 mature culms and make 3–5 trips per day. So if 160 culms are to be collected by donkeys per day, around 10 donkeys are needed.

Most villages, however, have very few donkeys; some have none. Also, experience has shown that cooperatives do not always follow optimal practices in looking after animals. So it was decided that the cooperatives would outsource the transport to a small company run by youth in the village. The firm will assist it with the initial capital to purchase the donkeys.

H. Price system

The firm's initial market assessment found that the best culms on the local market were sold for 7 ETB. As the firm was prepared to offer 9 ETB/culm, it expected all farmers would be motivated to supply to them. Reality proved more complex, however. Firstly, the best quality on the local market was often not the quality the firm needs. Secondly, the strict delivery requirements of the firm had costs that needed to be factored in: planning the supply, checking the quality in the field, transporting the culms in time and setting up a sustainable cooperative that could coordinate all this. A detailed costing exercise with the farmers and the firm by Fair & Sustainable Ethiopia (using the ESM methodology; see Annex I) led to an agreed price per quality culm of 13 ETB. This price calculation is shown in Table 9.

Table 9: Bamboo interface: cost-price calculation of bamboo culms

Cost-price calculation		ETB
Purchase price	Cash to farmer	7.50
Transport from hub to cooperative		1.50
Running cost of the cooperative		1.65
Depreciation		0.25
Dividend (to farmers at the end of the year)		1.50
Net profit (reserves)		0.60
	Price per culm for firm	13.00

I. Payment system

As the scheme is not yet operational, no details on the payment system are known.



4.5.3 The interface

A. Characteristics

The 40 cooperatives will be the interface with the firm. As 40 cooperatives is still a large number for the firm to interact with, they could be grouped in four unions: one in each of the four woredas where the firm is working.

B. Communication

From the start, African Bamboo has communicated intensively with all actors, especially with the four cooperatives that participated in their pilot activities. It hired local staff that worked in a few villages where cooperatives were to be set up.

C. Organizational set-up

The organizational set-up of the interface is still evolving; however, the bamboo cooperatives are playing a pivotal role. They are responsible for all key issues:

- Coordination and communication between the firm and farmers
- Planning: knowing when the firm will collect the culms and ensuring farmers harvest these in time
- Quality control: in the field before harvesting and at delivery
- Transport organisation: including ensuring that the company run by youth functions well
- Storage, loading and unloading
- Payment system.

D. Financial sustainability

The data on financial sustainability are available as a simulation only. The ESM is made in Microsoft Excel and integrates all data about the different actors, in this case the farmers, the transport company, the cooperative and the firm. The model was made in a participatory and transparent way with farmers and firm staff. It is based on all practical issues described above and has led to the mentioned price of 13 ETB/culm. The main aim of making the model was to ensure that farmers and firm would agree on a system in which a financially sustainable cooperative would be set up that was capable of delivering the services needed.

The outcome of the simulation was that sustainable village-level cooperatives could be created with revenue of 600,000 ETB (nearly 30,000 USD) and running costs of 75,000 ETB per year. With this budget, they can employ a manager, a bookkeeper, a part-time accountant and a storekeeper.

A commission of 1.65 ETB/culm, or 13% of the price, covers the running costs of the cooperatives. This is more than most Ethiopian cooperatives charge. One reason for this is the in-depth involvement of the cooperative in the transactions, especially the quality control. Another is the design process to develop a sustainable model. By talking in great detail with farmers about the costs of each specific activity, a realistic picture emerged about the costs to the cooperative.



4.5.4 Enforcement

A. Type of contract

A supply contract was designed and agreed between the parties. The contract has not been implemented yet; the construction of the factory has not begun, so the firm has not yet purchased any bamboo. This is foreseen for 2017. The African Bamboo nurseries and some bamboo collection centres have been built. However, talking for more than five years without action is demotivating. As of 2015, many farmers believe that the firm has abandoned them, and they say they will refuse to cooperate if it ever actually needs culms. Others accept that the firm cannot start buying while it does not have a factory; they remain open to future cooperation.

B. Liability

The contract specifies the product as well as the responsibilities of both parties. It has penalties for both sides for possible delays in delivery and in payments.

C. Comprehensiveness

The contract is relatively simple; it can be expected to evolve when activities start.

D. Built-in enforcement mechanisms

No specific enforcement mechanisms have been designed, and it is also hard to see how anything could be enforced.



4.5.5 Impact

A. Farmers

While the actual impact has been zero, the potential impact is large. In assessing this impact, 2013 prices and exchange rates were used. The total value of 3.2 million culms at 13 ETB/culm is 42 million ETB/year, or 2 million USD.

Farmers would usually get 7 ETB/culm on the market, with 1 ETB/culm needed for transport. With the agreed price of 13 ETB/culm, farmers can now receive 7.5 ETB/culm cash at delivery and another 1.5 ETB/culm at the end of the year. The direct benefit of 1.5 ETB/culm is 4.8 million ETB for 2,400 farmers or 2,000 ETB/farmer/year (nearly 100 USD). Another 4.8 million ETB is paid as dividend at the end of the year. As most farmers in practice have 0.25 ha rather than 0.5 ha, their additional income is most likely to be 50–100 USD.

Apart from the total additional income for farmers, 240 new jobs will be created: four in each of the 40 cooperatives and two for each small enterprise that does the transport. Their total income is another 9.6 million ETB.

The total additional income for the rural communities will be 19 million ETB, or 920,000 USD, per year when the factory is fully operational. This could increase if farmers respond to the growing market by planting more, and more productive, bamboo.

B. The firm

The impact on the firm has yet to materialize. It is assumed that under the scenario developed here, its activities would be profitable.

C. The value chain

Although no culms were sold, farmers claimed in early 2016 that the price of bamboo did get a boost due to the interest shown by African Bamboo. The fact that the firm was willing to pay 13 ETB/culm apparently gave farmers the confidence to ask a higher price from traders.

4.5.6 Conclusions

This case underlines the difficulties in synchronizing investments in a processing facility and starting up a contract scheme. The most critical element in this regard is the timing. The firm has engaged with farmers for about five years without actually buying any bamboo. This has led to frustration from some farmers, despite the firm's efforts to build up good relationships with them and despite the significant investments of the firm in nurseries, stores, etc. The lesson should be that a firm should not raise expectations without being sure that it can follow through.

For two or three years, the firm managed to keep good relations with the local community, as it showed its commitment on the ground by building collection centres, distributing seedlings, offering training and starting demo-units.

The use of the ESM, developed by a neutral third party, was a crucial step in the design of the contract farming scheme. As it was made in a participatory and transparent way, the farmers trusted and were satisfied by the outcomes. It also removed the tension between the staff of the firm and the farmers, as both were initially suspicious that the other was manipulating markets and prices.

The ESM was also instrumental in convincing the local firm and its German business partner to pay a higher price for the bamboo. Because of this, the firm was prepared to pay 4 ETB/culm more than originally planned. This represents an additional annual cost to the firm of 12 million ETB (more than half a million USD). The fact that external supporters such as GIZ knew – because of the ESM – what price for the culms would be fair also contributed to the willingness of the firm to accept these extra costs.

Sources

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4.6 Case 6: Green beans

Getachew Mekonnin and Gerrit Holtland

Type of farmers: 40 (2014/15 season; high fluctuation)	Drivers of the firm: access to secure supply of high quality produce
Type of crop: highly perishable, high value horticulture crop	Impact on farmers: low
Drivers of the farmers: access to inputs, technical assistance and production loans	Impact on the firm: low

Summary

Horticulture is an important source of food and of foreign currency for Ethiopia. The favourable climate and the irrigation potential in the Central Rift Valley provide ample opportunities to produce tomatoes, onions, cabbages, sweet pepper, leafy vegetables, beans and potatoes. Smallholder farmers in Ziway and Meki area produce all year round, mostly for local markets and Addis Ababa.

As vegetables are highly perishable, smallholders are constrained by a lack of infrastructure such as cold rooms, poor market outlets and high price fluctuations. In addition, they are often poorly organized to coordinate production and marketing activities. In this case, farmers have been organized in the last decade into water-users' associations that are de facto primary cooperatives. Twelve of them established the Meki Batu Horticultural Cooperative Union in 2002. The union now plays a significant role in searching for alternative markets.



4.6.1 The partnership

A. The partners

Four parties are involved in the green bean contract farming scheme:

- Ethio Flora, which exports the beans
- Meki Batu Union, which organizes the packing and transport
- Irrigation users' associations, which organize farmers locally
- Smallholder farmers, who grown green beans.

Ethio Flora is a private firm set up in 1992 by Tsegaye and Muluget Abebe. The firm rented 70 ha of land near Ziway and has been involved in the export of green beans to Van Oers, a Dutch importer and distributor. Green beans have been exported from this area from many years, even during the Derg regime (1974–1991).

Ethio Flora initiated the contract farming scheme in 1999 with some cooperatives. As soon as the Meki Batu Union was operational in 2002, it started to play a major role as well. The production by the smallholders complements the firm's own production (initially on 70 ha; later extended to nearly 100 ha).

B. Size and scope

In the 2013/14 season, 165 farmers cultivated 72 ha of green beans. This was above the long-term average. The total harvest was 2,524 qt, but this gave an average yield of 35 qt/ha, which was only 70% of the historical average. Of this, 71% was exported, which was slightly above the historical average. In 2014/15, only 40 farmers remained in the contract farming scheme. They delivered 235 qt for export. This is less than 6 qt per farmer, or less than 50% of the historical average of 12–15 qt.

C. Drivers

As the firm could not meet the demand from the Netherlands with its own land, it initiated a contract farming arrangement with smallholders. The union and the smallholder farmers gained access to technical and financial services and were able to enter the production of a relatively high-tech product.

D. Support and sustainability

Over the years, several donor projects have invested in this contract farming scheme. In 2002, Self Help Africa gave Meki Batu Union 70,000 USD working capital, an office and a lorry. It also supported the extension of the EuroGAP certification to a large number of members of the union. The CFC also supported the scheme by donating a packing house (including cooling facility) to Meki Batu Union.



4.6.2 The contract

A. Quality inputs

Ethio Flora supplies the seed of the right variety, fertilizer and chemicals. The union buys the inputs from the firm and distributes these to the cooperatives on credit. The union deducts the loans from the value of the green beans delivered by the farmers.

B. Technical assistance

The union advises farmers about land preparation, planting, irrigating, weeding, fertilizer application, the use of agrochemicals, picking, grading and packaging. Ethio Flora assigns its own experts to visit the farms and to check the quality produced.

Some farmers delayed the land preparation, which meant they had to harvest prematurely to meet the agreed delivery dates. Others invested less than optimally, which led to lower productivity.

C. Access to finance

Meki Batu Union provides credit (interest rate unknown) to the cooperatives to finance labour costs and fuel for irrigation pumps. As the funds of the union are limited, not all costs of the farmers can be covered by loans. There are no external loans (e.g. from MFIs).

D. Access to market

The firm offers a fixed price before production starts. In the 2014/15 contract, the price was 7 ETB/kg. The exporter only buys the first-grade beans; farmers are free to sell the rejected beans to the local markets.

E. Risk management

As this is an irrigated crop, there are fewer production risks than in the case of rain-fed agriculture.

F. Quality control

Farmers agree to fulfil the Global GAP quality criteria, which specify the amounts and type of seed, chemicals, inputs and the agronomic practices to be used. The quality criteria as used by Ethio Flora are understood by farmers as the produce being free from pest, wounds, mud or dust; not broken or damaged; not bent; and fresh. Experts of the union and Ethio Flora check the quality during production and post-harvest handling.

G. Logistics arrangements

The union provides boxes to the farmers to bring the beans to a collection centre, from where they are transported to the pack house by the union's truck. At the pack house, the beans are sorted and packed for export. Rejected beans are returned to the individual farmers and can be sold on the local market. Ethio Flora collects the packed green beans from the union's pack house.

H. Price system

Ethio Flora fixes the price of beans at 7 ETB or 0.3 USD/kg, before production starts.

I. Payment system

The value of the supply per cooperative is calculated, and the payment is effected after the commodity is exported and sold. This is one month after the delivery of the beans. Ethio Flora deposits the money into the union's bank account after deducting any debt of the union. Similarly, the union transfers the value of the beans to the cooperatives after deducting any credit (in kind or cash) provided to them.



4.6.3 The interface

A. Characteristics

The interface between the exporter and farmers has two layers: Meki Batu Union and village-level cooperatives.

B. Communication

A lack of regular communication between farmers and the exporter resulted in conflict between them regarding price and time of cultivation. As prices were fixed, the company was not required to take any action here; however, this is one of the main points of controversy in years that local market prices are high.

C. Organizational set-up

The union negotiates the contract, gets the inputs from the exporter, organizes loans and transport and is responsible for the post-harvest handling.

D. Financial sustainability

Initially, to encourage farmers to produce beans for export, the union did not charge commission for its work. This implies that non-exporting members of the union subsidized the exporting members, as all members contribute for the union's services. In 2013/14 the union charged 0.25 ETB/kg, yet this did not cover its costs. In the next season the commission was increased to 0.85 ETB/kg, which is said to cover all costs. This represents 12% of the price of 7 ETB/kg.



4.6.4 Enforcement

A. Type of contract

In this contract farming scheme there are two contracts. Meki Batu Union signs a contract with Ethio Flora to supply a specified quantity and quality of green beans. At the same time, the union signs a contract with its members (through their cooperatives) to produce the beans. The firm offers a fixed price before production starts. The exporter only buys the first-grade beans; farmers are free to sell the rejected beans to the local markets.

B. Liability

The contract includes no detailed clauses for liability in case of non-performance of one of the parties.

C. Comprehensiveness

The contract defines three stages of conflict resolution. First, the two contracting parties should attempt to solve the problem themselves through discussion and negotiation without involving a third party. If this attempt is unsuccessful, both parties discuss the matter again in the presence of third parties, for example regional authorities, as arbitrator. Bringing the conflict to court is the last solution described by the contract.

D. Built-in enforcement systems

As farmers are associated with their union in other arrangements such as input supply, this reduces the risk of farmers defaulting. Furthermore, the presence and involvement of a primary cooperative that is close to the farmers is an opportunity for close monitoring and enforcement. Also, farmers are attracted by the advance and loan they get from the union. Farmers therefore tend to respect the contract and sell their produce to Ethio Flora at the agreed price.

Having said this, sometimes the local price for green beans is (much) higher than the agreed price. In 2015, local prices for rejected beans were double the export price. Farmers purposely damaged beans in order to be able to sell them on the local market; in response, the union asked the police to supervise the harvest to prevent farmers from damaging the beans.



4.6.5 Impact

A. Farmers

The benefits for farmers include:

- Access to input loans
- Improved inputs and agronomic practices that boost productivity
- Access to new skills and techniques in production and post-harvest handling
- Creation of job opportunities for youth and women, such as harvesting, loading and unloading, sorting, grading and packing
- Farmers have access to a stable market and a guaranteed price.

Data on this scheme are available for 10 years across the period 1998–2015 from three publications. It is difficult to identify clear trends in these data. The number of farmers involved is 136 on average; it ranges from 50 to 225. Trends seem to follow the local market prices (the main alternative outlet). The total area under green beans ranges from 25 to 75 ha. The area per farmer is fairly stable: 0.3–0.45 ha. The estimated yield varies from 30 to 60 qt/ha, with an average of 50. The price/kg of beans is quite stable: between 0.25 and 0.35 USD/kg.

In a typical year, 150 farmers grow 50 ha of green beans, yielding 2,500 qt. Two thirds of this is exported for 50,000 USD. Assuming this has been done for 16 years, the total value of the export has been 800,000 USD. KIT-IIRR (2008) calculated a net profit of around 30% of the price. This would be 240,000 USD or 110 USD/farmer/year. This translates to a profit of 330 USD or about 7,200 ETB per ha.

To compare the results of the 2014/15 season, the gross income to farmers can be used. An average yield of 50 qt/ha sold for 7 ETB/qt gives a gross income of 35,000 ETB/ha. This is not higher than other irrigated crops in the Central Rift Valley. De Putter et al. (2012) show gross incomes of 160,000 and 108,000 ETB/ha for, respectively, onions and tomatoes. While the season in this study was exceptional, with average farm gate prices of 7.7 ETB/kg for onions and of 4.1 ETB/kg for tomatoes, even a more usual yield of 20 tons for both crops with an average farm gate price of 3.5 ETB/kg leads to a gross income that is double the income from green beans.

While green beans remain attractive as a leguminous crop in rotation, in financial terms it is not. This would improve if yields increased to the 80 qt/ha reported in KIT-IIRR (2008) or to 100 qt/ha, as reported for the Upper Awash Agro-Industry Enterprise by Girma and Awulachew (2007).

B. The firm

The crucial parameter for the firm is the proportion of total production it can capture. Over the years, about two thirds of the produce has been sold to Ethio Flora; in two of the four years for which both export and local price data are available, local prices were higher (2007 and 2015). In these years, only half of the production was sold to the exporter.

As mentioned above (4.6.1 B), in the 2013/14 season, 165 farmers cultivated more than the long-term average, and more green beans were exported than the historical average. In 2014/15 only 40 farmers remained; their export delivery was less than half of the historical average; it seems that over half of the exportable production was sold locally. In 2007 this had been even worse; the exported quantity produced per farmer was only one quarter the historical average.

The present 2015 price of 0.3 USD is the average of all reported prices since 1999. It seems that the international market price is relatively stable and that the local market prices hiked in 2015. Whether that increase will become more structural is hard to predict.

Another important factor for the firm is its own production. At the start of the 2014/15 season the firm planned to have 100 ha under green beans, but this was increased to 200 ha, so it contracted out only 15 ha.

C. The value chain

As the ambitions of the firm are limited to complementing its own production, Meki Batu Union wants to increase its remit and become a producer and exporter itself (KIT-IIRR 2008). It has asked the Government of Ethiopia to provide the land it needs for this. So far, the Union's ambitions have not materialized.

In the 2014/15 season, the benefits for the farmers were low. No new contract was signed for the 2015/16 season, and the Meki Batu Union did not export either.

4.6.6 Conclusions

The first conclusion is that Ethio Flora is struggling to develop the export market for green beans from smallholder farmers. The quantities contracted have fluctuated over a period of 15 years and are controlled by the firm. Produce from smallholders is only required when the firm faces a supply gap. Farmers are not satisfied with their dependence; therefore, their union is trying to develop its own export capacity so that its members can produce up to their full potential.

Secondly, the economic benefit of green beans is not better than from crops such as onions and tomatoes. However, having a leguminous crop in the rotation is advantageous.

Thirdly, the local price for green beans today is (much) better than the export price. This also applies to other agricultural products and has happened more often than not in the years the scheme has been operational. Side selling becomes a major problem under these circumstances. Controlling it by policing the harvest is not a desirable or a sustainable solution. No efforts to constructively address this risk (through the contract or otherwise) were found.

Fourthly, over time the financial sustainability of the interface has increased. Initially the union offered its services for free, but the fees it now charges have been reported to cover its costs.

Finally, the considerable donor support did help the farmers and their union to link to export markets; how sustainable this is remains to be seen. It also enabled farmers and their organizations to learn about export procedures and about export quality standards. The support allowed the union to own and manage storage with a cooling facility; yet the storage is only used for a few months per year, making the investment inefficient. In short, the scheme did not pay off in terms of developing a flourishing export business. Despite a deep desire to do so, the union has not yet managed to engage directly in export.

Sources

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4.7 Case 7: Passion fruit

Gerrit Holtland, Aklilu Amsalu and Fekadu Adugna Tufa

Number of farmers: 16	Drivers of the firm: access to secure supply of high quality produce
Type of crop: highly perishable, high value horticulture crop	Impact on farmers: low
Drivers of the farmers: access to irrigation	Impact on the firm: low

Summary

The availability of land, the Awash River irrigation scheme and the favourable climate make the Awash Valley an ideal site for passion fruit production for export to Europe. The middle Awash Valley is a semi-arid region with erratic rainfall, with the Awash River as the sole potential source of irrigation water. AfricaJUICE, the firm in this scheme, also produces mango juice for the local market and a range of fresh fruits and vegetables that are sold locally as well.



4.7.1 The partnership

A. The partners

AfricaJUICE Tibila Share Firm is established on a former state farm located in Middle Awash Valley. It is a joint venture in which Africa Juice BV, a Dutch firm, holds the majority share, while the Government of Ethiopia, via the Privatization and Public Enterprise Supervising Agency, has minority share.

The objective of AfricaJUICE is to become a leading passion fruit juice production firm in Africa that excels in its social and environmental value creation. The firm aimed to be the first Fairtrade-certified tropical fruit grower and juice producer in sub-Saharan Africa. It strives to become one of the biggest producers and exporters of sustainable juice products from Africa.

AfricaJUICE aims to be seen as a model for sustainable development: securing good returns for its investors, delivering significant positive social impacts within local communities and promoting environmental gains. It started operations in 2009, the outgrower scheme followed in 2010 and Fairtrade certification in 2012. This certification applies to its own production with hired labour, not to the outgrower scheme described here.

The farmers in Kilo Kersa, the village where the outgrowers scheme was set up, have 3.2 ha on average and rather large families of seven people. They grow rain-fed crops such as maize and teff, with moderate yields of 20 and 12 qt/ha respectively. Dry beans are a popular cash crop. The area is prone to drought, and access to irrigation is the main determinant for progress. The area is very near the area where the Wonji sugarcane factory (see the next case about sugarcane) is recruiting new outgrowers.

B. Size and scope

The firm has 1,700 ha of land, acquired from the Government of Ethiopia, out of which 1,050 ha of land is occupied by fruit trees. The firm has around 200 permanent staff and up to 1,800 seasonal workers. AfricaJUICE uses the nucleus-estate model: it processes passion fruit from its own central estate as well as from contract farmers who produce on their own land with support of the firm. Though AfricaJUICE had planned to work with an outgrower scheme from the start, the scheme described here was actually initiated by farmers from a nearby village.

On an operational level, the first step was to get the support of woreda officials and register the Kilo Kersa Passion Fruit Producers' Cooperative. Next, contracts were signed with the cooperative to work with farmers in three growing groups:

- In May 2010, the first group of 16 farmers planted passion fruit on a furrow-irrigated block of 9.5 ha. The majority of the group uprooted their crop in the last months of 2012.
- In June 2012, the same 16 farmers formed the second group, planting an additional 10.5 ha of passion fruit with drip irrigation. Most of this area never went into production.
- The third group was planned for June 2012. It was a group of 61 farmers (including most of the original 16 farmers) who were supposed to plant 35 ha of passion fruit (in a furrow-irrigation system), but this never materialized.

C. Drivers

The firm was driven by access to a sustainable supply of passion fruit and has also used the contract farming scheme as an argument to access donor funding.

The smallholder farmers were preoccupied with getting access to irrigation. Before the arrival of AfricaJUICE, farmers organized themselves to set up an irrigation scheme. They failed due to a lack of money, so approached AfricaJUICE for support. The firm promised to work with them, if they would produce passion fruit – a fruit that was new in Ethiopia. After planting, passion fruit needs 10 months until first harvest and then has three productive years. The farmers' original plan was to produce onions, a familiar and profitable crop. Thus, the main interest of the farmers was in accessing irrigation water rather than in growing the unknown passion fruit.

D. Support and sustainability

AfricaJUICE approached several donors to invest in a new irrigation system for its outgrowers. GIZ, ICCO and the Rabobank Foundation stepped in, and the Outgrowers Incubation Project (OIP) was set up in 2010 with a budget of 1 million USD. The firm committed 20% of the budget, and another 20% was supposed to be financed by a bank, but this never materialized. GIZ earmarked its contribution to financing (drip) irrigation, and ICCO tied its donation to the creation of a viable union of village-level cooperatives. Facilitator for Change (FC), a local NGO, was asked to facilitate the relationship between the firm and the farmers, and the local consultancy firm FFARM was hired to develop the business capacities of the cooperative.

The OIP is an integral part of AfricaJUICE's corporate social responsibility strategy. This strategy aims to bring about substantial changes to the livelihoods of a significant number of community members. The objectives of this three-year project were to:

1. Develop a Fairtrade-registered scheme with 100 outgrowers on 100 ha to show the viability of passion fruit as a smallholder crop to farmers and commercial lenders
2. Create and build capacity of farmer organizations to use the available collateral to add 200 new farmers and 200 ha each year. The target is 700 ha passion fruit from 1,000 farmers in 2015

3. Support the farmers to get access to commercial loans (via their cooperative) to finance the necessary investments.

Apart from its support to the OIP, ICCO bought 5% of the shares of AfricaJUICE with the aim of selling these on to the farmer cooperatives once they had the capacity to purchase them.



4.7.2 The contract

A. Quality inputs

The firm provided the farmers with high quality seedlings and with poles and wire for the trellis system needed to cultivate passion fruit, which is a vine. It also facilitated the supply of fertilizers and chemicals through the cooperative, and it arranged other services, such as machinery and spraying equipment. The costs of these inputs was to be deducted from the sales of passion fruit.

The firm was not able to deliver all inputs on time. At the second stage, the farmers did not get the poles for the trellis system, which meant the vines of the passion fruit were lying on the ground and the crop was unproductive. Most farmers in this stage gave up growing passion fruit without ever harvesting anything.

B. Technical assistance

As there was no experience with passion fruit in Ethiopia, both the firm and the farmers had to find out the best way of growing it. AfricaJUICE appointed an agronomist to assist farmers. In the process, several adjustments had to be made on the crop husbandry, including in the fertilization system.

A main issue was the design of the trellis system; the original design was too weak, and in 2012 some trellises were blown over. Although a few plots delivered promising results, the average yield was one third (or more) below expectations.

C. Access to finance

ICCO's contribution to the OIP was to become a revolving fund for the cooperative. The donor money was to be invested in inputs for the first-stage farmers, who would then repay 50% of this to their cooperative. The cooperative would use this money to pre-finance 50% of the inputs for the next farmers in the next stage. This was, however, not incorporated in the contract between the firm and the farmers. The contract stipulated that farmers had to pay back 50%; but this was channelled to the firm instead of to the cooperative. So the donor money ended up in the pockets of the farmers and the firm, leaving the cooperative empty-handed. As a result, there were no funds to support the farmers in the second stage with an advance. Neither could the funds be used as an own contribution for the planned loan that could drive new investments to expand the irrigated area.

Later, a SACCO was set up with all members of the cooperative. The idea was to use the savings as a reserve of the cooperative. However, the principle of a SACCO does not allow for this, as savings in a SACCO are for individuals. Farmers can use the money for replanting their own passion fruit, but the money cannot be used by the cooperative to pre-finance the planting by others.

D. Access to market

As there are no alternative markets for the produce, the farmers depend on the firm to buy their entire production.

E. Risk management

The two local partners in the OIP (FC and FFARM) believed that it was too risky to ask smallholders to grow a totally new, perennial crop without any guarantee. The firm saw the risks as acceptable. Combined with the debate over price and the opportunity costs in the eyes of the farmers of not producing onions, this was a major reason for the local partners to leave the OIP.

F. Quality control

The firm checked the quality of the passion fruit in the farmers' fields. Generally, only a small percentage of the fruit was rejected and left in the field. After the fruit was consolidated and taken to the processing facility, a few more were rejected; this was not deducted from the farmers' income.

G. Logistics arrangements

The cooperative collected the production of its members, and the firm arranged the transport to the factory.

H. Price system

As passion fruit is not grown or sold locally, the firm and the farmers had to negotiate a fair price. Several actors were involved in this: the local NGO, the local consultancy firm and the international Fairtrade organization. Different perspectives on the issue complicated the resulting debate. For AfricaJUICE, the income of farmers from passion fruit should be comparable to their income from dryland farming. For the farmers, the income should be comparable to the potential income from irrigated land. They stress that donor money invested in the irrigation scheme is meant to support their livelihoods. In their view, this means that a large part of the area should be used to grow onions (seen as the most profitable smallholder crop). Another complication was that initially it was unclear what yields to expect and what the actual production costs would be.

Finally, the firm offered the farmers a minimum price of 2.98 ETB/kg and more if the international market price was good. A correction mechanism was built in to allow for changes in the exchange rate between the ETB and USD. The firm was to inform the farmers each month of the international price and the USD rate. The farmers felt they had little choice but to agree. The only thing they could do was to argue as strongly as possible to be allowed to grow vegetables between the rows of passion fruit.

The firm followed the price agreement adequately, but it failed to inform the farmers about changes to the international price. This further fed the suspicion of farmers, particularly as during the first years the price remained at the minimum level. So in 2014 they insisted on an increase in price and, after long negotiations even involving government bodies, the firm agreed to a new price of 4.5 ETB/kg. Ironically, farmers insisted on a fixed price, although by that time the international price was very good and farmers would have benefited from a price pegged to it. This decision was due to lack of appropriate knowledge due to the absence of partner organizations with this role.

I. Payment system

The firm collected the fruit from farmers' fields and paid farmers monthly. Ten per cent of the payment was deducted and used as a saving in a SACCO (see above).



4.7.3 The interface

A. Characteristics

There was only one layer between the firm and the farmers: the Kilo Kersa cooperative. However, the complex support system set up under the OIP added many facets to the interface, as discussed below.

B. Communication

The staff of the firm and the OIP had many meetings with the farmers. All actors report a series of misunderstandings. In the view of FC (the local NGO), the firm broke several of its promises; as a result, in 2011 FC felt obliged to withdraw from the OIP. The local consultancy firm FFARM followed suit. Over time there has been a frequent change of staff in the OIP, which also negatively affected communication.

A strategic mistake in the communication was not to disclose to farmers that donor money was available for investments in irrigation and a cooperative. The rationale was that if farmers knew this, they would be less motivated to repay (part of the) seed money they had received in the first season. When farmers did find out, it undermined their trust in the whole process. Their trust was further reduced as the firm did not live up to the promise to inform the farmers about international price developments. The failure of the firm to deliver the crucial poles in 2012 did not improve relations either.

A critical moment came in 2013 when the firm delayed compensating the third group of farmers who had abstained from growing food crops on their land that was supposed to be planted with passion fruit (although it never was). Some farmers had had to sell household assets in order to survive; only when farmers developed a plan to organize a demonstration in the woreda capital did the firm give in. With support of a committee of woreda officials, an agreement was reached on compensation. This committee, established in 2013, smoothed communication and assisted in negotiating a better price in 2015 when 10 farmers from the first group entered a second-round contract.

C. Organizational set-up

Although setting up a viable cooperative was one of the objectives of the OIP, this was not achieved. The cooperative was registered, but as an interface it was weak – it had none of the attributes needed to function. It had no tasks to perform, no assets and no money. It only organized meetings and passed money from the firm to farmers and vice versa.

The cooperative members also remained undecided about the merits of growing passion fruit. The leadership changed several times. In some cases, the firm interfered and asked local officials to ensure that new leaders were chosen. The fact that the supporters of the farmers (the NGO and the consultants) no longer participated in the efforts had a negative impact as well. In the end, some of the most critical farmers left the cooperative, while 10 of them continued in 2015 for a second round of passion fruit (on 6.7 ha out of the 9.5 ha) in order to get at least something from their land.

D. Financial sustainability

The ICCO contribution into a revolving fund of the cooperative failed. A similar problem arose with the second element in the OIP that was meant to generate income for the cooperative: ownership of an irrigation scheme. This did not materialize. Using its status as foreign investor, AfricaJUICE could build the scheme without paying any taxes. While this made the scheme cheaper, it is on the firm's balance sheet. To transfer this asset to the cooperative would require the latter to still pay the taxes due. As the cooperative has no money, this is not feasible.

Without assets or capital, OIP's third objective, getting access to (investment) loans, remains out of reach. Consequently, the aim of expanding the scheme to 1,000 ha could no longer be pursued, as the expansion was to be financed by loans.



4.7.4 Enforcement

A. Type of contract

AfricaJUICE signed a contract with the Kilo Kersa Cooperative. The woreda Cooperative Office helped draft the contract and facilitate the tough negotiations over price. The contract was prepared in English and translated into Afaan Oromo, the local language. It is written in plain language and is well understood by both parties. The district administration, District Office of Agriculture and the Cooperative Office signed as witnesses. The woreda administration, which was pleased with the contract, provided the cooperative with a plot of land for the construction of an office and store.

B. Liability

The firm signed a contract with the Kilo Kersa Cooperative and expected the cooperative to enforce the contract. The cooperative, however, has no means to enforce anything. For example, it has no staff, it cannot control the irrigation water, and it has no influence on marketing. So when the farmers breached the contract in 2012 by uprooting their crop, there was nothing the cooperative could do.

There were numerous breaches by the firm as well. The most serious issues were that they did not provide the necessary poles or the promised irrigation water. Most of these issues were settled amicably by the firm promising to do its utmost to improve its performance.

C. Comprehensiveness

Due to relatively intense negotiations, the contract was rather comprehensive. However, this did not lead to much respect for its content by either party.

D. Built-in enforcement systems

As this was a new scheme to all parties, it proved difficult to build in any enforcement systems.



4.7.5 Impact

A. Farmers

So far, the impact of the contract farming scheme has been very limited. The first group of farmers, who had planted passion fruit in 2010, uprooted their crop at the end of 2012. They had produced 250 tons of passion fruit in 2.5 years, which was much less than anticipated. Also, the fact that the price had remained at the minimum level and that the yield in 2012 was below that of 2011 discouraged them.

The total gross income of the first batch was around 40,000 USD. With 1,000 USD/ha invested in poles, the gross return to labour and land was 3,000 USD/ha, or 1,200 USD/ha/year. With high (but poorly recorded) labour costs, the farmers felt that their net income was less than it would have been with other crops. Indeed, the average gross income per season for onions is around 2,500 USD/ha and the crop has two seasons per year, giving a much higher annual income than passion fruit.

The second group of farmers, who planted passion fruit in June 2012 under drip irrigation, never got to production stage as the firm was unable to deliver the poles. Despite numerous serious efforts, poles to set up a proper trellis system proved very hard to procure in Ethiopia. This led to problems with the smallholders as well as on the firm's plantation.

The third group of farmers did not even manage to do the planting, as the firm did not get the irrigation system working. Farmers demanded compensation for the fact that they had foregone their normal harvest of dryland crops. It took the firm a lot of time – in the middle of rising social tension – and close involvement of woreda officials to finally settle the compensation in the first half of 2013.

Outside the cooperative, there have been three model farmers who fared better, and recently (in 2016) a commercial farmer has entered into a contract to grow passion fruit on 10 ha. This contributes to a more positive image of passion fruit among farmers.

Despite the difficult start, farmers did keep a keen eye on the potential of passion fruit, and the firm suggested a number of ideas to make the contract more attractive. In 2015, 10 members of the Kilo Kersa Cooperative planted a new crop of passion fruit on 6.7 ha. This time they were allowed to grow passion fruit and vegetables separately (rather than between the rows of passion fruit). Also, the production technology is continuously improving.

In 2015, a new contract was signed with farmers from Ifa Bekumsa to develop a 25 ha plot. The firm invests in the irrigation, and farmers are allowed to use half of the area for short-cycle crops. The fact that the firm invested in the irrigation changed the farmers' mindsets, making them (even) more aware that passion fruit is a suitable (and, for many, the only) way to get access to irrigation. Unfortunately, technical problems with the irrigation layout and very low rainfall in 2015 prevented this scheme from getting started.

B. The firm

Although progress has not been easy, the firm keeps trying to innovate. In 2016 a new plan was developed to work with "in-growers". The principles are:

- Farmers offer their land to the firm.
- The firm invests in irrigation and remains owner of the system.
- Farmers get water for free for 50% of the land where they can grow onions (or any other vegetable).
- The firm gets 50% of the land for passion fruit.
- Farmers work in the passion fruit being paid a salary for their labour.
- After one cycle (of four years) the land is swapped: passion fruit on the area where vegetables are grown and vice versa.
- In the second cycle, the farmers are responsible for the whole area (including the irrigation costs), and they sell the passion fruit to the firm for an agreed price.

This is a new concept in Ethiopia, and it will be interesting to see how it works out. In economic terms it seems attractive for farmers. With the planned yields, the gross income per year is 5,000 USD/ha for both passion fruit and the short-cycle crops. Even with the substantially higher labour costs, this will lead to net incomes that could be triple the net income from dryland farming.

The key question remains: How can the contract be enforced? Some farmers might plant passion fruit but not maintain it adequately, focusing instead on short-cycle crops. What will happen when there is a water shortage, and farmers prefer to use the limited water on the quick yielding onions? Will the cooperative be able to discipline its members?

Despite the problems, farmers are still interested in working with AfricaJUICE.

C. The value chain

The poor functioning of the cooperative led to social tensions in Kilo Kersa, as farmers could not agree on the best way forward. Some wanted to stop the cooperative out of frustration over the low income and the lack of transparency in how donor funds were being used. Others were pragmatic and tried to ensure that they got access to irrigation water (as the income from passion fruit and vegetables is at least better than that of dryland farming). New leaders had to be chosen several times, and in the end a few members left the cooperative.

The passion fruit case has been extensively studied and commented on in very positive terms. Most stories, however, overlook the complex social issues as described in this case. For example, Sopov (2014) presents an excellent analysis of the technical and economic issues, correctly identifies a number of constraints and suggests some interesting improvements. However, the conflicts and the breach of contract go unmentioned. The article also overlooks the problems associated with the fact that the company controlled the donor budget and (consequently) the irrigation system. For farmers, the contract farming scheme was their only chance of getting irrigation water and produce vegetables.

It is also difficult in other cases to learn the practical details of the contract farming arrangement. Access to information is subject to business discretion and the interests of parties involved. At the same time, more transparency is required in order to learn from each other and improve aid effectiveness.

4.7.6 Conclusions

Social issues have proven to be a major factor in the lack of success of this contract farming scheme. Involving a committee embedded in the local administration can help to smooth the communication and relationships with farmers' groups. One of the main constraints (or challenges) in this scheme was the introduction of a new crop and cultivation techniques. A major source of conflict was the divergent intentions of the firm and the farmers: the former was focused only on passion fruit, but farmers mostly saw the access to irrigation as their goal, with passion fruit being a secondary concern. A lack of transparency by the firm exacerbated this.

In terms of the execution of the OIP, it is clear that donor budgets should be transparent to all actors, including farmers. In the same way, ownership of assets purchased with donor support should be agreed upon beforehand in a transparent way. This points to the fact that donor budgets are better channelled through independent actors, rather than through the firm.

Furthermore, donor support should be designed so that a one-off subsidy becomes a sustainable (revolving) system that also benefits future generations, not only the first generation of farmers.

Another set of conclusions can be made on the interface. For any interface to be effective, it needs to have a multi-annual business plan showing how it can become an independent actor in the chain, fulfil its value chain function, enter into contracts on behalf of its members and ensure that the contract is respected. This means that the cooperative needs to have:

1. Clear tasks and responsibilities: In this case, the cooperative is only a means of organizing meetings; the members still have a one-to-one relationship with the firm, which administers at individual level what each farmer gets (inputs) and what each farmer delivers. This should be a task of the cooperative.
2. Control over assets and inputs to discipline its members: In this case, the firm owns the irrigation system. It is unfair of them to use this as a means of disciplining farmers. Instead, if the cooperative owns the irrigation scheme, it could democratically decide not to provide water to farmers who do not comply with the contract. Such a decision, taken by farmers, has a much bigger chance of being enforced.
3. Ownership of the produce at a certain stage: Normally a cooperative would consolidate the production in a store and grade it before delivering it to the firm. In this way, it offers better (exclusive) services to its members and becomes a more attractive partner for the firm.
4. Staff to deliver tangible services to its members: These services include input supply, water distribution, storing, grading and marketing, and they need to be paid for. By building in a profit margin on these services, the cooperative can grow in terms of assets and capacities. This way it can ensure a role for itself (and thus for the farmers) in the chain.

Sources

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4.8 Case 8: Sugarcane

Getachew Mekonnin and Gerrit Holtland

Number of farmers: 1,516 (1975), 1,172 (2008), 1,034 (2011) ; Total: 3,722	Drivers of the firm: access to secure supply of high quality produce	Summary
Type of crop: high value horticulture crop	Impact on farmers: low	
Drivers of the farmers: access to irrigation	Impact on the firm: moderate	

The Growth and Transformation Plan of the Government of Ethiopia aimed to make the country self-sufficient in sugar and to increase production to 2.3 million tons in 2015. This was not achieved, however; GAIN (2015) estimated the production in 2015/16 at 400,000 tons. The Ethiopian Sugar Corporation (ESC) is entrusted with continuing to work towards this ambitious plan. Thus, there is a need to increase production and productivity of sugarcane to secure a reliable supply of sugar in the country. To do this, the ESC aims to develop more land for sugar plantations and for small-scale sugarcane outgrower schemes.

The currently operating factories at Wonji Shoa, Metehara and Fincha produced 81,000, 116,000 and 129,000 tons of sugar respectively in 2013/14. This gives a total production of 326,000 tons, produced on 37,000 ha. This production cannot meet the growing demand for sugar and forces the government to import 200,000 tons per year. This import exists parallel to an export of 20,000 tons to the EU.

This case study focuses on the Wonji Shoa Sugar Factory, which has a formal contract with the Wonji Area Sugarcane Growers Cooperative Union, renegotiated every three years. Wonji is a drought-prone area. It receives an average of over 800 mm of rain annually, but the rainfall pattern is erratic. Some districts, such as Dodota, were registered as food-insecure and have been previously supported with food security projects. Traditionally, smallholders produce dryland crops such as teff, maize, wheat and haricot bean. The outgrower scheme is an opportunity for them to reduce their dependency on rain-fed agriculture, as the factory pays for the development of the irrigation scheme that enables them to grow sugarcane.



4.8.1 The partnership

The Wonji Shoa Sugar Factory is located in Oromia Region near Adama town, 108 km from Addis Ababa. The factory is a recent construction (2013) designed to replace Wonji Factory and Shoa Factory which were the oldest sugar factories in Ethiopia and pioneers in the country's sugar industry.

In 1975, the Wonji Factory started the first outgrower scheme; new rounds of expansion followed in 2008, 2011 and 2013. The last one is still operating under the new Wonji Shoa Sugar Factory. Table 10 gives some basic data on the expansion timeline.

Table 10: Basic data about outgrowers from Wonji Shoa Sugar Factory

Year	Distance	Cooperatives	Area (ha)	Farmers	Ha/cooperative	Ha/farm
1975	<10 km	7	1,124	1,516	161	0.74
2008	<10 km	5	1,690	1,172	338	1.44
2011	<25 km	4	1,726	1,034	432	1.67
Total		16	4,540	3,722	284 (average)	1.22 (average)

Wonji Shoa Sugar Factory organizes farmers in formal groups of sugarcane growers' cooperatives. Currently, there are 27 sugarcane cooperatives, and 19 of them form a union called Wonji Area Sugarcane Growers Cooperative Union. It was established in 2004 for the purpose of cultivating and selling members' sugarcane to the factory.

B. Size and scope

In 1975, the land that the farmers contributed was all irrigated. In the later outgrower schemes the farmers contributed more land, but it was rain-fed land and the firm had to invest in the necessary irrigation systems. In 2015, the total area reached some 12,000 ha of which 6,000 ha is outgrower land. An expansion with another 3,000 ha from outgrowers is planned.

For decades the state-owned firm had worked with the two factories, which jointly could crush 3,000 tons of cane per day. The cane was produced on 5,930 ha of the factory's own plantation and 1,124 ha of outgrowers' land. The new factory has a capacity of 6,250 tons of cane per day. It will also be able to generate a substantial amount of electricity, part of which will be fed into the national grid.

The outgrower schemes of 2008 and later were initiated in 2004 as part of the expansion plan of the factory. An extensive feasibility study was done which recommended starting an outgrowers scheme as a win-win solution for both the factory and smallholders.

C. Drivers

The firm wants to satisfy as much of the national demand for sugar as possible and is aiming to achieve this by expanding the amount of outgrowers' land under sugarcane. The farmers are interested in the irrigated land, which will reduce their dependence on rain-fed agriculture.

D. Support and sustainability

The contract farming scheme is sustainable without any external support; there is no donor and no facilitating NGO.



4.8.2 The contract

A. Quality inputs

The factory provides high quality cane seed for multiplication by the Wonji Area Sugarcane Growers Cooperative Union. The union also supplies fertilizer and chemicals to the cooperatives on credit, which will be deducted from the cooperatives' cane sales revenue.

B. Technical assistance

The factory assigns supervisors to each cooperative (16 in total) to manage the production process. They support the union and cooperatives in operating and maintaining the irrigation infrastructure, cane planting, irrigation and harvesting. They also train farmers.

In addition, the union's agronomic experts supervise and coordinate all activities of the individual farmers, such as planting, weeding, watering, fertilizing, burning and cutting, loading and transporting cane to the factory. The costs of the supervisors will be accounted for in the final cost of production.

C. Access to finance

The firm supplies all inputs. However, no loans for labour or other costs are provided for in the scheme.

D. Access to market

The company is the only market. The contract with the union – and thus with the cooperatives and their members – is renegotiated every three years.

E. Risk management

The main risk is the production risk. Lower yields due to crop disorders or a lack of irrigation water will directly lead to lower income; the price mechanism whereby low yields are compensated for by higher prices does not work in this case, with a monopolist buyer. The factory does, however, offer comprehensive support to optimize yields.

The fixed price does reduce market risks, but represents a risk as well. As the price is fixed for three years, any inflation eats into the purchasing power of the farmers. On the other hand, the prices of inputs are also fixed in the contract.

F. Quality control

The supervisors employed by the firm check the quality of the cane at production and post-harvest handling stages.

G. Logistics arrangements

The firm agrees to prepare land for sugarcane cultivation, including installing irrigation infrastructure. In addition, it rents machinery and equipment to the union. It transports sugarcane from the farm to the factory weighing room. The union is responsible for conducting all the maintenance and operation of irrigation infrastructure.

H. Price system

In the first stage of the contract (first 18 months of a production cycle), the factory pays 1,250 ETB/month/ha to the farmer. In addition, it pays farmers every two weeks for their labour on the farm.

I. Payment system

The factory buys the cane at a fixed price of 50 ETB/qt. From this gross payment, all production costs advanced by the factory are subtracted. The final amount is transferred to the union within one month of delivery. The union distributes the money to the cooperatives after deducting a 10% commission.



4.8.3 The interface

A. Characteristics

This interface is a classic union-cooperative interface, which is not surprising, given the large role of the Government of Ethiopia in setting up the contract farming scheme and its insistence on this way of organizing farmers and agricultural activities.

B. Communication

The Wonji Shoa Sugar Factory has a department for community mobilization. The union and its cooperatives provide the communication link between the factory and the farmers.

C. Organizational set-up

Although the role of the firm is very comprehensive, the union and the cooperatives also play an important role; given the large number of farmers, they cannot be omitted from the scheme. The set-up is very top down, with the farmers and primary cooperatives being able to exert little influence.

D. Financial sustainability

A commission of 10% of the sugarcane sales covers the running costs of the union. As mentioned above, union staff supervise all the farmers' activities. The union can hire additional workers if cooperative members cannot discharge their responsibilities. If the union is unable to perform some of its roles due to issues such as shortage of capital, labour or technical know-how, it must inform the firm in time for the factory to take responsibility for the activity. The firm will then charge the union the costs incurred.



4.8.4 Enforcement

A. Type of contract

The firm is responsible for preparing the land, installing irrigation infrastructure and providing machinery, seed cane and transportation of cane from the farm to the factory. Farmers are responsible for operating and maintaining the infrastructure, planting, weeding, watering, burning and cutting. What is special in this arrangement is that the contract is not covering individual farmers managing their own sugar plantation on their own land. Instead, farmers hand over their land to the common plot and common plantation, which is managed by the cooperative. In the first 18 months, the factory pays farmers 1,250 ETB/month/ha until the first harvest. The cooperative organizes production, for which it can hire the farmers. However, most of the work is done by hired (daily) labourers, while many farmers use their monthly payment to start a small business.

The contractual agreement has two phases. Farmers firstly have to form a cooperative and offer their plots for sugarcane cultivation. Officials from agriculture, environment and land offices are involved in the negotiations, and it is very difficult for individual farmers to opt out. Those who happen to live on the land destined for cultivation are offered new houses elsewhere. Then an agreement is signed between each cooperative and the factory.

In the second stage, the factory signs a contract agreement with the union (representing the cooperatives), where the union agrees to cultivate and sell sugarcane to the factory. The contract is a long document with detailed terms and conditions: 32 pages and many more as attachments. All production costs are estimated per hectare and details are attached to the contract agreement.

The factory buys the cane supplied by the union for a fixed price of 50 ETB/qt. At the time of delivery, the factory deducts all production costs such as inputs, labour, machinery rent, cost of fixed assets and other direct and indirect costs.

B. Liability

The firm takes full responsibility for the production process. It offers technical advice and the cost items for each activity. The long-term aim is a commercial outgrower scheme, where farmers grow sugarcane for the factory, with limited involvement of the firm.

C. Comprehensiveness

The contract is extremely comprehensive: the factory provides the farmers with all inputs and machinery and specifies standard input quantities per hectare that farmers have to use. The contract also fixes the prices of inputs, the work to be done, the sugarcane itself and the advances for outgrowers. All input costs (including the advances for work of farmers) are initially disbursed by the factory. At harvest, the factory calculates the value of the sugarcane, deducts all costs and advances, and transfers the remainder to the union, which then pays the farmers.

D. Built-in enforcement systems

The enforcement systems are present at multiple levels. Cooperative and union members have no other way to get access to irrigation than through the contract farming system. Last but not least, as industrial processing is needed, the company is their sole market outlet.

The contract defines various conflict resolution mechanisms. First, both parties take time to discuss the matter thoroughly and try to solve it. If the issue is not resolved, the district, zonal and Oromia Region Cooperative Agency get involved (the level depends on the seriousness of the matter). Unresolved conflicts go through an arbitrator assigned by the ESC and Oromia Regional Government. Finally, both parties have the right to go to court as a last resort.



4.8.5 Impact

A. Farmers

The impact for the outgrowers of the 1975 scheme has been very negative. These farmers handed their irrigated land over to the factory, and Wendimu et al. (2015a) showed that nearly 40 years later, these farmers had earned only 49% of what their peers earned who did not participate in the scheme. The cumulative impact over the years is caused by the differences in asset ownership: the value of the assets owned by non-outgrowers was nearly 10 times higher than that of the outgrowers.

The irony is that Wendimu et al. (2015b) found that outgrowers achieve higher yields than the sugar factory: 1,451 versus 1,078 qt/ha. Part of this difference can be explained by the better soils of the farmers' plots, but when this is accounted for, farmers still perform 13% better than the factory staff. Econometric modelling also shows that farmers get an 8% better gross margin than the factory.

Farmers of the 2008 cohort who gave rain-fed land to the scheme produced on average 1,510 qt/ha. With a price of 50 ETB/qt, this leads to a gross income of 75,500 ETB. As the costs are 53,000 on average, the net income is 22,500 ETB/ha, or 1,046 USD/ha. This is for one and a half years. As well as that, farmers can earn extra money by working as labour on their own farm; however, in practice much of the fieldwork in the cooperatives is not done by the farmers, but by daily labourers coming from other areas (most come from the Southern Nations, Nationalities, and Peoples Region).

On an annual basis, this income is similar to the one reported by Wendimu et al. (2015a): 11,100 ETB/ha, which was 629 USD/ha in 2011/12.

Is this better than growing rain-fed crops? Wendimu et al. (2015a) report a net income for teff in 2011/12 of 11,200 ETB. This seems a rather high estimate. Sorghum or maize generate lower incomes. Still, the difference between sugarcane and these annual rain-fed crops is limited. This is in line with the conclusion of Wendimu et al. (2015b) that when outgrowers use rain-fed land for sugarcane production, their income is not changed in the short term; in the long term, their income might be affected negatively. The latter

fear is coming from their finding that in 2013 the value of the assets of farmers who handed over rain-fed land in 2008 was only half of that of their peers who did not hand over the land.

It is also interesting to ask what farmers would earn if they were allowed to use the irrigation system to produce vegetables. As there are two vegetable cropping seasons per year, farmers' annual income would be six to ten times higher. Wendimu et al. (2015a) found a net income of 33,000–69,000 ETB per growing season (4–5 months). De Putter et al. (2012) reported even higher horticultural incomes in the Central Rift Valley.

In summary, the financial impact for farmers has been negative for those with irrigated land and minimal (with a long-term downward risk) for those with rain-fed land. Another issue is that farmers are increasingly insecure about their land title; some fear that their children's land rights might be affected when they inherit, as it will be difficult to prove which part of the (consolidated) land belongs to them.

However, there are some benefits to mention. Firstly, farmers are less dependent on rainfall and less vulnerable to drought. Secondly, their steadier income has allowed several of them to start small businesses (petty trade) in towns such as Adama.

B. The firm

There are no data available on the profitability of the firm. With half of the sugarcane coming from outgrowers, it is clear that the firm benefits from the scheme through a much more efficient use of its factories.

C. The value chain

The value chain is expanding, as the firm expands. However, benefits to actors other than the farmers and the firms are limited; the unions and cooperatives work in a tightly controlled environment. Replication of the scheme is also virtually impossible due to the high capital investments required.

4.8.6 Conclusions

This is the longest running contract farming scheme in the eight cases studies considered here, and it holds a number of interesting conclusions. First of all, and rather surprisingly, smallholders are more efficient producers than the factory. In terms of impact, the picture is mixed: farmers who had their own irrigated land before they became outgrowers (mostly in 1975) lost hugely; those who contributed rain-fed land hardly benefited. The monopoly of the firm enables it to "negotiate" a price for sugarcane that is hardly better for farmers than the price of staple crops; however, if the irrigated land were used for vegetable production, it could yield much more.

This being said, although farmers' income is relatively low, it is more secure than with rain-fed crops. Farmers seem to use the more stable income to invest in petty trade and other small businesses (e.g. in the nearby town of Adama).

What is striking as well is that farmers are hesitant to work in sugarcane on their own land. The firm has to hire daily labourers from other regions for this, who now have access to a source of income.

Sources

Fair & Sustainable Ethiopia contributed this case.

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5. Conclusions

This chapter presents the conclusions. The five dimensions of the analytical framework will be addressed: the partnership, the contract, the interface, contract enforcement and impact. A number of overviews are presented for easy comparison of the cases.

5.1 The partnership

A. The farmers

The focus here is on the individual farmers participating in the contract farming schemes. Farmers' organizations are addressed in section 5.3 on the interface.

Much information is available about the (financial) impact on the farmers who participate in the contract farming schemes. Yet there is very limited data on the profile of participating farmers. It can be assumed that generally they are better-off farmers, open for new ideas. This is mostly the case in the seed potatoes, green beans and passion fruit cases, as these crops are relatively new and require more knowledge and skills than producing malt barley, sesame and chickpea. The contract farming theory suggests that margins would be better for knowledge-intensive products. However, this was not true for these cases.

Unfortunately, we have no data about gender; in some cases, the number of female members of a cooperative is known, but no data was found on how many women participate in the schemes. Further research could therefore assess whether women benefit proportionally from these schemes.

B. The firms

Table 11 below presents a classification of the firms involved in the contract farming schemes.

Table 11: Classification of the firms

Case	Company name	Foreign-owned	Social objectives	Rural or urban	Type of contract
Malt barley	Heineken	Yes	Yes (local sourcing)	Urban-based processor	Contract farming
Chickpea	ACOS	Yes	n/a	Urban-based processor	Contract farming
Seed potatoes	Solagrow	Yes	Yes	Rural-based commercial farm	Outgrowers
Sesame	Selet Hulling	Joint venture	Yes	Urban-based processor	Contract farming
Bamboo	African Bamboo	No	n/a	Urban-based processor	Contract farming
Green beans	Ethio Flora	No	n/a	Rural-based commercial farm	Outgrowers
Passion fruit	AfricaJUICE	Joint venture	Yes	Rural-based commercial farm	Outgrowers
Sugarcane	Wonji Shoa Sugar Factory	No	n/a	Rural-based processor	Outgrowers

Five of the eight companies are fully or partially foreign-owned and connect farmers to international markets and technologies: Heineken, ACOS, Solagrow, Selet Hulling and AfricaJUICE. Two Ethiopian companies work on the basis of export contracts: Ethio Flora and African Bamboo. Wonji Shoa Sugar Factory is a state-owned firm working on import substitution.

Two companies have very explicit social objectives: Solagrow and AfricaJUICE. The first is fully oriented to supporting the livelihoods of Ethiopian farmers; the second sees itself as an example of a socially responsible business. Their impact is limited, as can be seen in sections 4.3.5 and 4.7.5 respectively. Despite the challenges they have faced for many years, they are both still eager to have a social impact. Both companies are owned by foreigners with a strong vision for the role of private investors in agricultural development. They are independent companies, while the other foreign-owned companies are linked to a multinational corporation. This makes them more vulnerable. Also, their schemes depend on donor funding.

Another distinction is between rural-based commercial farms (passion fruit, seed potatoes, green beans, sugarcane) and urban-based processors (malt barley, chickpea, sesame, bamboo). AfricaJUICE and Wonji Shoa Sugar Factory are rural-based processors. The rural-based commercial farms work with farmers surrounding their own land and focus on perishable products. They tend to have more intensive contacts with the farmers and offer them more comprehensive support. The number of farmers involved is generally lower and the relationship is sometimes troubled due to the many complex issues involved. The potential impact of the rural-based farms is similar to urban-based processors (or even higher), yet they tend to lack the (financial) means to realize the full potential of their cooperation with smallholders.

This classification coincides with the difference between contract farming and outgrowers' schemes. The outgrowers are situated around the nucleus farm, the contracts are more comprehensive and the support offered is more intensive. In all four cases the product is perishable (seed potato less so than the others); three cases involve irrigation. In the passion fruit and sugarcane cases, farmers have no alternative market outlet. The number of farmers involved is much lower (Table 1, introduction) and the relationship involves more complex issues.

C. The donors

Table 12 below presents details on the donors involved in the contract farming schemes of the case studies.

Table 12: Donor involvement in the contract farming schemes

Case	Donor	Facilitator / NGO	Donor support handled by	Conflict over assets
Malt barley	DGIS/ICCO	EUCORD, HUNDEE	EUCORD, HUNDEE	No
Chickpea	FSRE, C4C	FC, C4C	C4C	No
Seed potatoes	PSI/ FDOV	SNV	Solagrow	No
Sesame	PSI	Cordaid	Cordaid	No
Bamboo	PSI, GIZ	F&S Eth.	African Bamboo	No
Green beans	CFC	None	Ethio Flora	Yes
Passion fruit	GIZ/ICCO	FC, FFARM	AfricaJUICE	Yes
Sugarcane	-	-	-	-

In all cases except for the sugarcane case (which is supported by the Government of Ethiopia), donors are involved; in five cases, two donors are involved.

In the malt barley case, donor support comes from NGOs: a local NGO (HUNDEE) supports the cooperatives, and an international organization (EUCORD) provides technical support. The coordination and cooperation between them allows for a relatively successful scheme and one in which a steep learning has been possible, as can be seen in the two seasons under scrutiny.

In the chickpea case, donor support is handled by NGOs. The C4C programme of SNV and Agriterria facilitated the deal, provided training and paid the insurance. The aim of the support is clear and, despite the challenges, a level of trust developed in the chain. Although the union did not sell the chickpea back to the firm, the firm continued to engage with them.

In four cases, the firm handled (part of) the donor funds: seed potatoes, green beans, bamboo and passion fruit. This reflects a conviction among donors in these cases that firms are the engine for innovation and growth in rural development efforts. Donors support the firms with the purchase of critical assets, on the condition that they will share the benefits with smallholders through contract farming, in many cases outgrowers schemes. The cases show that this is not as easy as it sounds.

In two cases, green beans and passion fruit, donor funds led to conflicts over assets financed by the project. In both cases the funds were channelled through the firm.

The GIZ support to the bamboo case is interesting. The support is structured as a public-private partnership that works with all actors in the bamboo chain. Fair & Sustainable Ethiopia was hired to investigate what would be a fair price for bamboo from smallholders. When the price needed to be nearly 50% above that originally planned, the firm accepted this outcome. This created a high level of trust from the farmers (although that trust evaporated when the firm did not actually purchase any bamboo due to a delay in establishing the factory).

The 2010 evaluation of the Dutch private sector investment programme (Triodos Facet 2010) found that four floriculture projects in East Africa proposed the development of an outgrowers scheme. In all cases, the results in developing outgrowers were negligible. Two main reasons were mentioned: 1. High-tech floriculture is unsuitable for outgrowers, and 2. Developing outgrowers schemes requires a great deal of time and money, which was not anticipated in the budgets. Interestingly, the publication also mentions (p. 32) that: "Some interviewees stated that they included the outgrowers scheme in order to make their application more attractive, knowing that such schemes would not be feasible, given their high-tech production methods". Companies that failed to invest in outgrowers schemes, despite promising to do so, were not forced to return any funds to the donors.

Donors have to be careful in channelling funds that are supposed to improve the life of farmers through firms. There may be conflicting interests at some stages of the contract farming scheme.

D. External facilitators

As external facilitators, NGOs and consultants (external experts) can play a large role in contract farming schemes. This seems to be particularly relevant in the design and training stages. As can be seen in the cases, farmers do not hire NGOs or experts. Only one firm paid part of the costs of an external expert: Heineken. Thus, in most cases NGOs and consultants are involved through the donors, who pay for their contribution.

In five cases, the role of external supporters is limited to process facilitation, group formation processes and training of farmers: malt barley, chickpea, seed potatoes, sesame and green beans. It is hard to determine the impact of this work. In most schemes the support focused on capacity-building of the cooperatives. In several cases the external experts struggled to convince the stakeholders to invest in a solid interface (the cooperative). In some cases, the donors do not appear to appreciate the importance of this aspect.

In the three remaining cases, bamboo, sugarcane and passion fruit, external experts played a role in designing the agreement (with an emphasis on the price system). In the passion fruit case, they were ousted from the project, as they could not agree with the firm on what constitutes a fair deal.

In the sugarcane case, external experts did a feasibility study that generated detailed advice on how to set up the scheme's expansion in 2008. The outcome proved to be less attractive for farmers, yet the scheme is considered a success from the point of view of the investor (the state, through the sugar factory). In the bamboo case, the external expert positively influenced the trust level between the partners, as well as the price that farmers received.

If anything can be considered as the key to the success of a contract farming scheme, it is this: independent experts need to investigate and clarify to all parties involved what work has to be done to connect the farmers to the firm. Much of this work has to be done in rural communities, and all of it comes at a cost. Only when all tasks and responsibilities are clear and agreed upon, can the related costs be inventoried and an appropriate remuneration and incentive system developed. The crucial question then becomes: who will pay all the costs? With all data collected and analysed in a transparent and participatory way, in some cases based on a simulation model, who has to pay for what becomes clear as well. The next question is whether this is indeed feasible given the (financial) capacity of the parties to the contract farming scheme.

5.2 The contract

In practice, the focus of all contracts is on four main elements: inputs, finance, quality and price. Table 13 provides an overview of these elements for each case.

Table 13: Contract elements in the case studies

Case	Inputs		Finance		Quality	Price
	Quality seed	MFI loans	Advance for interface	Quality standards	Price type	
Malt barley	Yes	Yes	Yes	Yes	Market rate	
Chickpea	Yes	No	No	Yes	Market rate	
Seed potatoes	Yes	Yes	No	Yes	Market rate	
Sesame	No	No	Yes	Yes	Market rate	
Bamboo	No	No	No	Yes	n/a	
Green beans	No	No	No	Yes	Fixed	
Passion fruit	Yes	No	No	Yes	Fixed	
Sugarcane	Yes	No	No	Yes	Fixed	

Inputs play a crucial role. In three cases, malt barley, chickpea and seed potatoes, the seed provided by the scheme is a determining factor. This seed gave substantially higher yield and incomes. The seed factor explains why the barley and chickpea cases are

relatively successful, despite their low suitability for contract farming. In two other cases, sugarcane and passion fruit, quality seed was provided as well, yet its impact is limited because in these schemes the competition is not with other seed of the same crop but rather with other crops (irrigated vegetables). In three cases, seed is not important: sesame, green beans and bamboo.

Access to finance for inputs is part of the contract in all cases where seed is provided. In three cases, chickpea, green beans and passion fruit, the firm advanced the seed for free; in two cases, MFIs offered farmers an input loan (malt barley, seed potatoes). In the malt barley case the role of MFIs was reduced substantially over time. The informal groups of the MFIs could not compete with the cooperatives set up by HUNDEE in terms of quality and quantity. Their repayment rate of 93% was not very good. And the cooperatives had cheaper sources of funding for their output financing (Heineken itself or the Cooperative Bank of Oromia). In the seed potatoes case, the experience was mixed: in one area (Bekoji), very few farmers took a loan; in the other area (Wenchi), many did. Repayment rates were good.

Only in two cases, malt barley and sesame, did the firm advance money to the interface to collect the produce. For the latter, this seems to be a key success factor. Trust and mature business relations play important roles here. In the relatively young malt barley case, the advance made has been less effective. Considerable amounts were advanced; in the first year(s), this translates into a considerable risk for the firm. Repayment rates were reasonable.

Quality standards are included in all contracts. In some cases, green beans, sugar cane and passion fruit, quality can be easily checked and farmers get paid accordingly. In the malt barley case, much energy was invested to check the quality. But standards differed between companies, and the option for farmers to sell on the spot market made enforcing quality standards difficult. There is no relevant data about this aspect of the chickpea and sesame cases.

The last standard element of the contract is the price. In three cases, green beans, sugarcane and passion fruit, the price is fixed. For the green beans this worked for many seasons, yet in 2015 it did not. In the sugarcane case, farmers are not happy with the price being fixed for three years. In passion fruit, a flexible price was initially agreed, based on the world market price. Yet, as the world market price remained low, it appeared to farmers that the price offered was minimal. In the second round, an increased fixed price was agreed.

In the four other cases, the price depended on the going market rate. In two cases – malt barley and chickpea – this led to friction. The farmers benefited in these cases, as the companies could not prevent them from selling on the open market. In seed potatoes, Solagrow promised to pay the market price plus 100 ETB/qt; however, the firm was unable to purchase any seed potatoes in the 2014/15 season. In the sesame case, the contract uses the ECX price as a benchmark; this makes the selling process much easier.

5.3 The interface

In any contract farming scheme, cooperatives, informal groups and/or lead farmers have to mediate between the many farmers that are involved and the firm. The performance of this interface is the most important variable for the success of the scheme. When an interface performs well, contracts are respected and transaction costs are low. We will first assess the performance of the interface and its financial sustainability. Then we explore how the role and performance of the interface can be understood in the wider context of agricultural development in Ethiopia. Finally, we ask: How can an effective, efficient and sustainable interface be designed?

Performance of the interface

A cooperative can only be an effective interface when it is a responsible player in the chain. It should have the capacity to deal on an equal footing with, and be independent from, the firm, and it should have leverage over its members.

The role of the interface in most of the case studies was limited to communication and passing on of seed and produce. Cooperatives that only have communication and coordination roles do not have the social and economic leverage to discipline their members. Cooperatives that have more responsible tasks and are more visible can motivate their members to do what has been agreed upon collectively. And they can do this better than companies.

Meki Batu Union forced its members to deliver the contracted beans, as it considered this to be in the long-term strategic interest of the collective. Similar pressure from companies easily leads to friction with and among farmers (as in the case of AfricaJUICE in the passion fruit case or the Wonji Shoa Sugar Factory in the sugarcane case).

In the malt barley and chickpea cases, the cooperatives do their work for the farmers (distributing seed), but they fail to perform the tasks that are critical to the firms (quality control and delivering the produce). In the malt barley case, the firm had to compensate for the poor performance of the cooperatives by hiring quality inspectors and setting up a payment system. The lead farmers in the malt barley case perform better than the cooperatives. It would be interesting to know more about these lead farmers. Are they farmers, traders or a combination thereof? What are their margins on inputs and/or outputs? Do they deliver other services (advice, advances, mechanization, credits)? In the case of seed potatoes, the (planned) interface combines informal groups and firm staff. No incentive is foreseen for the leaders of the informal group. It will be interesting to see how this works out.

How to create a financially sustainable interface

The interface needs incentives to perform. It may even be better to consider the interface (cooperative, lead farmer or informal group) as the third partner in the contract farming scheme, equal to the farmers and the firm. In most cases, the work of the cooperative or union is not paid, or the commission they charge does not cover the costs. Cost recovery for the interface is one of the main problems in contract farming; it can be easy to forget that a general phrase such as “distribute seed” implies:

- identify interested farmers and the amount of seed they want
- collect the farmer contribution for seed
- keep records and cash
- inform the contractor and supplier how much is needed
- receive, administer and store the seed
- distribute the seed
- ensure farmers sign the contract.

In the three schemes with a strong focus on the introduction of improved seed, malt barley, chickpea and seed potatoes, virtually all benefits ended up in the pocket of the farmers, while almost nothing was invested in a sustainable interface.

The malt barley and chickpea cases show that the commission of the cooperatives and unions is too small to sustain their business. In some cases, they find support from donors; however, this is not financially sustainable.

In the schemes with a large focus on marketing – green beans, sesame and bamboo – the firms and/or farmers invest a significant percentage of the value of the produce in the interface (in the development of the cooperative). In green beans, this is 12%, in bamboo

13% and in sesame 15%. Two of the three cases are mature schemes where, despite conflicts in earlier stages, trust has developed over time and transaction costs are minimized. In these cases, both farmers and the firm generally get what was contracted: farmers get loans, advice and a market; firms get the produce. These schemes deliver lower benefits to farmers than the seed-driven schemes; however, their interface (and therefore the scheme) seem more sustainable.

It could be argued that a 12–15% margin for the interface is a sign of high transaction costs. However, in these cases a considerable part of it is used for value-addition activities such as quality control, grading, bagging, packing, cooling and transporting. Moreover, transaction costs for the firm such as search costs, communication, negotiation and quality control are relatively limited, probably around 5%. In comparison, Heineken bears 10% transaction cost to get its malt barley. The reason may be that combining transaction tasks with value-addition tasks in one organization is more efficient.

Finally, there are the two irrigation-based schemes: passion fruit and sugarcane. In sugarcane, the interface is formal and supposedly strong: the Wonji Shoa Sugar Factory; yet it does not lead to a positive outcome for farmers. In the passion fruit case, the cooperative is very weak; it serves only as a communication channel and is more or less irrelevant for the actual work. It has no income, no paid staff and (therefore) no leverage over its members.

In summary, given their low levels of remuneration it seems that cooperatives and unions make insufficient use of the opportunities presented by the innovations introduced through the contract farming schemes. In most cases, the new seed given to farmers has a very high value as it embodies potential yield increases for a number of years. Unions and cooperatives should benefit from this, but they do not. Seed of malt barley, chickpea and potatoes is distributed to and collected from farmers without any margin or a margin that does not recover the costs. In the malt barley case, cooperatives use margins of 0–3% for inputs and 1–5% for output selling, but they should ask 8–10% and 5% respectively to sustain their services. In the case of malt barley and chickpea, farmers should repay their cooperative at a ratio of 1:1.5, which means that for every quintal of seed farmers receive, they repay one and a half quintal. In the case of seed potatoes, this could be very well be 1:2 for first-generation seed. This is still a very good deal for farmers, while giving the cooperative a chance to become a viable organization with an independent position in the chain.

The interface in agricultural development in Ethiopia

The lack of attention to the financial sustainability of the interface is structural in the cases. The attitude of all stakeholders in the contract farming schemes is to give any profit as quickly as possible to the farmers.

This is a wider problem in Ethiopia. A detailed IFPRI study on fertilizers (Rashid et al. 2013) found that unions and cooperatives make 1% loss on distributing fertilizers, while farmers get a 100% profit on using them. The implication is that farmers can still make a profit while paying a market price for fertilizer.

As cooperatives cannot earn from their input supply operations, the input supply system is a weak element in many Ethiopian agricultural value chains. Contract farming is partly a response to this weakness and, in the long run, also contributes to it. Firms that distribute high quality seeds to contract farmers deny agro-dealers a potential source of income.

While contract farming strengthens the value chain relations, it risks weakening the support system to smallholders. The Wonji Sugar Corporation has the means and position to permanently replace the support system with the outgrower scheme. Heineken has

the capacity to do this too, but may find it too expensive in the long run. In the sesame case, the firm seems to have reduced its role and focused on what really matters: pre-financing and certification. In all other cases, the firms are too small and their efforts insufficiently robust to permanently replace local service providers to smallholders.

Designing a sustainable interface: the way forward

As most contract farming schemes tends to bypass private service providers and promote cooperatives as an interface, it is crucial to understand the weaknesses of cooperatives and look for ways to improve them. It starts with understanding the tendency of farmers not to contribute sufficiently to their own organizations. One explanation for this in the Ethiopian context is the relative lack of experience with effective farmers' organizations. Another element seems to be a lack of trust in such organizations: both firms and farmers want to avoid the accumulation of resources in cooperatives and unions. This way of working might seem efficient as both farmers and firms get better margins in the short term, but a lack of strong, capable farmers' organizations actually constrains the development of a strong value chain; both firms and farmers will suffer from this in the long term. In the Ethiopian context, with its strong government focus on cooperatives and unions, this is especially relevant.

There is actually an economic disincentive for farmers to invest in their cooperatives: their return on investment in production is much higher than the returns the cooperative gets on input supply and output selling. While the financial incentive to invest in a cooperative is limited, the risks of investment are considerable: misappropriation by leaders and staff and interference by government are not uncommon. Audits are often late, as is the payment of any dividend; decision-making is inefficient; and the staff often lack the necessary knowledge and skills.

Consequently, the lack of investment in farmers' organizations can be explained by the fact that Ethiopian farmers lack the financial capacity and attitude to sustain cooperatives and unions. They lack the skills to manage larger business entities and need the cash too urgently in their farms and families. Under the current circumstances, with weak farmers' organizations being the rule rather than the exception, this is rational economic behaviour by farmers.

The case of cereals and pulses is particularly difficult for cooperatives, as profit margins are very small. Large volumes and very large working capital are needed to compete in these markets. Cooperatives also compete with local traders in this market. Instead of working with cooperatives, firms could use local traders to collect the produce they need: they have more efficient decision-making and greater operational efficiency.

In this context, it could be argued that it is better to promote private entrepreneurship in rural areas. Indeed, in two cases – malt barley and seed potatoes – firms designed alternative interfaces. In the former case, lead farmers proved to be more efficient. In the latter case, informal groups replaced the cooperatives; whether these can deliver or not is not yet clear.

A last element is that all actors systematically underestimate the costs of any interface. Transaction costs at village level are always much higher than anticipated. The bamboo case is a good illustration. Economic simulation models can be used more often to address this. They analyse all the costs at the farm/community level. Such models were run in the malt barley and bamboo cases, where they stimulated both farmers and firms to (re-) think the set-up. In practice, this means clear incentives for those working at community level (within or outside a cooperative). Note that transaction costs at the time of setting up a contract farming scheme are high and can be assumed to fall when the scheme becomes more mature.

5.4 Enforcement

Side selling by farmers is a key concern in any contract farming scheme. As the case studies show, there is also a risk that companies buy elsewhere or do not buy at all.

The cases of sugar cane and passion fruit both use the nucleus-estate model. Here, side selling is not much of a problem as farmers have no other place to sell their produce. In the case of passion fruit, however, there was a breach of contract when farmers uprooted the crop that was established with support of the firm.

In five of the six other schemes – where farmers could sell on the open market – problems occurred in the marketing side of the contract. In the chickpea case, the union returned only the amount of seed required by the contract and asked an unrealistically high price for the remaining produce. In the malt barley case, the cooperatives delivered only 60% of the agreed amount, and in the case of green beans farmers even deliberately damaged the beans so that they could sell them locally. In the seed potatoes case the firm was not able to purchase the produce it promised to buy. In the bamboo case there was not a marketing contract in place. There was only one contract farming scheme without any problem at the sales stage: sesame.

These findings suggest that side selling can be reduced over time as partners improve their functioning and build a long-term relationship. Both parties need time to understand each other's position and to appreciate what the other party can offer. They also need time to grow in the roles they are supposed to play in the design of the scheme. Finally, the full benefits of a contract farming scheme may take several years to materialize as collaboration between the parties deepens. Flexibility, especially in communication strategies and contracting practices, is key.

5.5 Impact

The farmers

The first level of impact that was assessed in the cases is the benefit for farmers; an essential indicator is the additional income they receive as a consequence of being involved in the contract farming scheme. In this regard, the cases can be divided into three groups:

- High-impact schemes: In three cases – malt barley, chickpea and seed potatoes – farmers gain substantially (> 100 USD per farmer)
- Moderate-impact schemes: In two cases – sesame and bamboo – the additional income is moderate (50–100 USD per farmer)
- Low-impact schemes: In these cases – green beans, passion fruit and sugarcane – the extra income is low, or even negative.

The schemes with substantial impact are all seed-driven schemes. The companies supply better seed that gives an additional yield of some 25% without much additional costs. In two cases – chickpea and seed potatoes – the contract is about producing seed. In these cases, an income multiplier effect is expected as the second-generation seed fetches a higher price as well.

Both of the moderate-impact cases are market-driven contracts. Both companies aim at exporting to premium or niche markets and pay substantial amounts to the interface: 12% for sesame and an agreement on 13% for the bamboo. This commission is a strong incentive for the cooperatives. The difference between the cases is that the sesame case has run for many years, while the bamboo case is planned to start in 2017 (if the firm manages to construct the plant). The sesame case shows that a firm can benefit from a contract farming scheme without getting involved in input supply. The key is the strong financial incentive to the cooperatives to make cooperation with its members work. The bamboo scheme is based on a similar design, which has not yet been applied.

All low-impact cases are outgrower schemes with irrigated land and are export-oriented (or import substitution). The green beans scheme has been running for nearly two decades but despite substantial donor support, it never included more than 150 farmers, as it could not offer them significantly better incomes. In 2016 the scheme stopped (again). The number of farmers in the sugarcane scheme is very high: around 3,700. Those who were forced to submit their irrigated land for the scheme in 1975 are worse off today than they would have been without the scheme. Those who submitted their rain-fed land in 2008 earn more or less the same as they would have with rain-fed crops. Passion fruit farmers are in a similar position. When they have irrigated land, few among them will offer that for growing passion fruit under a contract farming. When rain-fed land is used, their income can be much better; however, this requires the firm to invest in the irrigation layout, which makes the scheme much less attractive for it. The conclusion is that it is very hard for (export) companies to offer farmers who already have irrigated land a better deal than producing for the local vegetable market. The idea that outgrowers schemes offer a good deal for the farmers is not supported by the cases.

The firms

Impact on firms is analysed from the perspective of how much they capture in terms of produce, as this is typically their main driver to engage in the scheme. An important related question is how costly and difficult the efforts are that they have to undertake to get the produce.

The impact on the firms can be summarized as follows:

- Two firms received the supply they needed: Selet Hulling and Wonji Shoa Sugar Factory
- Two firms received the supply they needed, but with difficulties: Ethio Flora and Heineken
- One firm was able to receive a small supply only: AfricaJUICE
- One firm did not get what it was entitled to: ACOS
- Two firms did not purchase any produce: Solagrow and African Bamboo

The two most successful companies use very different strategies. In order to secure 50% of its supply from smallholders, the state-owned Wonji Shoa Sugar Factory invests heavily in the irrigation layout and uses the government to mobilize the land of the farmers. Selet Hulling gets 90% of its supply from smallholders by using its financial capacity to offer a strong incentive to the union to collect the produce; it combines this advance with a premium price for the sesame.

The two companies with difficulties in getting the produce they are entitled to are in quite different schemes. The scheme of Ethio Flora is well organized, with a clear task division between parties and an active role for the union. The difficulty in collecting the green beans was due to the low contract price in comparison with the local market price. The difficulty in the malt barley case is that Heineken has to invest significantly in distributing seed and chemicals, providing technical assistance and finance, organizing quality control and collecting the produce. As the firm is relatively inexperienced and not well resourced for these tasks, it is less efficient than local actors. Local traders, for example, have their own storage facility that they use year-round for different crops. Heineken has to rent stores for a few months. This is much more expensive. The same is true for transport: local traders are in a much better position to ensure that trucks are full, both when coming and going. They also know the farmers better. The extra costs for the firm in performing these roles are estimated at 10% of the value of the produce. This is in fact a loss; in principle, it could buy the same produce on the spot market against 10% lower costs.

Both firms have alternatives: the market for Ethio Flora is not very secure due to price fluctuations, and it can produce green beans on its own farm more cheaply than the outgrowers can. Heineken's alternative is to import malt. Although that is easier and cheaper in the short term, it is against the policy of the firm and the development strategy of the government. While Ethio Flora stopped the contract farming scheme in 2016, Heineken continues as it stands to benefit from a more efficient malt barley production system that can make the local malt more competitive with the malt available on the world market.

The impact of contract farming for AfricaJUICE is very low, or even negative. The firm planned to get half of its supply from outgrowers but has not yet managed to do so. This has a negative impact on the economic efficiency of its processing plant. Also, a considerable part of the firm's investment in the Outgrowers Incubation Project – due to a non-functional irrigation scheme – are lost.

Negative impact was also the result in the chickpea case, as ACOS did not get the second-generation chickpea seed it was entitled to buy from the farmers at the going market rate. Although it did get the advanced seed repaid through the union, the refusal of farmers to abide by the contract farming agreement will have a negative impact on the firm.

The impact on the two firms that did not buy anything is obviously negative as well. Both had their own internal reasons for not buying from the farmers. Their investments in the relationship with farmers and in the provision of seed and technical assistance did not bring any return. As both firms have already been working on this scheme for some years, there is a risk that farmers will be ever more reluctant to work with them. In the case of African Bamboo that risk is real, as farmers have received no benefit so far; in the case of Solagrow, the risk is much less as farmers have benefited from the seed they received.

The system

A good contract farming scheme leads to a win-win for both parties. Table 14 shows the combined impact on farmers and on the firms.

Table 14: Impact of the schemes on farmers and firms

Case	Start	Impact on farmer	Reason for impact	Impact on firm	Reason for impact
Malt barley	2014	+++	Better seed	++ / -	High costs
Chickpea	2014	+++	Better seed	-	Lost seed
Seed potatoes	2013	+++	Better seed	-	No purchase
Sesame	2007	++	Premium price	+++	Good supply
Bamboo	2011	++	Premium price	-	No purchase
Green beans	1999	+	Low price	+ / -	Low price
Passion fruit	2010	+	Low price	-	Low supply
Sugarcane	2008	+ / -	Low price	+++	Good supply

Only in one case is there an unqualified win-win: sesame. In most schemes, things could improve substantially. In five cases, the companies have to do better. Two have to invest: if AfricaJUICE invests in irrigation and African Bamboo in a processing plant, both the farmers and the companies will benefit.

In two cases the companies need to offer better prices: Ethio Flora and the Wonji Shoa Sugar Factory. Whether that is feasible, given the world market prices, is difficult to say based on the available data. It can be concluded, however, that growing vegetables for the local market is attractive; companies struggle to offer competitive prices to farmers with irrigated land. One firm – Solagrow – should simply start buying the produce.

In two cases – malt barley and chickpea – the interface should be strengthened to prevent farmers from side selling. These interfaces need to efficiently take over several tasks from the firms, such as input supply, access to finance and quality control. They need a solid incentive to do so.

References and further reading:

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6. Recommendations on contract farming

In this final chapter, the conclusions are translated into recommendations on setting up and implementing contract farming schemes. These are meant as general guidelines, not as a step-by-step manual. It is necessary to keep in mind that each case is unique, and often using common sense is more important than trying to apply instructions derived from other contexts. This chapter again follows the main dimensions of the analytical framework, addressing the partners, the contract, the interface, enforcement and impact.

6.1 The partnership

Farmers and the firm

Recommendation

- During the planning stage of any contract farming scheme, assess the technical and economic feasibility of the firm and the farmers.

The first step is to assess the long-term economic prospects of the firm:

- Is there a potential and sustained market?
- Does the firm have a potential comparative advantage in this market?
- Will the firm have the resources to capitalize on this potential comparative advantage?
- Is the firm willing and able to invest in setting up a long-term business relationship with the farmers?

Similar questions have to be raised with regard to the farmers:

- Do they have the potential to supply the demanded produce sustainably?
- Do they have a potential comparative advantage in producing?
- Will farmers have the resources to capitalize on this potential comparative advantage?
- Are the farmers willing and able to invest in setting up a long-term business relationship with the firm?

Donors

The role of donors is often overlooked or taken for granted. Donors are supposed to pay for the design of the scheme and to invest in those assets that are crucial and cannot be paid for by any of the partners. In some cases, government programmes may cover part of the (infrastructure) costs of the contract farming scheme.

Recommendations

- Donors should ensure that their contribution is transparent. All stakeholders should know what is contributed, for which purpose and through which channels.
- Donors should avoid handing over their contribution to one of the contract parties. It is recommended that neutral parties channel the donor funds in a balanced and transparent way.
- Donors who commit contract farming funds to a firm should commission an independent review of the firm's capacity to deliver on promises to develop a contract farming or outgrower scheme.

External facilitators

In virtually all contract farming cases, external supporters are needed to make things work: NGOs to facilitate the interaction with the community and to assist farmers in organizing themselves for the interaction with the firm; external experts (consultants) to facilitate a fair and sustainable business deal.

NGOs should be involved as a neutral, facilitating party. To do this, they have to be more aware of their strengths and weaknesses. Their strengths are mobilizing people and building trust and capacity-building of cooperatives. Their weaknesses are on the technical and business aspects, where they often lack the technical and economic knowledge and skills to talk to the companies as equal partners. As a result they often end up being a partner only for the farmers, not a neutral partner in the relationship; ultimately, this is not in the interests of the farmers.

Recommendation

- NGOs should position themselves from the beginning as a facilitating partner and build up the necessary technical and economic knowledge and skills; if this is too complicated and time-consuming, they should hire consultants to do the business planning part. Also, NGOs should withdraw once the scheme is working properly.

Consultants' involvement in design and implementation of contract farming schemes is generally limited for different reasons. First of all, many stakeholders underestimate the complexities of contract farming and therefore think that advisers are not needed. In any case they are considered to be expensive. Second, NGOs can perceive the involvement of consultants as a sign of their limited capacities. As donor funds are increasingly focusing on private sector support, NGOs do not want to be seen as "merely" working on social issues. Third, many companies do not see the need for consultants as they feel that they know all business aspects very well; they often adopt a paternalistic attitude towards the farmers and their organizations. For some, the involvement of consultants is a sign of mistrust that they are motivated to offer farmers a fair deal. Finally, some firms can be afraid that consultants could use the information that they gather to support competitors.

Recommendations

- Consultants should focus on revealing the potential benefits of a scheme based on detailed analysis of the costs and gains for all partners (farmers, companies and interface). They should remain factual: if it cannot work, say so. If data are unclear or contested, say so.
- All facts should be presented to the stakeholders, who should be assisted – if necessary – with taking the decisions. This includes the question of who pays for the consultancy services, and who is the consultant's client.
- All stakeholders should be supported in seeing the wider picture. How will markets or the farming system develop in the future? How can the scheme benefit from other initiatives?

Establishing the partnership

Recommendations

- By their nature, contract farming schemes can last for many years. End markets need development, and rushing things is not a good idea. Transparency and building trust are essential. Frequent face-to-face contact and visibility are very important. Inviting farmers to a factory, or sitting down with them for a meal in their houses can have more impact than 10 meetings.
- Involve neutral parties from the beginning (see above).
- Work with local government to smooth the decision-making and enforcement process. Advisory committees of local officials can work very well.

6.2 The contract

The content of the contract depends on the actual situation on the ground and should reflect the specificity of supply- and demand-side factors.

Recommendations

These recommendations are directed at the firm:

- Make sure farmers are enabled to produce what is agreed. They need inputs, technology, knowledge and skills and access to finance and markets. If one of these elements is not directly secured by the contract, it should be secured in another way.
- Limit the contract to what is essential. Avoid having the firm supply what other parties could do better, cheaper or more sustainably.
- Especially when the contract needs to be comprehensive, reflect from the very beginning on how other, commercial, partners can take over some roles in the future, for example, seed supply and finance.
- Where side selling might become a problem, design a contract that gives the firm some leverage over the farmers, for example, sell seed for cash to farmers at a price above the market rate. When farmers deliver the produce as agreed, the additional margin is refunded. This needs to be accompanied with a kind of insurance system: if production fails due to circumstances outside the control of the farmers, they still need to get the refund.

6.3 The interface

In most cases, farmers and companies make good profits. There is, however, a structural lack of attention for the business case of the interface, which plays a crucial role in most contract farming schemes.

Recommendations

- Contract farming should be conceptualized as a deal between three, rather than two, partners: the farmers, the firm and the interface. This is different from the arrangements described in the earlier publication *It takes two to trade* (Annex II); in contract farming, it takes three to trade!
- In the design phase, sufficiently clarify what communication systems are needed and the transaction costs these imply.
- Like the other business partners, the interface needs (robust) profits and incentives to keep the system going. Ensure a remuneration system for the interface to allow it to be financially sustainable, based on a solid business plan.
- Making a business case for the interface can be done using an economic simulation model. Annex I gives more information on this methodology, as well as an example.

6.4 Enforcement

In the case of outgrowers, contract enforcement is not problematic. Farmers have no other place to sell their product. For other types of contract farming schemes this is different: farmers can sell elsewhere; companies can also buy elsewhere. Legislation may be present, and public institutions may have a role to play in contract enforcement. In many of the contracts in the cases, the right to appeal to local authorities is included. The real potential of these institutions to enforce the contract conditions may be limited, however.

The main instrument to avoid side selling is self-enforcement, that is, ensuring that farmers stand to lose from side selling. This can be done in three ways:

- Exclude side sellers from future benefits; that is, do not give them access to quality seed in the following year.

- Ask a kind of down payment from them; that is, sell them seed at higher than market price. The additional amount can be reimbursed with the money made from the produce that they actually deliver.
- Involve third parties that have better legal means to enforce payment, for example, MFIs and banks.

Some more general measures can help:

- Build strong cooperatives with the social and economic capital to enforce their contracts with their members. Peer pressure exercised on behalf of the collective interest is more effective than external, legal pressure.
- Reduce disputes over quality issues (including the price premium) by defining and promoting clear quality standards for all relevant products.
- Reduce disputes over price issues by establishing reference markets (in terms of quality and place) and by announcing weekly benchmark prices.

6.5 Impact

This book asks: Is contract farming a real solution to rural development challenges?

Contract farming can be a successful element in a modern agricultural development strategy, as the current discourse reflects. The cases in this book show different levels of impact for firms, farmers and interface. The AgriProFocus learning track set out to learn from successful cases as well as from the challenges.

A first point is that the impacts on the other support systems for smallholders are often forgotten. In several cases, regular service providers (such as agro-dealers and MFIs) are marginalized by the contract farming arrangement. As most firms do not hand back these tasks to service providers once the contract farming arrangement is established, this weakens the agricultural support system.

A second point not discussed in the cases is the wider impact on other actors in the value chain or sector. How does contract farming influence the competition and markets?

Recommendation

- Study these systemic effects to allow a more in-depth and realistic view on the systemic impact of contract farming schemes, not only on those directly involved but also on the members of their community.

An important lesson is for the design phase: more attention is needed for the interface. Beyond balancing the short-term interests of farmers and firms, the designers should also pay attention to the interface and its longer term beneficial effects. Understandably, the farmers and the firm are motivated by the short-term benefits. This implies a blind spot for the sustainability and longer term effects of the contract farming arrangement.

Recommendation

- Neutral, independent experts are needed to design contract farming schemes that a) balance the short-term interests of farmers, firm and interface, and b) build towards the longer term interest of a sustainable contract farming system.

Annex I: Economic simulation model

The design of an economic simulation model (ESM) starts with seven basic questions:

1. Which services will the cooperative deliver to the farmers and to the firm?
2. How can these services be organized? Look at role of staff, lead farmers, firm staff, third parties, etc.
3. What is the expected turnover for each of the services? This depends on the number of farmers, their average area, seed rate, etc.
4. What investments are needed to offer these services?
5. How will the investments be paid for: by farmers, the firm, a donor?
6. What running costs are needed to offer these services?
7. How will the running costs of the services be paid for: commission (fixed, percentage), fee from the firm, contribution per members or per hectare?

An ESM consists of a Microsoft Excel file with three sheets:

1. a sheet with all investments (capital expenditures): e.g. a scale, a storage facility
2. a sheet with all running costs (operating expenditures): e.g. the salary of a manager, transport costs
3. a decision-making sheet with all assumption needed to simulate different scenarios: the number of farmers; the services each farmer needs (seed, output marketing); the prices (for inputs, etc.); the commission of the cooperative (fixed fees or percentages).

The data on these sheets are used to construct the monthly cash flow of the cooperative in the first years (e.g. five years). This generates the monthly income and expenditure of the cooperative. Both the income and expenditures can be from services (selling seed) or from financial transactions (fees paid by members). To be realistic, all income has to be booked (at least) one month after the expenditure. For example, it cannot be assumed that 100 qt of cereals can be bought at 1,000 ETB/qt and sold at 1,100 ETB/qt in the same month. In reality, the cooperative first needs to have, for example, working capital of 100,000 ETB to buy the cereals before it can sell them in the next month.

Working with the cash flow is important for two reasons. First, farmers understand a cash flow better than a profit/loss calculation and the concept of depreciation. Secondly, it is a lack of cash that causes companies or cooperatives to fail, not a lack of profitability. Once a monthly cash flow has been made, this can be used to make a cumulative cash flow (CCF) over the years. This CCF can never be below zero, as then the cooperative would be without cash and would have to stop operating (or go bankrupt).

Changing the parameters on the decision-making sheet can simulate different scenarios. This simulation is done with the farmers, as they have to take the decisions. Typically, they have to decide on:

- expected turnover of the cooperative
- salary levels of the staff and incentive systems
- initial contributions of members who join the contract farming scheme, in terms of the share they have to buy
- commission / fee for the services of the cooperatives.

These parameters are interdependent, and farmers should look for an optimum; for example:

- If the cooperative has 50 members paying a 2% commission on output marketing while they are expected to sell 10 qt each for a price of 900 ETB/qt, the expected income is 9,000 ETB; this defines a limit to the salary of the manager

- It works the other way around as well: if the manager earns 1,500 ETB per month for 12 months per year, the cooperative needs 100 members paying 2% commission on 10 qt each (with an expected 900 ETB/qt).

The ESM can immediately show farmers the impact of their (virtual) decisions. It can guide the decision-making by showing which combination of assumptions (on members, quantities, prices, salaries, commission, etc.) is feasible and which combination is not. Generally, the initial assumptions of farmers and companies are not realistic, as they underestimate costs and the need to build up a solid working capital. Making all costs explicit and showing how much working capital is needed generally leads farmers and companies to accept higher commission for the work done by the cooperative (interface). This is illustrated by the malt barley and bamboo cases in this book, where the commission of the cooperatives had to be increased substantially to make them viable.

Annex II: The 2-2 Trade methodology

The Two to Trade methodology is developed by AgriProFocus, Wageningen UR-CDI and KIT.

Communication is a key function of the interface; this is where the partners meet and negotiate sensitive issues. Any interface needs constant maintenance, as the business and the partners are in constant flux. Yields can be disappointing, technologies can fail, prices change constantly, etc. The approach “it takes two to trade” (2-2 Trade) deals with this.

The 2-2 Trade approach is a tool for the assessment and improvement of farmer–firm relationships. It looks at both the direct interaction between the farmers and the firm, as well as at the context in which this happens. It uses seven analytical dimensions: Product and Market, the Firm, the Farmers’ Organization, the Farmers, the Agribusiness System, Communication and Planning, and Delivery and Performance.

The 2-2 Trade tool is implemented in three phases:

1. Understanding the case

In this phase, information is collected about the case through interviews or focus group discussions with farmers and the firm. This leads to a summary of (potential) challenges (problems, conflicts, difference of opinion) in the relationship. The most important challenges are rephrased into statements (e.g. “the quality of the pepper is insufficient for export” or “the firm pays too late”).

2. Bringing out the perceptions and views

Now the farmers and firm score the statements from 1 (totally disagree) to 4 (totally agree). The scores lead to an overview of the most important issues where the farmers and the firm agree or where they disagree.

3. Bringing the relation to the next level

In a debriefing meeting, the scoring results are presented and an open discussion about the agreements and disagreements is facilitated, followed by joint action planning.

The method is systematic and comprehensive. It is explained in detail in a book that comes with a workbook and tailor-made Excel sheets to enter the data. All of these resources are available online at <http://agriprofocus.com/two-to-trade>.

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Gerrit is a son of a Dutch dairy farmer. After studying tropical agriculture in Wageningen, he worked in Tanzania and Albania and then was a consultant for over a decade. Between 2012 and 2015, he was manager of Fair & Sustainable Ethiopia and country coordinator for AgriProFocus Ethiopia. His focus is on the human aspect of farming. How can smallholders integrate in modern value chains on equitable terms? What can be the role of producer organisations and concepts such as value chain alliances and contract farming?

"It takes three to tango. Successful contract farming schemes require three actors to cooperate: farmers, firms and their interface. Each should have an incentive to make the scheme a success. And all should act as mature business partners: shoulder the risks in their part of the deal and re-invest part of the benefits to strengthen the long-term business relationship."



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Sorsa is educated in Economics (BA) and Rural Development (MA) and has worked for 30 years in different government, non-government and private sectors with different duties and responsibilities. He currently works for FFARM PLC, an agribusiness development consultancy firm, as a senior Agribusiness and Value Chains Development Consultant in Ethiopia.

"Mutual trust and smooth relationships are much more important for the success of contract farming than any legal enforcement mechanism. Contract farming imposed by one of the parties or a third party is unlikely to be successful and more likely to result in breaching of the agreement."



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Terfesa received his BA in Business Management and BSc in Mathematics. In 1995, he joined HUNDEE, a local NGO, and worked as a manager in its branches offices. Since January 2006, he has been providing capacity-building and business management services for farmer marketing organizations in Ethiopia. Terfesa is a Manager of FFARM PLC and board member of Busa Gonofa MFI.

"Contract farming is about how hard partners need to work to be effective and efficient."



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Aklilu received a PhD degree in Production Ecology and Resource Conservation from Wageningen University in the Netherlands. He has been actively involved in several international research projects, and his prime areas of research interest include land and water management, land governance, climate change impacts and adaptation strategies and rural livelihood changes. Aklilu has published a number of monographs, book chapters and articles in peer-reviewed international journals.

"Contract farming in Africa opens up beneficial opportunities for poor farmers, but it requires significant genuine, transparent and inclusive modality to make it sustainable."



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Getachew has obtained his BA and MA degrees in Economics. He has increasingly specialized in the field of microfinance and agribusiness development. Over the past 10 years, Getachew has been involved in the design, pilot testing and implementation of various microfinance programs and agribusiness projects. He has supported many MFIs, SMEs, producer organizations, cooperatives and NGOs to effectively implement microfinance and agribusiness initiatives that contribute to the food security and income of poor people and smallholder farmers.

“For contract farming to be effective, farmers should be educated to understand the long-term business relationships of the scheme and not to take selfish advantage of price offers.”



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Misrak was trained in animal nutrition and worked in government offices in different positions at district and zone level. Later she joined Facilitator for Change, a local NGO, as Agricultural Scale-up and Market Development Coordinator. As an agricultural value chain coordinator in Clinton Health Access Initiative, her job is leading the process of agriculture value chain development of the program, including developing feasible and effective modality of partnerships. Misrak is a member of the advisory board of the FSRE Fund.

“Contract farming has both advantages and disadvantages. Examining both perspectives will empower market actors to make better choices to minimize the disadvantages and maximize the advantages.”



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Tarekegn studied Rural Development and Entrepreneurship in ICECD, India, and has worked in Ethiopia in community development, agribusiness, building farmers’ organizations and rural enterprises for the last 14 years. He has worked in NGOs, for AgriProFocus and in the private sector (as consultant) and is currently working in Heineken Ethiopia as Local Sourcing Manager. He works closely with farmers and promotes the handshake approach rather than the hand-out approach. His main work is in how to make the Ethiopian malt barley value chain (which is dominated by smallholders) a sustainable and competitive chain that is attractive for both the farmers and companies/buyers. How can Ethiopia be self-sufficient in malt barley production and move towards export?

“‘The ultimate goal of farming is not the growing of crops, but the cultivation and perfection of human beings and relations.’ In contract farming the understanding between the buyer and the seller is very crucial. Both parties separately are not perfect and hence need to work together and to share experience, resources and knowledge. There is an African proverb that says, ‘The youth can walk faster but the elder knows the road’.”



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Fekadu has a PhD in Social Anthropology from Martin Luther University, Germany. Currently he is an Assistant Professor at Addis Ababa University, College of Social Sciences, Department of Social Anthropology, where he served as head of the Department for more than three years. His research areas of interest are agricultural investments, land governance, identity studies, conflict and conflict management, borderland studies and migration. He has published articles in peer-reviewed journals and contributed to edited volumes.

“Contract farming is a workable model. However, the basic principle of responsible and inclusive business has to come first.”



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Lamberto is Scientific Officer at CIHEAM Bari, with skills in sustainable agriculture and rural development. He has a broad professional experience that includes research, education and cooperation activities. During the last 20 years, he has worked in different geographical contexts, focusing his attention on small-scale farmers and producers, supporting the development of their knowledge and innovation systems and value chains. From 2011 to 2015 he was the Project Manager of SupHort Ethiopia.

“Contract farming for Ethiopian smallholders means more than the sole selling of products to firms. It represents an opportunity to get new knowledge and skills, set up relationships with important economic actors, reduce distances and enlarge market perspectives. Firms should be aware of this and be prepared to ‘cultivate’ smallholders’ hopes.”



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Tiglu graduated from Hawassa University with a BSc in Horticulture in 2007. After his graduation, he worked in the private sector in firms such as Tabor Herbs PLC and Green Mark Herbs PLC as Production Manager until 2013, based in Hawassa. Between 2013 and 2015 he worked on an Italian SupHort project based in Addis Ababa, providing technical assistance on horticulture.

The project involved frequent travel to the Amhara and Oromia regions. Tiglu joined the SNV Horti-LIFE project in October 2016 as District Coordinator, based in Adami Tulu.

“A contract farming scheme comprises three actors: farmers, firms and interface. Each of them plays a great role to achieve the real goal of contract farming. Those actors are sharing the risks and the benefits.”



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Gizaw is Communication Facilitator for AgriProFocus Ethiopia. Previously he worked as a journalist for about four years as Deputy Editor-in-Chief. He is also a graphic designer, photographer and webmaster. Gizaw graduated from Unity University with a Bachelor of Laws and from Leadstar College with an MBA. His involvement in this publication included photos, the map and biographies.

"It proved difficult to capture the topic of this book in photos. Contracts and farming are separated in space and time. In the end, the best photos show the impact for the rural economy."



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Victor is a value chain specialist with 10 years' experience in sustainable economic development. After working in West Africa for five years, Victor now works as a Senior Business Development Advisor for Fair & Sustainable Ethiopia PLC. His background is in international business as well as international development, and contract farming is placed right at the intersection of these domains. His involvement in this publication included feedback and editing.

"Contract farming schemes require skillful design and flexible implementation. As in other types of relationship, the parties involved should be open-minded and willing to learn and to let go of previously held beliefs to ensure they can collaborate well."



Wim Goris

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Wim grew up on a mixed farm in Netherlands, trained in tropical animal husbandry and worked in north-eastern Brazil. He joined Cordaid and worked in food security and agricultural development in Brazil and other countries in Latin America. As a network facilitator for AgriProFocus, his job is to promote farmer entrepreneurship in Africa. Wim is co-author of the Agricultural Innovators in Ethiopia book, published in 2016. His involvement in this publication included organising the feedback and final editing process.

"Contract farming can be anything between a good deal for all and exploitation of one party by the other. Sharing profits seems the easy part, as compared to sharing risks and losses."

Contract farming in Ethiopia

Concept and practice

Contract farming is a priority in Ethiopia's growth policy, as it is linking agribusiness development to smallholder farmers. For agricultural firms, contract farming is a quick way to start up or expand production. Smallholders expect contract farming to improve access to inputs, technology and services while reducing market uncertainty.

In this book, eight cases of contract farming in Ethiopia are described and analysed. The cases cover a variety of crops: malt barley, chickpea, potatoes, sesame, bamboo, green beans, passion fruit and sugarcane. All case descriptions use an analytical framework with five dimensions. The publication is the culmination of a learning track organised by AgriProFocus Ethiopia and agricultural professionals from its network in Ethiopia.

The cases show that contract farming contributes to a new and much-needed dynamic in the agricultural sector in Ethiopia: new inputs and technologies are being introduced, quality of production is improving, and smallholder farmers are being trained and can access finance and new markets. Firms are benefiting from a more secure supply of quality produce.

At the same time, this book shows some of the limitations of contract farming: several schemes performed below target, sometimes because firms did not follow up on their promises, sometimes because farmers failed to deliver. One of the underlying problems proved to be the lack of investment by farmers and firms in a sustainable interface to organise and coordinate the relationship. An interface can be a cooperative, an informal group and/or lead farmers who mediate between the many farmers and the firm in the contract farming scheme. The performance of this interface is the most important variable for the success of the scheme. When an interface performs well, contracts are respected and transaction costs are low.

This publication is written in an accessible style and geared first to practitioners in agricultural development in Ethiopia. At the same time, the case conclusions and recommendations may inspire researchers, policymakers and donors in the wider network of AgriProFocus.

Read more at <http://agriprofocus.com/ethiopia>.

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