

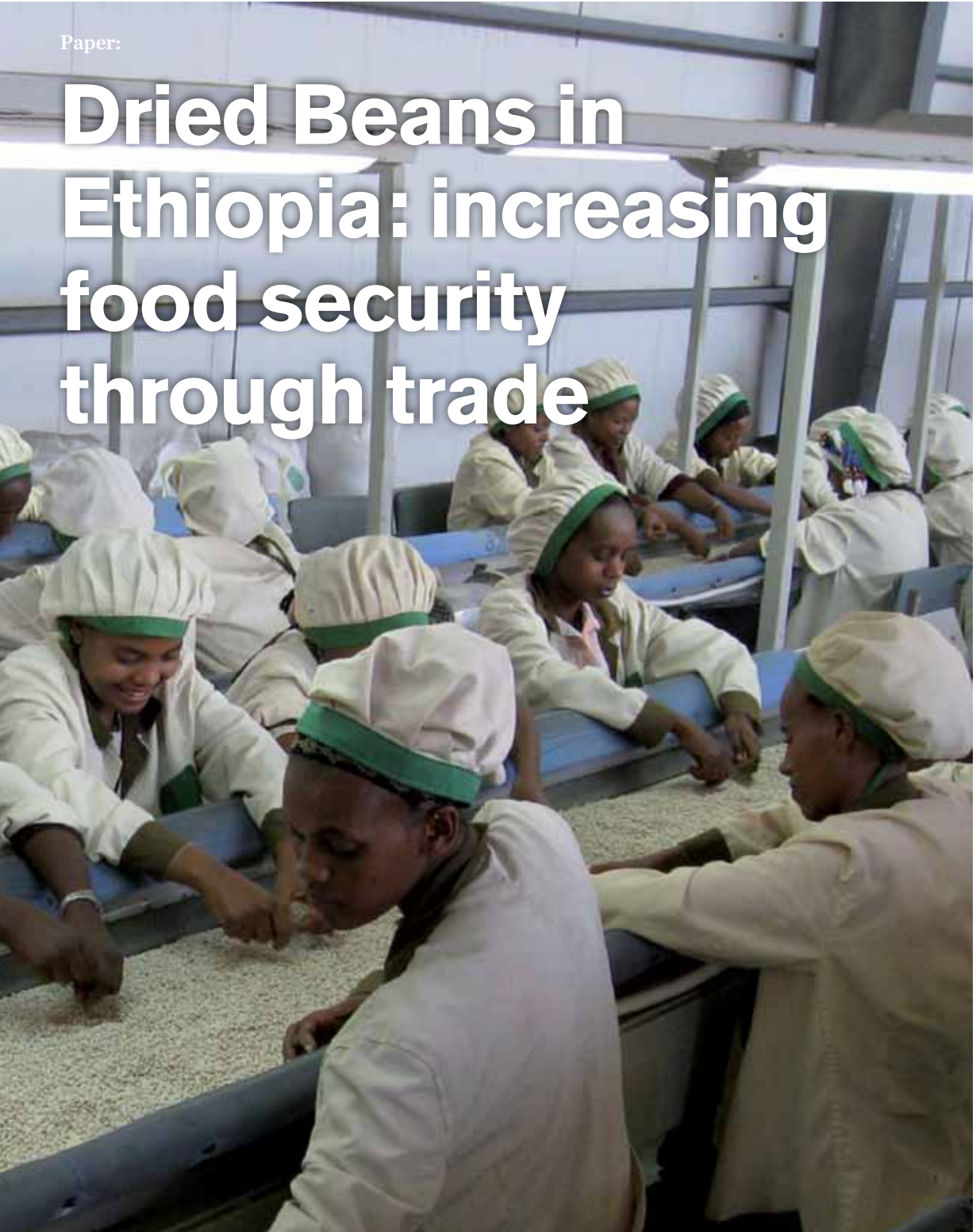
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Paper:

Dried Beans in Ethiopia: increasing food security through trade



This paper is part of a publication series generated by the New Business Models for Sustainable Trading Relationships project. The partners in the four-year project – the Sustainable Food Laboratory, Rainforest Alliance, the International Institute for Environment and Development, the International Center for Tropical Agriculture, and Catholic Relief Services – are working together to develop, pilot, and learn from new business models of trading relationships between small-scale producers and formal markets. By working in partnership with business and looking across a diversity of crop types and market requirements – fresh horticulture, processed vegetables, pulses, certified coffee and cocoa – the collaboration aims to synthesize learning about how to increase access, benefits, and stability for small-scale producers while generating consistent and reliable supplies for buyers.

For further information see:
www.sustainablefoodlab.org/projects/ag-and-development and
<http://www.linkingworlds.org/>

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Dried Beans in Ethiopia: increasing food security through trade

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Acronyms and abbreviations

ACOS	Agricultural Commodity Supplies
BDS	Business development services
CIAT	International Center for Tropical Agriculture
CRS	Catholic Relief Services
EIAR	Ethiopian Institute of Agricultural Research
FAO	Food and Agriculture Organization of the United Nations
FOB	Freight on board
GAP	Good agricultural practices
IIED	International Institute for Environment and Development
NBM	New Business Models
RA	Rainforest Alliance
SFL	Sustainable Food Laboratory
UKAID	Aid from the Department for International Development
USAID	United States Agency for International Development

Executive summary

Millions of farmers in Africa depend on export markets for their livelihoods. Although small-scale farmers have the skills and soils to provide high-quality products for the food industry, their entry into these markets is constrained by increasingly stringent standards, volatile prices and lack of credit.

The New Business Models for Sustainable Trading Relationships project was a four-year initiative in sub-Saharan Africa that sought to understand how different supply chains can be adapted to include and benefit small-scale producers. Partners from research, civil society and the private sector worked together in four value chains to develop and implement new business models that enable smallholders to build sustainable trading relationships with international businesses.

This paper focuses on the Ethiopian arm of the project in the central Rift Valley including East and West Hararghe, where Catholic Relief Services (CRS) facilitated efforts to improve white pea bean production and trade with retail markets in the United Kingdom. Although white pea beans are one of Ethiopia's main sources of foreign exchange, they are mainly produced and marketed by poor smallholders with little support from cooperatives or unions. Increasing production and exports could help many households in a country affected by chronic poverty and food insecurity. White pea beans are particularly important to the farmers as they are a short season crop, provide much needed cash flow early in harvest season. In order to break into the UK market, which sells millions of cans of baked beans every day, CRS needed to engage with formal and informal actors at different levels of a complex chain: farmers, cooperatives, local traders, exporters, importers, European canning factories and their retail partners and consumers.

At the farmer level, CRS worked closely with agronomists and extension agents to develop

and disseminate training materials on good agricultural practices, deliver technological support to help farmers increase their yields and incomes, and provide high-quality seed and access to credit for seed. The project facilitation team worked closely with an export company with strong trading relations in Europe and a sophisticated product processing factory in the UK.

Initial success with established varieties and plans for a new single variety increased farmer incomes and raised the profile of Ethiopian beans as a quality product with ethical trade credentials. The project then had to adjust to the combined effects of drought, a new buyer in the lead canning company, the global economic downturn and a new Ethiopian commodity exchange. By the time it ended in late 2011, the project had generated valuable benefits for thousands of farmers and taught producers and project staff a great deal about coping with various setbacks. But significant challenges still need to be addressed, such as lack of seed, production statistics, strong farmer organizations, and new trading constraints

On a broader level, this experience provided valuable lessons for the whole New Business Models (NBM) project. Retailers are interested in linking up with smallholders, often prompted by consumer demand for ethical products. The dynamic nature of markets means that buying conditions can change quickly, and strategies and interventions need to be adjusted accordingly. Buyers are often reluctant to work with new suppliers, especially from 'new source' developing countries; value chain partners can be fickle, and opportunities need to be acted upon quickly as they do not always last. Success in this field requires patience, considerable investment, acceptance that it may take several attempts to break into this type of market, and strong management to maintain business relations and contracts that are put in place.

1

Introduction

Increased global demand for a wide range of higher-value food products has opened up new opportunities for farmers in sub-Saharan Africa, where the soils, climate, low labor costs and proximity to European markets lend themselves to these types of produce. Many smallholders, even those with quite modest levels of output, can be at least as efficient as larger farms. But formalized markets require higher levels of capitalization and supply chains that can deliver the right amount of quality products according to a strict schedule. Closer collaboration along the supply chain is also needed, with buyers brought into the process at an early stage to help farmers access trade opportunities.

The four-year New Business Models for Sustainable Trading Relationships project was

designed to bring together leading food companies, NGOs and farmer associations to develop new business models that will help build sustainable relationships of benefit to all those concerned.

The aim of the New Business Model (NBM) framework is not to design the perfect business model, but to identify and test structures that can be built into commercial trading relationships to improve smallholders' chances of participating successfully in formal markets and avoid their potential pitfalls. Over time, the goal is to build a set of principles, tools, and cases that work as a checklist – helping producers, support agencies and companies find concrete opportunities in value chains.

Box 1: The New Business Models project

This case study is part of a publication series generated by the New Business Models for Sustainable Trading Relationships project. The partners in this four-year collaboration (2008–2012) – the Sustainable Food Laboratory, Rainforest Alliance, the International Institute for Environment and Development, the International Center for Tropical Agriculture, and Catholic Relief Services – worked together to develop, pilot and learn from new business models to facilitate trade between small-scale producers and formal markets. The collaboration has involved private sector partners in four value chains: (1) fine flavor cocoa in Ghana, (2) certified cocoa in Ghana and Côte d'Ivoire, (3) outdoor smallholder flowers in Kenya, and (4) dried beans in Ethiopia. By working in partnership with business and across a diversity of crop types and market requirements, the collaboration aims to synthesize knowledge about how to increase access, benefits and stability for small-scale producers while generating consistent and reliable supplies for buyers.

More on the New Business Models principles and framework can be found in the paper “Think Big, Go Small: adapting business models to incorporate smallholders into supply chains” available at www.linkingworlds.org and <http://www.oxfam.org/en/policy/think-big-go-small>

2

Project background

In 2007, Catholic Relief Services (CRS) teamed up with the Sustainable Food Laboratory (SFL), the International Institute for Environment and Development (IIED), the Rainforest Alliance (RA) and the International Center for Tropical Agriculture (CIAT) to find ways of linking poor smallholder farmers in Africa with modern commercial markets in Europe. The New Business Models for Sustainable Trade project explored four separate value chains to see how this could be done.

This case study describes the team's efforts in Ethiopia, where it worked with some 15,000 farmers to improve the white pea bean trade with retail markets in the United Kingdom. Project activities were facilitated by CRS, which has a long-established field presence in Ethiopia; while SFL and IIED provided technical support for the work with formal private sector partners, and RA was responsible for technical support for the monitoring and evaluation process.

Each of the four value chains was viewed as a different learning opportunity. While three of them dealt with higher-value products – flowers, cocoa and coffee – the fourth chain for beans is mainly supplied by poorer farmers. Since there were no large bean farms in Ethiopia, boosting exports of this product would improve the incomes of thousands of smallholders rather than supplementing the profits of an elite few.

“The challenge here was to link thousands of atomized farmers with plots sizes of less than an acre with modern markets and also to work with strong private sector partners to help Ethiopian exports shift up the value chain.”



Quality, hand picked white pea beans ready for export
© Shaun Ferris

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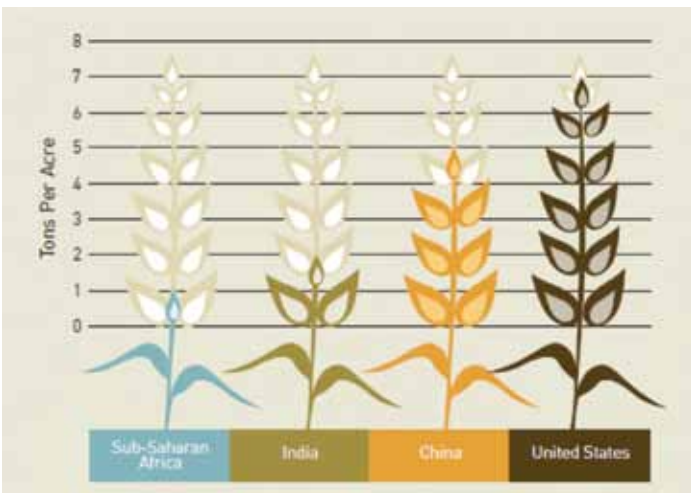
The situation for Ethiopian farmers

Years of war followed by political tension, high population density, volatile weather and geographic remoteness have left Ethiopians with much more limited access to infrastructures than their neighbors in surrounding countries. Only 6 per cent of Ethiopian households are connected to an electricity supply, 8 per cent of people subscribe to a phone service, just 5 per cent of irrigable land is irrigated, and only 2 per cent of hydropower potential has been tapped. A country with comparable levels of income should have three to four times greater road density, and six times the electricity consumption. Access to financial services in rural areas is poor, which means that the cost of borrowing is high. This nation, whose main sources of foreign exchange are coffee, skin and hides, khat (Arabian tea), white pea beans and sesame, suffers from chronic food insecurity.

The farming community is completely dependent on rainfall to sustain crops. When rains are good, between 4 and 5 million Ethiopians needed food safety net support; when they are poor, this number rises to around 10 million (out of a population of 90 million). CRS is one of the main agencies delivering emergency and development assistance to vulnerable farming communities. Its emergency work offers a social safety net, providing people with food so that they do not have to sell off their limited assets in times of drought. The safety net program is an important part of the government's overall humanitarian and development strategy.

Ethiopian agriculture is reliant on small, rain-fed farming systems that are highly vulnerable to climatic shocks. These farms provide 50 per cent of national GDP and 85 per cent of

Figure 1: Worldwide Agriculture Production



Source: Bill and Melinda Gates, Agricultural Development Strategy Overview, Global Development Program, August, 2011.

Box 2: Farmer profile

Demissie Tsegaye is a fairly typical smallholder who farms three hectares in the Bora District of Ethiopia. He is 47 years old, married, with five sons and three daughters. The family has no access to rural infrastructures such as roads, water supply or health care, and is totally dependent on farming for food and income.

Tsegaye grows maize, wheat, teff (a cereal) and white pea beans, using a rotation system adapted to his environment, equipment and knowledge. He has no irrigation system, and is wholly reliant on rainfall – which is erratic and often insufficient. He ploughs with oxen, and then plants, weeds and harvests by hand. Crop residues and animal dung are applied to maintain general soil fertility, but he doesn't use any pesticides or fertilizers on his beans.

Beans are harvested from October to November, when food is in short supply. All local farmers grow them as a cash crop to help cover their food costs, but Tsegaye often has to sell early in the season when prices are low, so he doesn't make as much as he could from his beans.

He says: 'I have to sell my crop as quickly as I can because we always need the money, especially

early in the harvest when the white pea beans mature. It's hard because the traders set the price, but I really have no choice because I can't get credit or information about market prices. I ask other farmers how they get on, but there's not much we can do. We're all a bit dubious about the traders' scales, but we can't check whether they are accurate or not.'

When the project started, there was little trust between farmers and traders, and no official controls in place. There were some farmer associations in certain areas and these did help, but Tsegaye did not have access to one.

He had some ideas about the kind of improvements he wanted to see: 'I think I could make better use of rainwater. I've heard that other farmers have found out how to capture it and use it to help their crops. And I think I could get better results if I had better seed. I often lose a lot of my seed to pests. It would help if I could understand market prices better too. Last year, bean prices went up a lot at the end of the season. I don't know why this happened and it didn't help me at all, but better prices would make a big difference to our life.'

employment. The vulnerability of the agricultural system is exacerbated by the extreme climatic conditions in Ethiopia, and growing problems caused by cycles of drought followed by flooding. This leads to very volatile production and prices, and periodic famine – a situation that is predicted to worsen with climate change.

Although agricultural output has increased in recent years, long-term growth in Ethiopia is still constrained by low levels of agricultural and industrial productivity. Ethiopian farmers are only about 10 per cent as efficient as smallholders in China. Population pressure across the country has led to the continuous subdivision of land into unviable plot sizes (< 1 ha), and poor land use has caused widespread environmental

degradation, with marshland and shallow lakes drained through overuse by people and livestock.

The Ethiopian government has supported farmer organizations by issuing specific licenses allowing them to procure fertilizer and export produce directly. Farmer cooperatives come together under umbrella organizations known as farmer cooperative unions. Although these unions are widespread, most lack the resources to buy produce from their members, provide basic services such as finance or storage facilities, or help with market development. Because of this, around 70 per cent of the white pea beans grown in the country is sold through small informal trader networks – as is the case with many products across Africa.

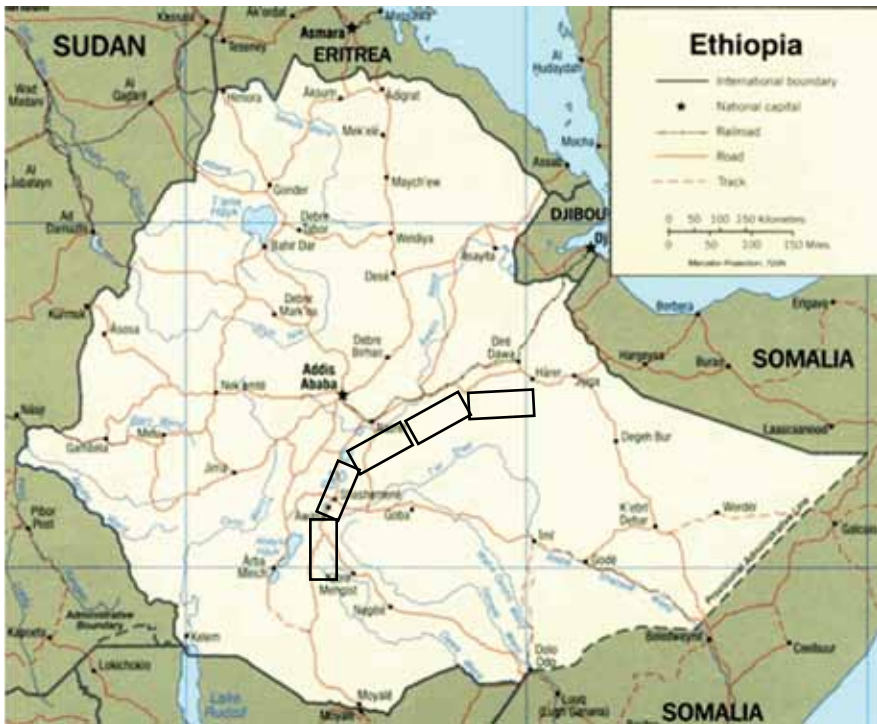
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The white pea bean industry

In the United Kingdom, white pea beans are processed into baked beans, a traditional dish that has been a staple food since the 1800s. In the past, they were baked with a tomato sauce and consumed immediately; nowadays, baked beans are sold as a pre-cooked, canned product. The leading brands for baked beans in the UK market include Heinz and Branston. In 2008, Heinz sold a staggering 1.5 million cans of beans every day in the UK, and was believed to have cornered 80 per cent of the UK retail market despite competition from 40 other types of canned baked beans on offer across the country.

Ethiopian smallholders have exported white pea beans for more than 30 years, originally selling them on low-value markets in the Middle East and Eastern Europe. Export levels exceeded 40,000 metric tons (mt) in the early 1970s, dropped to around 10,000 mt after an extended period of political instability and severe drought, and then reverted to former levels in the 1990s. As demand increases, it seems likely that bean exports will exceed 65,000 mt, given the advantages of improved varieties, enhanced production methods and better market linkages.

Figure 2: Bean buying in the Rift Valley



Map of Ethiopia, with production zones for white pea bean identified in the Rift Valley. Source: Authors

The main region for bean production in Ethiopia lies east of Lake Ziway, in the central Rift Valley. This is the area covered by the three left-hand boxes in the map of the production zone. The two right-hand boxes show production in the West and East Haraghe areas. The price of white pea beans has increased over the past five years as demand from the market has grown, and new production zones have recently expanded to western and northern parts of the country.

Beans are typically rain-fed, grown without chemicals on plots of 0.3 to 5 hectares. As there is no irrigated production, yields are highly dependent on rainfall. Farmers in the more commercial areas of the central Rift valley, in East Shewa and Arsi, tend to have larger fields and use monocropping production systems; those in the poorer, dryer and less commercial

areas of Haraghe intercrop white pea beans with sorghum and other crops.

The main growing season lasts from June to October, with output marketed from September to March. As a short-duration crop, beans are well suited to the low rainfall conditions in the Rift valley, and provide much-needed cash at a lean time of year.

White pea beans are not widely consumed locally, as they are not part of traditional Ethiopian diet. With farm sizes declining and very limited options to increase their income from staple food crops, many smallholders have started to produce white pea beans in an effort to seize more lucrative market opportunities and maximize their income from the limited land available.

Figure 3: Production and marketing season for beans in Ethiopia

Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		Short rains production									
			Lean season market								
				Long rains production							
Marketing season								Main market season			

5

Value chain development

While most CRS projects focus on helping farmers produce crops to sell on the local markets, the aim of this project was to understand and develop more sustainable trading relationships across a complex export market chain. This involved working at many different levels in the chain, with farmers, farmer cooperatives, local traders, exporters, processors and UK-based buyers (as shown in Figure 4 below). The process of working along the market chain in order to help all the people and companies in the chain collaborate more effectively is known as 'value chain development'. Value chain upgrading is a process of joint innovation and investment that aims to overcome priority weaknesses within the chain, and build long-term trading relations to ensure that customers can obtain quality products at competitive prices.

While CRS typically focuses on working with farmers to enhance their productivity, it also works with the business development services that support their activities. This mainly involves linking farmers into local informal markets and supporting local government and trade regulations. CRS works with government extension officers and a network of local partners who are skilled in providing production and market support for farmers.

Because this project extended right across the chain, from the informal local market to the formal international market, CRS needed to look beyond local market actors and consider working relations all along the chain, from farmers and farmer unions to traders, exporters and importers, European canning factories and their retail partners and consumers. As the core chain actors include both informal market farmers and farmer groups and formal companies, CRS had to work with types of partner to provide support services at the formal levels. Specialist consultants were called in to facilitate the process at the export–importer levels, and particularly at the canner–retail level (see Figure 5).

The working relations that CRS had developed with the Sustainable Food Laboratory and the International Institute for Environment and Development were particularly important in the work with formal actors, providing facilitation staff and access to market research teams such as the Kent Business School. These agencies used their trade facilitation consultants to support the formal levels of facilitation, as shown in Figure 6 below.

In order to establish links between informal farmers and formal market buyers, the CRS team worked closely with Agricultural Commodity Supplies (ACOS, a large export/import agency

Figure 4: Core actors in the white pea bean value chain



Figure 5: Three levels of actor in the value chain

Chain level 1. Policy and regulatory environment



Chain level 2. Core chain actors

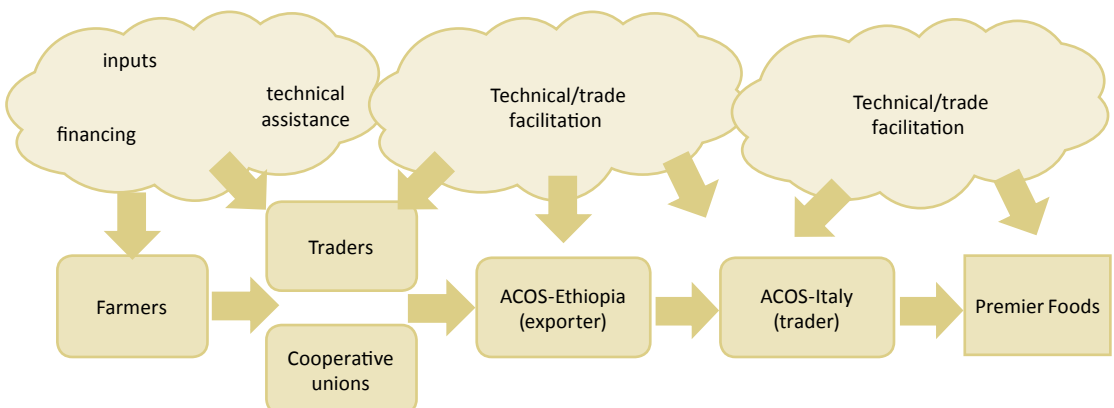


Chain level 3. Business development services



based in Ethiopia and Italy) and Premier Foods (a canning company in the UK). As part of its efforts to integrate business support services, CRS also coordinated with government researchers and extension workers, the Ethiopian Seed Enterprise and the micro-finance institute Metemamen, and worked on a baseline study with a consultant from the University of Addis Ababa.

Although some successful farmer cooperatives do offer sales services and access to inputs, the vast majority of farmers (over 70 per cent) sell their produce through independent trader networks. Therefore, the project prioritized working through trader networks in order to reach and benefit as many farmers as possible, and learn how trust and transparency can be improved in this value chain system.

Figure 6: CRS export market chain

6

Supply-side interventions

At the production end of the chain, CRS supported farmers through two long-term partners: the dioceses of Meki and Haraghe. Their field staff initially worked with 2,000 farmers, and aimed to reach 25,000 producers by the time the project was due to end in 2011.

Incomes among target farmers ranged from about US\$1,000 a year in the more commercial farming areas of the central Rift Valley to US\$300 per year in the poorer regions of Haraghe, with 10 to 20 per cent of annual income derived from bean production. The project team hoped to increase household incomes by US\$50–\$80 per annum by 2011. Farmers were divided into four target zones representing different types of producer groups, as shown in the data profiles below:

Table 1: Farm size and area planted to beans (ha)

Land size (ha)	Farm size	Area under beans
East Shewa (central)	3.90	0.76
Arsi (central)	3.42	0.50
West Haraghe	0.75	0.63
East Haraghe	0.41	0.29

Bean production methods vary according to the farmers' level of income. Those with more assets and farms of over two hectares buy seed and fertilizer, hire labor and either own or have access to animal power for production. Farmers with less than 1.5 hectares rarely use fertilizer or purchase bean seed, and mainly use family labor.

Most farmers sell their bean crop through traders rather than the government-supported farmer cooperatives and unions, because very few farmer unions have the capital to buy large amounts of grain. Before the introduction of the commodity exchange in the 2010 season, many smaller traders were financed through exporters.

Table 2: Breakdown of sales to different types of buyer

Per centage of crop sold	Central	Haraghe
Direct to consumers	26.7%	21%
To local traders	65.7%	61%
To farmer cooperative	7.6%	18%
Totals	100%	100%

“Most farmers sell their bean crop through traders rather than the government-supported farmer cooperatives and unions, because very few farmer unions have the capital to buy large amounts of grain.”

Promoting good agricultural practices

Although white pea beans are one of Ethiopia's major exports, there were no local training materials on good agricultural practices (GAP) that extension workers could use to promote better quality and higher yields when the project began.

The CRS team worked closely with agronomists from the Ethiopian Institute of Agricultural

Research (EIAR) on the production, publication and dissemination of training materials for farmer cooperatives and extension agents in the region. Production manuals and posters were translated into two local languages, and distributed to government extension workers and other NGOs promoting bean production in Ethiopia. Fostering these links with government institutions was a vital part of the long-term intervention process.



Field workers testing production and profitability calculators in the field, using ruggedized mini-laptops © Shaun Ferris

7

Working with a lead intermediary

In this project, the CRS facilitation team worked closely with ACOS, a rapidly emerging export company with strong trading relations in Europe. ACOS had invested substantial sums in a sophisticated crop-processing factory in the Rift Valley area, which enabled it to transform a relatively low-quality crop into a high-quality product for the export market. The company's experienced international marketing team was also working to build new market opportunities with formal canning and retail businesses in the UK.

A strong intermediary that can drive procurement, quality and efficiency is a crucial element of many value chains that successfully link informal market smallholders to modern markets. Large importing companies are rarely able to manage thousands of smallholders; they generally prefer to buy from large commercial farmers with standardized production systems and advanced logistics, forecast information and financial systems. One of the most challenging aspects of agricultural development projects is establishing links between thousands of atomised farmers and highly coordinated, high value markets like the UK canning industry. The value of intermediaries such as ACOS is that they can provide a major aggregation point and act as a viable business link to companies that import goods on an industrial scale.

CRS worked with ACOS to promote the quality of the Ethiopian beans at the UK factory level. Tests undertaken in the UK revealed that Ethiopian beans had excellent factory canning qualities: low moisture content, high canning



Cleaned, high quality white pea beans packed for export
© Shaun Ferris

processing levels and excellent 'mouth-feel'. They cost less than competitors' beans, and would also boost the buyers' corporate social responsibility credentials. In order to maintain demand, however, Ethiopian smallholders would need to compete with industrial producers in the USA, Canada and Argentina on cost, quality and volume.

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Working with a lead retailer

CRS attended meetings with buyers from Heinz and Premier Foods at the start of the project, but it soon became clear that Heinz was not interested in investing in Ethiopia. Having captured 80 per cent of the UK market for canned beans, the company was highly sensitive to any risk factors that could be associated with its brand, and was not keen to test new options. Heinz officials were concerned about the quality of Ethiopian beans, the reliability of supply, and about public perceptions of trade with a food-insecure country.

Premier Foods, on the other hand, came across as a more aggressive, risk-taking organization. Its buyers were keen to buy from Ethiopia, not only because of the opportunities it presented in terms of cost and volume, but also to develop an ethical trading story. The company was interested in bringing a certified bean into the UK market, and suggested a three-to-four year timeframe to achieve this goal.

Before this project, Premier Foods had been buying in small amounts of Ethiopian beans as a cheap filler for their large-volume catering packs. Their factory managers were used to the harder Ethiopian beans, and preferred them for catering cans because caterers want beans that can withstand long periods under a hot lamp without losing their texture. ACOS had larger ambitions for the Ethiopian beans: its intermediary wanted Premier to use them in their branded 400g shelf cans, which would significantly increase the amount they purchased.

“Leading companies are highly risk adverse and many are concerned about quality, supply continuity and public perceptions of trade with poor, food insecure countries.

New Business Models work to overcome these issues, to create opportunities for smallholders to break into higher value, markets which offer upgrading pathways.”

Shaun Ferris

9

Planned project interventions

The project team identified a number of intervention areas for its initial strategy to develop market opportunities and overcome constraints in the value chain. These are shown in Table 3 below.

Table 3: Chain-level intervention points and activities

Chain-wide level		
<ul style="list-style-type: none"> • Chain-wide value chain analysis • Review monitoring and evaluation • Develop business information tools • Support dialogue between link partners in the chain 		
Farmer level	Internal trade level	Formal buyer level
<ul style="list-style-type: none"> • Link farmers with researchers to learn more about bean technologies • Promote limited number of new varieties • Support seed management systems • Support bean seed loans • Improve agronomy <ul style="list-style-type: none"> – timely planting – plant in rows – weeding – fertilizer • Thresh on canvas • Mini-stores for grain aggregation • Collective marketing by farmer groups 	<ul style="list-style-type: none"> • Link farmer groups to specific traders • Promote regular trade meetings to forge better relations between farmers and traders • Identify a lead firm • Target supply • Support quality standards within the supply chain • Explore possibilities for upgrading local business development services (BDS) • Seek contract options between cooperatives and exporters and traders and exporters 	<ul style="list-style-type: none"> • Promote new, cheaper source of beans of equivalent quality • Provide information on potential for growth • Accelerate quality upgrades through single-variety supply chain • Develop corporate social responsibility narrative • Single product entry leading to multiple new products at retail end • Fair trade/fair deal labeling • Link to Africa marketplace



Ethiopian bean farmer, linking modern technology with modern markets © Don Seville

10

Project implementation

Good agricultural practices

At the farm level, CRS worked with researchers and farmers to increase levels of production. This was done by organizing farmers into marketing groups, and then providing them with a technology and training package that included guidance on:

- use of improved seed;
- planting rows at specific planting densities;
- timely weeding;
- harvesting and in-field drying;
- threshing on canvas, not the ground; and
- cleaning seed.

The training sessions were run by staff from partner organizations and government extension agents. The combination of technological support and training substantially increased yields and incomes when rains were favorable. Farmers who used the upgrading package increased their income from beans from US\$160 to \$230 on a typical half-hectare plot.

In addition to direct training for farmers, CRS also attempted to scale up the process by training 49 'enterprise trainers', who then trained other farmers to help boost productivity and sales of white pea beans. This should help provide longer-term training options for the future.

Provision of high-quality seed

There were no commercial bean seed companies in Ethiopia at the time of the project. New types of seed were developed and disseminated by the Ethiopian Institute of Agricultural Research (which developed basic

seed) and the Ethiopian Seed Enterprise (which multiplied this stock and distributed it to farmers). Unfortunately these agencies had insufficient funding to meet the sector's needs, despite their valiant efforts to do so.

Farmers without access to improved seed either replanted existing stock or bought grain from the local market to plant. They could obtain good results if they cleaned their grain and selected the best seed for the next year's crop, but many producers paid little attention to seed purity and continued to plant low-quality seed (see Figure 7).

CRS developed a number of strategies to increase the supply of high-quality seed. These included:

- working with researchers and the Ethiopian Seed Enterprise to access basic seed;
- giving improved seed to specific 'seed grower farmer groups' to multiply and sell to farmers in their area; and
- procuring seed from larger farmers who had received certified seed and cleaned and distributed it to smaller farmers.

This enabled CRS to supply 700 metric tons of new seed to approximately 15,000 farmers during the project. The seed was distributed in several ways. Most farmers received 20–50 kg of improved seed, which was enough to plant one to two acres. Others received 2–3 kg, which they planted on their farms for seed production and use in subsequent seasons. CRS also worked on a replacement process whereby farmers who received seed one year would return the equivalent amount at the end of the season to be distributed among other farmers.

Farmers mostly preferred the 20 kg seed packs, which enabled them to switch from their old

Figure 7: Levels of seed quality

Impure from farm



Quality from farm



Hand cleaned



Range of bean qualities being offered to the market, from uncleaned product to high-quality handpicked beans.

Source: Shaun Ferris

seed stock to the new variety in one go and reduced subsequent seed mixing. However, this was the more expensive approach and therefore the less sustainable method for the project.

Seed loans

Developing sustainable seed systems to support rain-fed smallholder agriculture is a major challenge. Maize is perhaps the only truly commercialized smallholder crop in Africa, but there are no reliable seed systems for most other crops. Few farmers have regular access to improved seed, and most retain and re-use their own stock for many cycles. To help strengthen this sector and support a more sustainable seed transfer process, CRS worked with the micro-finance institution Metamamen to obtain seed loans for farmers. Very few micro-finance institutions provide this kind of service because rain-fed agriculture is considered too risky. The loan product, called Eshet ('ready to harvest'), was piloted with farmers who used it to buy seed and then repaid the money at the end of the season. Although it was successful, local government agents asked for the trial to be stopped because they felt that the 18 per cent interest rate was unaffordable for farmers. CRS began working with seed enterprise groups and farmer unions to test alternative repayment methods.

Single-variety strategy

In 2009, Ethiopian bean exports relied on seed from an old variety called Mexican 142. Although this had proved a steady producer since its introduction in the early 1970s, researchers had since developed a number of superior varieties – many of them bred in Ethiopia by the Ethiopian Institute for Agricultural Research. These new varieties were higher yielding and more drought- and rust-resistant than Mexican 142 and their canning qualities were also as good, if not better. The best new varieties included Awash 1, Awash Melka, Argene and Chercher.

A visit to the Premier Foods factory in 2009 found that it had significantly increased the amount of beans procured from Ethiopia. Managers were more confident in the ACOS product, and retail clients were testing the beans in retail packs. The Co-op supermarket chain was mixing Ethiopian beans into their 400g retail packs and noting the source on the ingredients, which represented a significant promotion for Ethiopian beans as a quality product. In order to further distinguish these beans and avoid procurement for low-quality products, the project team suggested that the Awash Melka variety be developed as a single-variety supply chain for branded Premier Foods products.

In 2010, CRS and ACOS set out a plan to develop such a chain in order to significantly

upgrade the quality of beans coming into the factory in Ethiopia, and provide Premier Foods with a genuinely superior bean for a brand label. Factory tests showed Awash Melka to be the best of the new local varieties. It was particularly suitable for a single-variety supply chain because the beans look different from other common varieties, making it easy to see if the seed has been mixed. Awash Melka beans are larger, flatter and creamier in color than the smaller, rounder white seeds of Mexican and Awash 1.

The project team planned a factory-level test of two metric tons of Awash Melka in October 2010. If testing proved successful, the goal would be to shift Awash Melka into a major brand, such as Branston Beans, to capture the highest-value opportunity in the non-Heinz UK market.

There were many potential benefits to this strategy. First, Awash Melka had higher yields than Mexican 142, which meant that farmer incomes would rise due to increased production even if this variety sold for the same price as other beans. Second, the shift to a larger seed type would increase demand for improved seed. Finally, there would be less waste, as ACOS had previously bought 25 per cent more beans than it needed to allow for low-quality beans, which then had to be sifted out and sold elsewhere.

As part of their overall efforts to develop trade, UKAID¹ in the United Kingdom and USAID in the United States have encouraged greater collaboration between the development community and the larger corporate private sector. This strategy aims to build stronger and more sustainable trade and economic ties between investments in emerging market value chains and food corporations. In 2010 these development agencies announced initiatives to support increased procurement from African suppliers through the major retail companies.

According to TNS Market Research consultants, five companies control over 80 per cent of retail food sales in the UK. Linking into such high-

volume markets could represent a huge opportunity for small farmers, especially given the growing number of 'ethical' products on retailers' shelves.

The drawback is that in order to work with these markets, suppliers have to meet strict contractual quality and volume requirements, be compliant with food safety regulations, and be prepared to invest in marketing their goods. These requirements can make it very difficult for smallholders to enter the market, especially if they try to make direct links with the retailer. Therefore, the project team sought to go through an intermediary company, namely, ACOS.

Under the new trade linkage initiative, ACOS was asked to approach one of the leading UK retailers. The project team hired specialist consultants to work with managers from the UK retail sector and support the ACOS team during negotiations. The goal was to establish a regular supply of dry-packed and canned beans from Ethiopia, to be sold on retail shelves in the UK.

As expected, the buyer requirements were strict. ACOS would not only have to match the quality standards of existing products at a competitive price, but also, from the outset of the agreement, offer a range of pulse products that could not be sourced from Ethiopian bean farmers. In addition to this, the buyers were mainly interested in new or novel products. The ACOS team had some innovative ideas for pre-cooked products, but these would not be ready for the market on a large scale for several months. Finally, ACOS would be expected to pay for any marketing campaigns to promote the new product line within designated retail stores, and be prepared to offer discounts for promotional events.

ACOS had an experienced international marketing team that developed an impressive collection of well-packaged and attractively priced pulse products. Although their offer met the requirements and was well received, the retail buyers eventually decided to stay with their existing suppliers because these agreed to match the costings proposed by ACOS.

¹ From the Department for International Development.



Mono cropped bean production, in central rift valley, using best practise agronomy, with potential to produce 2.3 mt / ha
© Don Seville

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Getting the ethical trading story straight

There has been growing demand for products that show a clear ethical link between buyers and producers, especially product stories that associate 'fair trading relations' with smallholder producers. But the ethical market is complicated, and buyers in Europe have raised concerns about several aspects of trade with Africa: reliability of production, food safety issues, and consumers' perception that greedy companies are taking food out of food-insecure countries.

In order to address these important issues, CRS planned to gather more detailed information from farmer groups about production volumes, costs and profits. The team was confident that they would be able to show clear farmer benefits by introducing higher-yielding varieties and providing training on good agricultural practices, thereby creating a compelling ethical story that would help market the beans in the future.

CRS and ACOS also planned to pilot a more transparent pricing system, to ensure that everyone could understand the prices and pricing structure offered to traders and cooperative unions, and that the price would meet or exceed an annually calculated 'fair floor price' based on production costs and average living expenses. This system would enable them



Quality control lines at the ACOS export factory © Don Seville

to be confident in saying that white pea beans from Ethiopia were contributing to development, lifting families out of poverty, and modernizing the agricultural sector.

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Unexpected challenges and strategic developments

Although value chain interventions are applied within a business framework, markets are highly dynamic; they change over time and require constant monitoring. The information in Table 4

below shows how the intervention process changed during the project as a result of major drivers in the marketplace, including weather, economic conditions and trade decisions.

Table 4: Main strategies for white pea bean investments 2008–2011

	2008	2009	2010	2011
Main strategies for the year	<ul style="list-style-type: none"> • Update chain analysis • Identify chain partners • Engage with chain partners • Develop intervention plans • Strengthen direct trading relationships • Improve productivity and quality 	<ul style="list-style-type: none"> • Focus on single-variety supply chain with Awash Melka • Increase productivity • Improve grain quality • Create a traceable chain with a narrative to market 	<ul style="list-style-type: none"> • Keep investing in productivity and quality • Re-invest in Awash Melka 	<ul style="list-style-type: none"> • Shift away from Awash Melka due to losses, lack of support from buyers and commodity exchange • Refocus on better data collection and sharing through ICT data collection system, to increase buyer confidence and commitment
Specific Investments	<ul style="list-style-type: none"> • Links with partners in the chain • Seed development • Seed stores • Agreement with exporter and lead firm to create 'equitable trading system' • Invest in more productive seed • Train farmers on good agricultural practices (GAP) • Provide finance for a trained seed grower 	<ul style="list-style-type: none"> • Agreement with ACOS to buy Awash Melka • Geographic focus on two varieties for commercial viability • Regular trade meetings with ACOS to build transparency and trust • Review and promote clear standards / pricing • Training for farmers and traders 	<ul style="list-style-type: none"> • Provide loan for high-yield seed • Training on best practices • Trader/farmer/exporter meetings to increase trust and transparency • Seed stores to improve quality • Invest in farmer groups as seed producers • Study commodity exchange 	<ul style="list-style-type: none"> • ICT system to improve planning, information about supply, and measure impact • Continued investment in seed and training on best practices • Quality improvements • Trader/farmer meetings • Impact assessment

In 2009, the project helped ACOS purchase 2,000 metric tons of white pea beans through four partner traders in the Rift Valley and East and West Hararghe zones. According to a pre-season baseline survey and post-season follow-up from 2008, this enabled about 4,000 family farms to increase their profit by US\$164–\$227 per household (affecting about 24,000 family members).

Although the project got off to a great start, the 2009/2010 season was affected by several significant external challenges:

- **Drought:** after major drought cycle hit many growing regions, CRS shifted its main focus to distributing food aid in stricken areas. Yields of beans in the central Rift Valley dropped from an anticipated level of 2.3 mt/ha to 200–300 kg/ha, quality suffered, and some farmers were faced with total crop failure. While farming communities in the Rift Valley lost income and had significant food insecurity problems, aid was needed to address the life-threatening situation in the eastern part of the country. Meanwhile, it was a poor trade season for industry as prices rose and supplies to the UK market fell by more than 50 per cent. As buyers from the UK became increasingly concerned about the negative publicity surrounding food security, they reduced their buying and reconsidered any further purchases from Ethiopia – and from Africa in general. Although they understood that bean farmers could buy more locally available food if they sold their beans, they were not convinced that customers in the UK would accept this argument.
- **Personnel changes:** the Premier Foods buyer who had been so enthusiastic about sourcing beans from Ethiopia changed jobs, and the new bean buyer decided that Ethiopia was too high-risk, turning instead to the more conventional Canadian market. The factory managers still felt that Ethiopian beans were excellent quality, and the corporate social responsibility managers were drawn to the

ethical trade story – but the buyer held the purse strings and his opinion was the one that mattered most. The result was a 50 per cent fall in annual procurement from Ethiopia. Although producers were able to find other exporters, trading relations were weakened by this reduction and the canning factory's new buying policy.

- **Recession:** Premier Foods had just gone through a period of rapid expansion and acquisitions when the global financial crisis erupted in 2008, which meant that the company was servicing substantial debts as share values fell. This initially affected the bean project by shifting the focus from 'new source' to 'low risk', with an associated reduction in buying volumes. Then, in 2011, Premier Foods sold its canning operations to Princes Foods Ltd as part of a process of restructuring its operations and debts, further eroding the relationship the project team had cultivated with its buyers.
- **New trade policies:** in 2010, the Ethiopian government introduced policies to channel exports through a newly established commodity exchange. This resulted in a radical change in trading partnerships, as exporters were no longer allowed to buy directly from farmers through local traders. All beans for export had to be procured through the commodity exchange – effectively blocking any attempts to build direct trading relationships.

There had also been some setbacks with the strategy for the single-variety seed. Breeders had selected Awash Melka to meet demand from specific exporters, but seed was very scarce due to the drought in the main Awash Melka production area, and demand was fickle because ACOS was hesitant about buying the new variety after Premier Foods reduced its Ethiopian imports. As a result, farmers were paid less for Awash Melka grain than for Mexican 142. While the price difference may have been offset by the higher yields, farmers were disappointed

with the lower price and tended to revert to Mexican 142 and other similar-looking varieties in the following seasons. The commodity exchange also failed to differentiate between the larger Awash Melka grain and other varieties. Although there was a category for 'flat' beans, they sold at a discount rather than a premium rate, meaning that there was little incentive to maintain varietal purity. In view of these disappointing outcomes, CRS decided to promote Awash 1, another new and relatively high-yielding variety that looked more like Mexican 142 and could therefore be mixed with no loss in crop value.

“Introducing new technology is a complex process, after many years of development, high yielding varieties such as Awash Melka, must compete in the marketplace. Many good products fail in the marketplace.”

Shaun Ferris



Patchwork of small farms at harvest, showing traditional farming systems © Shaun Ferris

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Farmer benefits

Performance in the 2010 season

- 4,746 new farmers reached
- Improved varieties planted on 2,085 hectares
- Yields rose from 0.86 mt/ha to 1.73 mt/ha
- Total production 2,606mt
- Export value of US\$994,700
- Profit of approx. US\$79/ha (US\$194/acre) for farmers
- 50 enterprise trainers trained
- Four seed and grain storage facilities built

Although some consumers question the ethics of taking food out of a region where it is scarce, the preliminary project impact assessment shows that thousands of poor Ethiopian farmers did benefit from the trade in white pea beans.

For example, farming families earned roughly twice as much selling white pea beans for export than they would have obtained from sorghum, the second most widely grown crop in the area. With 81 per cent of Ethiopians living below the poverty line of \$2/day, and average annual incomes of US\$630, the money from beans represented a significant proportion of household incomes (15 to 20 per cent) and an essential means of buying cheaper food on the local market. Farmers were also keen to grow white pea beans because they are a short duration crop and generate income in a period when household finances are at their tightest.

Cash flow is an important factor in enabling poor households to survive, and the income from short-season crops helps reduce indebtedness at this time of year. When used as a rotation crop, white pea beans also help maintain soil fertility and thus contribute to the long-term sustainability of smallholder farms.

Another benefit that the project provided for participating farmers was access to new technologies, such as higher-yielding bean varieties, clean seed, and learning how to grow or process beans for quality. CRS worked with farmers and traders on clearer grading systems that helped improve relations between actors in the chain, and the project team also investigated various credit options and access to other resources for farmers.

From 2008 through 2011 CRS supplied approximately 15,000 Ethiopian farmers with 700 metric tons of bean seed, planted at approximately 100 kg/ha. This investment upgraded yields and quality across the production system. The combination of seed and training in good agricultural practices led to production increases of 50–100 per cent over baseline figures, a change from baseline productivity 0.7 mt/ha to 1.4 mt/ha. Disease pressure reduced in yields in 2011. Over the duration of the project, the cumulative production was estimated at approximately 6940 mt of white pea bean grain, with a cumulative wholesale market value of US\$2.5 million. These figures would have been higher, had it not been for the severe drought in 2009.

Off-farm employment

In addition to the thousands of farmers who benefited from the trade in white pea beans, several hundred workers found off-farm employment through this initiative. The beans purchased in 2009 were processed in a modern facility set up by ACOS-Ethiopia, which provided jobs for 350 people. The factory offered its predominantly female workforce various services, including daycare and a cafeteria.

“Although some consumers question the ethics of taking food out of a region where it is scarce, the preliminary project impact assessment shows that thousands of poor Ethiopian farmers did benefit from the trade in white pea beans.”

Table 5: Farmer production and sales events*

Year	Number of beneficiaries			Seeds (MT)	Area planted (ha)	Productivity Yield/ha (MT)	Estimated production (MT)	Value/ year
	Male	Female	Total					
2008	1760	240	2000	91	879	0.925	813	236250
2009	3560	440	4000	182	1757	0.68*	1195	115080
2010	4247	499	4746	216	2085	1.25	2606	994700
2011	4170	515	4685	213	2058	1.13	2326	737000
Total	13737	1694	15431	702	6779		6940	2083030

*(low yields due to drought)

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Lessons learned

The white pea bean value chain initiative was part of a larger project exploring new business models, and was intended to serve as a learning experience for all those involved. Project successes translated into real benefits for thousands of Ethiopian farmers, while setbacks reflected real losses. The longer-term and more widely applicable benefit of the exercise was that everyone learned more about how to build value chains that enable poor farmers to access high-value markets.

Some of the key lessons learned from the white pea bean value chain project are described below.



Women hand cleaning beans before shipment to market
© Shaun Ferris

The importance of the facilitator's role

The process of upgrading supply chains and developing new business models requires a facilitator: someone who is seen as a neutral player and has the experience, resources and networks to support the process. The facilitator's work often starts with a basic market survey and a series of meetings with key stakeholders to identify the main problems and develop intervention plans to address them.

Market chains are complex mechanisms, especially when they involve large formal companies, traders and thousands of small informal market producers. As it is unlikely that any single agency will have the expertise to deal with the needs of all the actors in a market chain, the facilitating agency will need access to experts who can support specific and specialized elements of the chain.

In this project, CRS sought advice from SFL, IIED and the Kent Business School, and hired specialist retail experts to support discussions with canning factories and retailers in the white pea bean value chain. This partnership led to the publication of a white paper entitled 'Linking Smallholder Ethiopian Bean Farmers to Formal Markets'. Discussing this paper was a useful way of building relationships with target retailers and showing that the product's provenance made a compelling story.

The dynamic nature of markets means that buying conditions can change quickly. In this case, project strategies and interventions had to be adjusted to respond to market volatility and the global economic downturn in the period between 2008 and 2012. One key lesson learned from this process was that timely responses are needed to ensure that project interventions remain relevant.

The facilitation role changed over the support period, as did relations with different actors in the chain. One of the main lessons for CRS was that value chain partners do not always maintain the same level of engagement, and that opportunities need to be acted upon sooner rather than later as they do not always last. Project staff need to be ready to adapt approaches and interventions to any changes in circumstances or key personnel in partner companies.

Opportunities and risks of working with a lead firm

One of the advantages of building links with a lead firm is that the decisions made by major market players can open up new prospects for thousands of suppliers. Their political weight can also influence investments and policy decisions by others in the market chain. But focusing on one lead firm can have unintended negative effects on other actors in the chain. For example, working with ACOS meant that this project gave less support to other export companies and emerging farmer cooperatives.

Furthermore, lead firms may be quick to pull out of trading relationships when problems arise. In this case, the lead retailer Premier Foods downgraded its commitment as a result of the global recession and changes in key personnel, and then sold its canning divisions to Princes Food in February 2011. We have yet to see exactly what effect this will have on trade with ACOS.

Developing the business case for smallholder supply

Working with major retail buyers is a complex process. Large companies have several tiers of management, and the Corporate Social Responsibility team may have different development aspirations and interests from those at the buying end of the company. Incentives for buyers are based on achieving value; their focus is on quality, continuity, sales and revenue. The supply chains that support major retailers are also complicated systems, with different levels of trading companies that aggregate product flow to the retail buyer. Depending on the product, there may be several high-volume trading companies that manage product flow and work on innovation with the retailers.

With this level of sophistication, it is not surprising that retail buyers tend to be very loyal to current suppliers who have proved their ability to provide the right quality and volume of goods at the right price. This makes it difficult for new suppliers to break into a market unless they have something rare or different to offer. Alternatively, it may mean that a company wishing to supply retail supermarkets with an existing product will need to collaborate with current suppliers to learn more about the retail supply process and win the confidence of the company's buyers.

This project experience shows that linking new intermediaries and unorganized farmers to formal markets is a complex process. There is often a reluctance to work with new suppliers, especially those from a 'new source' developing country. Success in this field requires not only patience and considerable investment, but also acceptance that it may take several attempts to break into this type of market, and strong

management to maintain business relations and any contracts that are agreed.

Development processes that attempt to bring farmers into international retail markets need investors with strong intermediaries to link up with the retail procurement process. New products are helpful, and specialist consultants with experience in the retail trade can align expectations on both sides of the deal. The lead supplier must be prepared to manage elements at several levels of the value chain, recognize that it takes time to build trust and confidence at each step and, most importantly, maintain clear and consistent communication with the retail buyer.

Retailers are interested in the idea of linking up with smallholders, and there is a growing element of ethical consumerism that supports this trend. But modern retail markets are both stringent and dynamic; to be successful, farmers need either highly professional cooperatives with retail experience, or strong intermediaries that can manage contracts with retailers. Engaging with these markets will always require a long-term strategy, and hold many potential pitfalls. It may be easier to work with local markets, or engage lower down a supply chain that feeds into modern markets.

“Retailers are interested in the idea of linking up with smallholders, and there is a growing element of ethical consumerism that supports this trend.”

Market volatility and the price of beans

Internal prices for Ethiopian beans remained within the same range from the late 1990s until the mid-2000s, hovering around US\$100 to \$150/mt. The situation changed dramatically in 2005, when white pea bean prices tripled in just a few years as a result of rising international commodity prices, local inflation and increased competition within the Ethiopian market. This very steep and rapid increase made it virtually impossible for farmers and exporters to establish contracts, as side-selling occurred at every level of the chain.

Although the introduction of the commodity exchange altered the structure of the market, bean prices continued to rise, reaching up to US\$500/mt in the 2010/2011 season. This raised the freight on board (FOB) price of Ethiopian beans in Djibouti port to over US\$600/mt, bringing them closer to the global export price set by Canadian beans. Ethiopian farmers earned more, but their beans were losing the price advantage that had initially attracted international buyers. In the longer term, price changes seem likely to be more in line with those on the international market.

Farmers' initial concerns about the new Ethiopian commodity exchange were allayed by the end of the first season as they saw their prices improve. Local traders across the country also benefited from the new system, which gave them greater freedom in the marketplace than the previous trading systems dominated by exporters.

Selecting a product strategy that meets broad market demand

The market did not respond well to the Awash Melka variety, despite its superior quality and yield. The project team accordingly abandoned the single-variety strategy and refocused on Awash 1, which has significantly higher yields than the traditional variety (although not the highest possible yields) and is similar enough in size, shape and color to be mixed with traditional beans.

This experience shows that market preferences can be unpredictable, and that the flexibility provided by Awash 1 was essential in mitigating market risks for vulnerable farmers.

Aggregating suppliers through trader networks

Although smallholder development projects tend to work through organized cooperatives, poor farmers in much of Africa and the developing world do not have access to effective cooperative organizations. Most Ethiopian bean farmers sell through informal trade channels because farmer cooperatives are not well managed and generally lack the capital to buy their produce.

The white pea bean project was interested in finding business models that would meet the needs of farmers. In the first two years the team attempted to work with farmers and traders who were linked to large exporters via informal networks, established through regular financial transactions between exporters and local traders. The team used these routine but informal networks to create farmer-trader registration systems, with the longer-term goal of developing mobile data collection systems to help the flow of information and facilitate access



Dr Dadi Legesse, CRS Agriculture team leader, using an Ipad and IformBuilder software to collect impact data © Shaun Ferris

to extension services, financing and technology. Over time, it was hoped that this would boost production and build stronger trading relations.

The idea was to use this model of farmer registration and links with formal buyers to develop a 'virtual cooperative' that would operate through mobile alerts and mobile money transfers. A similar process of profiling farmers and using social networks to link them up with buyers is being tested by companies such as Esoko, based in Ghana. This seemed to be a promising structure for Ethiopian bean farmers, but was effectively precluded by the introduction of the Ethiopian Commodity Exchange in 2010. The government's new policies put an end to direct financial links between farmers and traders, and meant that exporters could no longer buy directly from local traders.

Ongoing challenges

By the time it closed in late 2011, the project had generated valuable benefits for participating farmers and taught producers and the project team a great deal about how to deal with various setbacks. Nevertheless, a number of significant challenges still needed to be addressed, such as lack of seed, production statistics and strong farmer organizations, and new trading constraints.

Inadequate seed provision

Basic seed supply remains erratic and unpredictable, with government demand taking precedence over supply to NGOs and the farmer groups that they support. Problems with access to seed are exacerbated by the lack of credit for farmers to buy seed at the beginning of the growing season. In the meantime, the public sector struggles to inspect farmers' seed fields and conduct the lab analysis needed to formally certify bean seed.

The situation is not helped by the lack of clear price signals. Farmers were paid less for the better-quality Awash Melka than for the basic Mexican 142, and there was confusion over which variety the market truly preferred. It seems that while development initiatives like the Tropical Legumes project are introducing new varieties into the production system in order to increase diversity and resilience, international buyers are looking for a more uniform product.

The challenges that the bean seed sector raised for this project are fairly typical of those faced by most crop improvement programs in sub-Saharan Africa. More effort is needed to meet the needs of the market while providing sustainable solutions that enable farmers to access high-quality seed at affordable prices.

Lack of production statistics

Because the Premier Foods factory floor managers had been in post for more than 15 years, the NBM team was surprised by the high turnover in its buying staff, who were clearly much more mobile. It has been suggested that Ethiopia would be more attractive to buyers if more information was available on the Internet, as the lack of reliable seasonal production data at the national and farm level makes it a risky prospect. This lack of information is a problem for virtually all crops in sub-Saharan Africa, and needs to be addressed in order to support commercial activities.

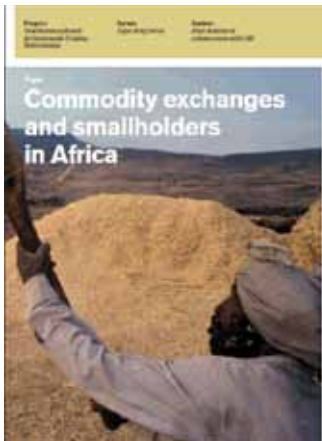
As the project ended, it was still unclear what volume of white pea beans were produced in Ethiopia, where they were produced, and how much was exported. Because actors in the industry do not meet on an annual basis to discuss commercial data, it is difficult to develop a national plan to support industry-wide investments.

Crop surveys tend to be conducted every three to five years by international agencies such as the United Nations Food and Agriculture Organization (FAO). This data focuses on overall production, and does not take account of how much is consumed by farming families and how much is sold commercially. The lack of timely and commercially oriented data makes it difficult for formal buyers to develop procurement and risk analysis of produce within developing countries, and tends to make them reluctant to invest in these areas.

The project team hoped that Ethiopia, along with other emerging countries, would consider improving its production and trade data systems, as reliable databases allow traders to observe and analyze the situation and make more

informed decisions. Lack of data is often a major challenge for emerging countries as they attempt to enter mainstream global markets, and is best addressed in a coordinated fashion.

New trading constraints



Actors in the supply chain and the project team were not fully prepared for the government's decision to include white pea beans in the mandatory commodity exchange. Although exporters were advised to buy procurement

seats in the exchange, most believed that beans would initially be exempt from the new rules, and the industry was ill-prepared to work with this change when it was first introduced.

Because exporters had to conduct all their transactions through the exchange from the 2010/2011 marketing season onwards, its most immediate and dramatic effect was to cut the direct business relationships between producers, local traders and exporters. This stifled the ability of larger exporters to finance smaller-scale traders and bring them into the procurement process for lead firms.

Farmers were generally pleased with the commodity exchange in the 2011/2012 season, as market prices for beans continued to climb. Exporters were less enamored of it, as they were unable to anticipate supply, and were not happy with the high prices and additional speculation from smaller traders who were now able to negotiate through a neutral exchange platform. Cutting off trading relationships between actors in the chain undermined the whole NBM project

approach to developing inclusive activities across the chain. Although coffee had gone through a similar process in 2009, the Ethiopian government had allowed certified coffee to operate through a special buying window that retained the integrity of trading relations, provided all trading was declared and taxed. It is not yet clear whether this will be possible for the bean trade.

In order to anticipate the longer-term effects of the exchange, the NBM project conducted a review of several other exchanges that have been established in East and Southern Africa in the past three to four years. This study found that most exchanges were sustained by funding from donors, and that they did not help poor smallholders. The Ethiopian exchange is somewhat different, in that it was established and operated by the government so that particular commodities can only be sold through this mechanism. Ethiopian government extension teams are closely monitoring prices throughout the chain in order to protect smallholders from its possible negative effects.

Working with unaffiliated farmers

Most producers in Ethiopia have found that cooperatives are not good outlets for their produce, so they continue to sell individually through independent trader networks. Although commodity exchange prices are high at the moment and traders are competing for produce, farmers are vulnerable to downturns and trader consolidation. Building trust, establishing clear standards and ensuring that this trading system is transparent remains a challenge. In order to enable producers to build better relations with buyers other than their local traders, some form of organization may be required to aggregate product and increase the number of producers who meet the new standards. This could be done using ICT systems to set up social networks that can be used to strengthen weak cooperatives or start up new 'virtual cooperatives'.

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Conclusions

This New Business Models project provided an opportunity to evaluate and upgrade production and trade options across the white pea bean value chain. Farmers learned more about their business partners and gained a better understanding of final market requirements, while traders and processors were made more aware of the production constraints facing producers, and the kind of information that they need.

The project reached approximately 15,000 bean farmers, delivering new technology (in the form of improved seed) and training on good agricultural practices to help improve their yields. As a result of these programs, production and income levels increased when rainfall was favorable. Attempts to forge new market links led to regular meetings between growers and traders, where they discussed ways of improving grain quality. This process was particularly useful in helping farmers learn how to produce and sell better-quality beans, and increase their incomes by cleaning, sorting, drying and storing their produce.

Facilitation dynamics

The project showed that value chain actors are keen to work together as long as there are clear incentives and an independent chain facilitator to help them do so. In this case, the facilitator was funded as part of measures to upgrade the supply chain; but this role will be more limited when finances are tight. This process revealed the current lack of coordination and mechanisms to support better working relations between different actors in the value chain.

CRS was able to play an effective facilitation role at several levels – with producers, farmer unions and local traders – as it already had long-term connections with white pea bean growers, knew the various players and was considered an independent, supportive and neutral agency. It had to forge new links with formal market actors, and relations with these actors changed over the course of the project as the original buyer left the company and perceptions of the market risks associated with trade in Ethiopia shifted.

Power relations between the different actors concerned are crucial to the dynamics of the supply chain. The decisions made by farmer groups had less influence on the chain than those made by the intermediary company or the buyer for the canning factory, whose decision to halve procurement had major ramifications throughout the chain. Therefore, it is important to ensure that buyers' needs are met in order to secure long-term growth.

While the interventions with farmers and traders were generally positive, building durable relationships along the chain will take more time and require greater investment in information gathering and sharing. It would also be desirable to work with more intermediary companies, and possibly diversify the crop base within a specific category, to include more types of beans or pulses.

One of the key lessons learned from this experience is that it takes considerable time to build trust within chains, and that value chain projects must be able to shift the emphasis of their investments and interventions as relationships wax and wane.

Seed systems

Efforts to upgrade the production process will only be sustainable if an effective seed delivery system is in place. More attention needs to be focused on building long-term, sustainable seed systems. Although CRS trained up to nine seed enterprise groups and built five storage units to support seed marketing, over half of these enterprises failed. The successful seed producer groups were based in the most commercial bean production areas, and were able to link up with the most commercial farmer unions. These unions had credit facilities for seed loans and enabled farmers to buy substantial quantities of grain at the end of the season for forward marketing.

The intervention with the Metamanan micro-finance institute was positive step in finding finance for seed loans. Although this initiative ended due to local government policies on interest rates, credit for inputs is critical to building successful and sustainable smallholder agriculture.

CRS aims to focus on seed system interventions in any subsequent bean projects, and to find more effective ways of strengthening private seed enterprises, government institutions and farmer-based seed production groups.

Building new data systems

This project shows that while individual relationships can open doors for farmers, they are time-consuming to build and hard to maintain. It may be more efficient, sustainable and replicable to establish trust on the basis of reliable data rather than relying on personal relationships.

In an attempt to address this challenge, CRS has designed a more systematic process for collecting data on production and marketing, so that farmers can use this information to determine how they invest in their farms.

CRS developed a prototype tool to help extension agents gather data on farm production

and profitability. It requires only occasional Internet access, and can be used to register farmer groups, analyze profitability, prepare business plans and production profiles, record asset transfers and training schedules, and log farm visits. This exercise is designed to be farmer-focused, providing information for farmers to use themselves.

Farmer groups should be able to use this type of system to collect and monitor their production and business performance on a seasonal basis. These data will also be stored in a project-level database so that they can be monitored by project managers, while prospective buyers will be able to look at annual reports showing synthesized production and cost data.

In addition to developing a business planning tool for farmer groups, CRS and the Sustainable Food Laboratory have developed an approach that uses electronic surveys to gather baseline data, monitor seasonal performance and measure impacts. This digital tool will enable field agents to collect routine data that will be analyzed by project staff rather than consultants or specialists, enabling the project team members to learn by analyzing the results themselves and using this information to make pragmatic improvements. This post-season performance data not only complements pre-season planning, but also makes it possible to track progress and report to company partners on key livelihood and production performance data.

The CRS team also plans to conduct routine national production surveys in order to improve seasonal production forecasting. If this data could be linked with statistical reporting by policy units that monitor food security and household production, it would be possible to develop a much clearer picture of the farming sector. Combining data on farm production and costs with information about national production and the commodity exchange would give potential buyers much better insight into the country's trade and investment potential, and could ultimately help build better international trade relations.

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