

The Coffee Initiative

Phase One Final Report
2008 to 2011



TECHNOSERVE
BUSINESS SOLUTIONS TO POVERTY



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In 2008, TechnoServe received a four-year, \$47-million grant from the Bill & Melinda Gates Foundation to increase the incomes of 182,000 smallholder coffee farmers in East Africa. With this support, the organization launched the largest and most ambitious project in its 40-year history: the Coffee Initiative. The purpose of this final report is to document grant-related activities, accomplishments and challenges during this first phase of the project.



KEY LEARNINGS

The Coffee Initiative has demonstrated a number of effective approaches to improving smallholder livelihoods through value chain interventions.

Important lessons were learned during the first phase of the project, and these insights have much to offer the private, public and non-profit sectors. As such, TechnoServe has prepared a companion piece—*The Coffee Initiative Lessons Learned Report*—which shares key learnings and best practices from the past four years, summarized below.

ACHIEVING IMPACT AT SCALE: CHALLENGES AND OPPORTUNITIES

- To achieve maximum impact, all areas of the value chain must be addressed. Improving coffee processing methods and creating market linkages was not enough; it was also necessary to focus on increasing production at the farm level and address cross-cutting issues like access to finance.
- The scale of the project allowed the Coffee Initiative to adopt a long-term view and make strategic investments early on that laid the foundation for later effectiveness.

- The project's scale attracted private sector investment, which helped to build sustainability and ensure that market demand drove the work.
- Scale also permitted the Coffee Initiative to initiate dialogues with government stakeholders and help inform national policy.

STRENGTHENING COOPERATIVE GOVERNANCE, TRANSPARENCY AND ACCOUNTABILITY

- Farmers' informed participation is essential for building cooperative accountability and transparency.
- Successful cooperatives elect leaders who are knowledgeable, committed and have positive ethical values.
- Transparency and accountability can be encouraged by building easy-to-use tools, systems and processes.

INCREASING THE PARTICIPATION OF WOMEN FARMERS

- It is essential to mainstream gender perspectives early and to sensitize community leaders and male farmers on the importance of women's participation.
- Do not view the household as a single monolithic unit and instead understand, implement and measure the impact on the individuals within the household.
- There is a need and an opportunity to introduce gender awareness among cooperatives.
- The gender composition of agricultural extension staff should reflect the gender make-up of those they seek to reach.

BUILDING HUMAN CAPACITY FOR INDUSTRY DEVELOPMENT

- Get out of the cities and recruit locally.
- Go beyond interviews -- observe candidates in trainings and hire the top performers.
- Invest in high-quality training and professional development, not only to support the project but to supply the industry with skilled talent.



THE RISE OF SPECIALTY COFFEE

As one of the world's most traded commodities, coffee and its cultivation play a crucial role in the livelihoods of approximately 25 million people.

Produced and exported from more than 50 countries, coffee is also one of the few commodity crops grown predominantly by smallholder farmers, many of whom struggle to survive at subsistence levels.

Each year, nearly eight million tons of coffee is consumed globally. That is equivalent to roughly seven billion cups. Unfortunately, farmers are often unable to take advantage of this business opportunity due to lack of "know how" and are unsuccessful in navigating the unpredictable and volatile market. Degraded soil, inadequate access to inputs and limited credit are added barriers that put sustainable livelihoods out of the reach of many smallholder coffee farmers.

The average Arabica coffee farmer earns less than \$2 per day for the coffee that she handpicks from trees on less than a hectare of land. To her, coffee represents school fees for her children, food, clean water, medicine and perhaps even a cow or, one day, a better home.

Today, consumption of coffee in traditional markets like Europe, North America and Japan is growing at less than two percent per year while consumption in Brazil, India and China is growing at an unprecedented annual rate of 10% to 20%. Within all these markets one segment that is enjoying strong growth is specialty coffee, as many consumers are trading up to higher quality beans and moving away from commercial-grade coffee.

Specialty coffees receive a premium in the global market. They can be clearly distinguished by their origin and feature exceptional characteristics, like superior taste or zero defects. The market for specialty coffee has grown to over \$8 billion in the United States¹ and strong growth continues in the single-cup brewing segment that is bringing specialty coffee into the home, with machine sales growing at over 10% per annum.²

Rising demand for specialty coffee has been accompanied by growing consumer interest in knowing where their coffee comes from and how it is grown. Consumers are increasingly concerned with the social, economic and environmental aspects of production, and many are willing to pay a premium not only for quality coffee, but for sustainably grown coffee as well. At the same time, international roasters and importers are making significant investments in their supply chains, which often means establishing stronger relationships with farmers and cooperatives at origin.

1. The Specialty Coffee Association of America, Specialty Coffee Facts and Figures, 2012

2. National Coffee Association of USA, 2012



EAST AFRICA'S COMPETITIVE ADVANTAGE

When it comes to growing premium coffee, very few places can match the ideal growing conditions that exist in East Africa's highlands.

Much like wine, the taste of coffee is greatly affected by soil, altitude, rainfall and various other climatic factors. For this reason, there are only certain places with suitable growing conditions, and production of the two main types of coffee (Arabica and Robusta) is dominated by a dozen countries located in the equatorial "coffee belt."

With ideal temperatures and rainfall patterns, as well as the very specific altitudes necessary for Arabica coffee to thrive, East Africa enjoys a distinct advantage and is known for producing some of the world's highest-quality coffee.

Coffee is vital to the economies of many developing nations, and this is especially true in East Africa. Each year, approximately 450,000 tons of Arabica coffee, valued at more than \$1 billion, departs from the ports of Dar Es Salaam, Djibouti and Mombasa to buyers around the world. It is traded on the Intercontinental Exchange (ICE), a futures market in New York that serves as the global benchmark price of Arabica coffee: the New York "C" price.

Not only do countries such as Ethiopia and Rwanda depend on coffee for a large share of their export earnings, but coffee also can have a tremendously positive impact on the lives of the region's three million smallholder coffee farming families, many of whom grow coffee as their only source of income. Yet despite the scale and positive reputation of East Africa's coffee industry, most of the region's coffee farmers have been unable to fully take advantage of these opportunities.

	Ethiopia	Kenya	Rwanda	Tanzania
Annual Arabica Production	367,000 MT	40,800 MT	19,000 MT	36,000 MT
Smallholder Farmers	1,200,000	600,000	400,000	450,000

USDA Foreign Agriculture Service, 2010/2011 Data





LAUNCHING THE COFFEE INITIATIVE

Recognizing the growing demand for specialty coffee and the constraints faced by farmers, TechnoServe established what would become its largest and most ambitious project to date.

In November 2007, the Bill & Melinda Gates Foundation awarded TechnoServe a four-year, \$47-million grant to formally launch the Coffee Initiative, a region-wide effort to boost the incomes of 182,000 smallholder coffee farmers through three specific and integrated strategies:

1. Establish a farmer training program, known as “Farm College,” that educates smallholder coffee farmers on sustainable agronomic practices to increase their yields;
2. Assist farmer cooperatives in establishing or upgrading low-cost rural coffee processing stations, known as “wet mills,” and provide them with business support to improve coffee quality; and
3. Strengthen the overall value chain to enhance the global competitiveness of East African specialty coffee.

During Phase One (2008 – 2011) of the Coffee Initiative, these strategic approaches – intensive farmer training, targeted wet mill interventions and value chain strengthening – have helped launch a transformative path for East Africa’s coffee sector while positively and directly impacting the lives of nearly 200,000 coffee farmers in the region.

Within TechnoServe, a team of more than 400 full-time staff was engaged in implementing Phase One of the Coffee Initiative. Experienced program managers supervised project and support staff in each of the four program countries, and a regional team helped design the systems and infrastructure that allowed for scaling. Throughout the project, special attention was given to building systems to overcome identified barriers, such as women’s participation, environmental degradation and limited access to finance while investments were made in management information systems to enable weekly performance monitoring.

The following report highlights results achieved over the first four years of the Coffee Initiative and seeks to demonstrate how specialty coffee can transform the lives of East Africa’s coffee-farming families, contribute to strong and growing industry demand, and help fuel the overall growth and development of the region.





Increasing Productivity Through Agronomy Training

Proper agricultural practices, such as the application of fertilizer and the pruning or rejuvenation of coffee trees, are essential to boosting productivity. However, farmer awareness and expertise of these practices was often limited, and the use of certain inputs was sometimes unheard of.

Because farming methods are typically communicated informally – passed down from one generation to the next or from neighbor to neighbor – these practices rarely keep pace with the latest innovations and technology. This is especially true for rural smallholder farmers in East Africa's coffee-producing areas, which suffer from consistently low yields that average about 300 kilograms of green coffee per hectare (by comparison, per hectare yields on training demonstration plots average 1,500 kilograms).

Many third- and fourth-generation farmers survive on the meager output of their small farms, while those living near urban centers often choose to leave and search for work in the region's growing cities instead.

Ann Njeri Kiura

Ann Njeri Kiura has been growing coffee for the past 25 years. A mother of four, she is a member of the Mirichi Farmers Cooperative Society located in Gathugu, a small village in Kenya's Central Province. Her parents, who were also coffee farmers, taught her everything she knows about farming.

For several years, Ann's coffee trees suffered from white stem borers – larvae that attack the trunk of coffee trees, drastically reducing yields and often killing younger trees. Stem borers are thought to be one of the most serious threats to coffee farms worldwide.

Growing coffee is Ann's primary source of income, and she has invested a significant amount of time and resources in caring for her farm. In an effort to reverse the destruction caused by the white stem borers, she would occasionally purchase inputs on credit from her cooperative: fertilizer to spur growth, copper to control leaf rust and Dursban, an insecticide used to prevent stem borers. However, she was unaware of specific methods to use these inputs and would apply them liberally to her 200 trees without measuring specific amounts. In 2010, Ann harvested only 516 kilograms of cherry coffee, which earned her approximately \$200. She estimates that she spent more than \$150 on inputs during that same year, eliminating any significant profit she would have received from her coffee.



Ann Njeri Kiura on her coffee farm



Coffee trees attacked by white stem borers in September 2010

In the middle of the season, Ann discovered the Coffee Initiative's Farm College program while attending a cooperative meeting where Business Advisors explained how simple and cost-effective agronomy techniques could help increase yields while also reducing input costs. Ann enthusiastically signed up and was soon elected as the "Focal Farmer" by other members of the group. She hosted every one of the monthly trainings led by Coffee Initiative Farmer Trainers Beatrice Karanja and Emma Ndambiri, and she began to see results on her farm almost immediately.

In 2012, Ann's 200 trees yielded 1,226 kilograms of cherry coffee, a 140% increase from her 2010 harvest. At the same time, she reduced the amount of money spent on inputs by half by cutting out the purchase of insecticides and reducing purchases of fungicides. Ann has also been able to control stem borers completely and has eliminated the leaf rust that was plaguing her trees. By adopting new agronomy techniques learned through the Farm College, such as mulching and compost, Ann estimates that her next harvest will surpass 2,300 kilograms that will result in her coffee profit jumping from \$50 in 2010 to over \$800 in 2013.

36,033

**FARMERS
TRAINED**

RESULTS

Trained 36,033 Smallholder Coffee Farmers

The Farm College training curriculum, which was developed in 2009 and continually updated, provided intensive agronomy training to 36,033 smallholder coffee farmers, exceeding an original target of 20,000 farmers. The curriculum was developed after conducting national soil and leaf surveys to determine the nutritional needs of coffee trees and agronomy baseline surveys established which agronomy practices were applied in each region.

The Farm College offered participants a practical, structured and locally relevant two-year training program, which ran monthly in the first year and bi-monthly in the second year. Locally recruited Farmer Trainers, often the sons and daughters of coffee farmers, were each responsible for training 9 to 13 farmer groups of approximately 30 farmers. Aligned with the coffee crop cycle, monthly lessons included: mulching, weeding, pruning, rejuvenation, erosion control, shade management, composting, nutrition, integrated pest management, safe use of pesticides and record keeping. When applied, these techniques can revitalize a coffee farm and dramatically increase tree productivity.

Over the course of the project, which coincided with a dramatic rise in the global price for Arabica coffee, the Coffee Initiative team heard farmers explain how they had recently returned to caring for their coffee trees after decades of underinvestment or abandonment. Growing coffee became an attractive investment once again and after attending the first training they were hooked on the engaging training sessions.

Recognizing that the impact of these interventions required the participation of women, the Coffee Initiative introduced approaches to attract and retain women at training sessions. By the fourth year, 33% of all farmers trained were women.



“ The only things we knew before the Coffee Initiative were the basics of coffee planting. We never considered pruning or soil erosion control. ”

*Member Farmer
Kobakanya Cooperative
Rwanda*



“ The agronomy government official used to come and just tell us to do this and that, but the Coffee Initiative came all the way to the field and showed us how to do it. Now we know how to use the fertilizer. We know how and when to pick our berries from the coffee tree, and now we get more yields from the same tree. ”

*Member Farmer
Kinyaga Cooperative
Rwanda*

79%
BEST PRACTICE
ADOPTION RATE

42%
AVERAGE
YIELD INCREASE

130
FARMER TRAINERS
HIRED

Attained 79% Best Practice Adoption Rate

Of the more than 36,000 farmers trained, 79% adopted six or more of the 11 best practices, surpassing an original adoption target of 50%. Unsurprisingly, analysis showed that the higher a farmer's attendance rate, the more likely it is that he or she will adopt a best practice. With 91% of farmers adopting best practices, Rwanda led the region, followed by Kenya (85%) and Tanzania (53%).

Achieved 42% Average Increase in Yields

Due to the high level of best practice adoption, coffee yields increased 42% on average at the end of the project, when compared to control groups. These results far exceed an original region-wide target of 12% and were recently confirmed by an independent assessment, which found yield increases of up to 75% among some groups of Rwandan farmers trained during 2010 and 2011. (Read more about the independent assessment of the Farm College on page 17).

Established a Cadre of 130 Farmer Trainers

In order to reach a significant number of farmers across a broad geography, the Coffee Initiative established a network of 130 full-time Farmer Trainers hired directly from local coffee-farming communities. Some were lifelong coffee farmers, while others were the sons and daughters of coffee farmers. Today, these individuals continue to share their knowledge in their communities.

A special emphasis was placed on encouraging women to apply, and a female quota of at least 30% was set for each stage of the recruitment process. By the end of Phase One, women comprised 40% of all Farmer Trainers. After working with the Coffee Initiative, many of these individuals have returned to their family farms where their coffee incomes have soared as they implement the practices they taught. Almost a third of Farmer Trainers in Kenya are using this extra income to fund their further studies while a number provide contract training services for neighboring cooperatives and farmers. Each of these former Farmer Trainers through their respective roles are helping to increase the overall competitiveness of East Africa's coffee industry.

The Story of Fidelis Mapunda, Farmer Trainer

Fidelis Mapunda worked with the Coffee Initiative for two years until May 2012 as a Farmer Trainer in the Ruvuma region of south-western Tanzania. In this role, he provided monthly training on sustainable agronomy practices to 320 men and women farmers organized in eight farmer groups.

Like many other Farmer Trainers employed by the Coffee Initiative, Fidelis is a coffee farmer himself. He cares for his 700 trees and has adopted all of the best practices he taught, including rejuvenation methods to bring older trees back to life and make them more productive. Because of his hard work and determination, Fidelis has seen great yield improvements in 2012, with his coffee production more than doubling from the previous year. He expects an even higher production in 2013.

A father of two, Fidelis has made significant investments for his family; with this higher coffee income, he was able to build a new home and send his younger brother back to school.

Today, Fidelis continues to provide advice to his neighbors. Even farmers who did not originally join the Coffee Initiative's agronomy training program are now coming to him and benefiting from his expertise. "I can't take on any more jobs," explained Fidelis. "I'm too busy improving my farm and advising farmers who come to me for advice."

With support from the Coffee Initiative and the local research station operated by the Tanzania Coffee Research Institute, Fidelis recently set up a clonal garden on his farm which will soon produce a new hybrid coffee tree resistant to pests and diseases that he'll sell for a small fee to other farmers.



Fidelis Mapunda with his wife and daughter

“ Our Farmer Trainer continues to serve us, and the service he provides to the community is very important. Look at how great the coffee trees look. All of this is due to Fidelis. ”

*Zenobius Msuha
Tupendane Farmer Group
Tanzania*

Independently Assessing the Farm College in Rwanda

The Coffee Initiative commissioned an independent review of its impact estimates in Rwanda toward the end of Phase One.³ This research confirmed strong evidence of a positive impact of the Farm College on yield increases. The study of 15,700 farmers concluded that yield increases of 58% (Cohort 2010) and 76% (Cohort 2011) were achieved after one year of training – higher than Coffee Initiative reported measurements.

The assessment also found a positive and statistically significant association between attendance and best practice adoption. The higher a farmer's attendance rate, the more likely she will adopt a best practice. When surveyed, farmers perceived the practices that they acquired from the Farm College trainings were: composting, safe use of pesticides, pruning and mulching, and they considered mulching and nutrition to be most important for increasing yields.

The study also sought to uncover potential biases in the current M&E approach, such as the fact that Farmer Trainers themselves collected data on adoption rates and yields, which could have led to an over-stating of actual results. After testing this hypothesis by comparing data supplied by Farmer Trainers to data collected by an independent team of enumerators, the researchers did not find any evidence of over-estimation.

One of the most interesting findings from the study was the impact that monitoring had on farmer behavior. Because data collection activities led to frequent interaction between farmers and Coffee Initiative staff, bi-monthly monitoring led to a 12% to 15% attendance rate increase and a 7% increase in best practice adoption. Anecdotal evidence from focus groups and interviews confirm the fact that monitoring has an impact on how farmers experience of the program. "When the trainer comes to me, I know that he will ask to see my record book. It gives me a wakeup call to check on my farm," explained one farmer.

The impact of monitoring activities on attendance and best practice adoption raises interesting questions about how farmer training programs can leverage "the monitoring effect" to further improve project outcomes.



3. Independent Assessment of TechnoServe's Coffee Agronomy Training Program, Laterite Ltd. October 2012



Supporting the Establishment of Cooperative Wet Mills

East Africa has produced high-quality coffee for decades. However, with the exception of those in Kenya, most farmers traditionally processed their coffee on their farms using home-processing or sun-dried techniques. Because of this, they seldom realized the full value of their harvest.

While the specialty market does seek out small volumes of premium sun-dried coffees, such as Ethiopia's natural *Harrar* variety, the major opportunity for East African farmers lies in the growing demand for quality fully washed coffees, which are processed through a wet mill.

Also referred to as coffee washing stations, wet mills serve several different functions during the post-harvest processing phase. The wet mill is the place where cherry is pulped (the outer skin is removed) using a machine, the beans are fermented to break down a sticky mucilage layer, washed in water (thus prompting the description of "washed coffee") and then sorted and dried on raised tables under full sunlight for up to two weeks until they reach an ideal moisture level. Coffee is then transported from rural wet mills to towns where a dry mill removes a thin parchment layer using a hulling machine. This results in what is called green coffee, the final stage before export.

In East Africa, as in Latin America, coffee cooperatives own and operate their own wet mills, although private individuals or plantations also can own them. A typical wet mill will have a manager, who is appointed by the cooperative leadership and coached for a period by Coffee Initiative Business Advisors. The manager's role is to oversee the operation of the wet mill and ensure that coffee is being processed as efficiently as possible. There are several more roles, including a quality control manager, a machine operator, an accountant, security guards and casual laborers. Throughout rural East Africa, wet mills become hubs of activity during harvest seasons.

The need for wet mills, and their potential to increase farmer incomes, is widely recognized by industry, governments and international donors. For example, Rwanda's National Coffee Strategy targets the specialty coffee sector and calls for significant investments in wet mills. However, despite favorable economics in East Africa, few wet mills were established by the private sector or farmer cooperatives, and only in Rwanda and Tanzania with the support of donors, because of lack of confidence in the new specialty market and policy uncertainty.

Moreover, the wet mill itself is not a panacea to increase farmer incomes. It is, after all, a business and it must generate profit to succeed. Yet in many cases, new wet mills launched with donor support failed to deliver higher prices to farmers because of overly burdensome capital investment loans, ballooning costs, poor governance and lack of farmer buy-in.

Reviving a Rural Cooperative: The Story of Kapkulumben

Over the course of Phase One, the Coffee Initiative supported a total of 285 wet mill clients, half of which already existed. Some were operating below capacity and on the brink of collapse, while others had gone bankrupt entirely. Seeking to revive these rural businesses, the Coffee Initiative designed a special series of interventions and trainings for these “turnaround” clients that were implemented over a two-year period. One of these clients was the Kapkulumben Farmers Cooperative Society. Located in the Kapkoros area of Western Kenya, Kapkulumben is situated at 1,900 meters in an environment that is exceedingly suitable for coffee growing.

For most of the past 40 years, farmers in Kapkoros were members of a larger cooperative that was known for producing low-quality coffee and maintained a wet mill that was over 20 kilometers away. Members grew tired of walking these long distances. And, beginning in 1996, a group of 151 farmers resolved to contribute 100 kilograms of cherry each towards the construction of a new wet mill in their own village, which was completed in 2000. However, for farmers in Kapkoros, the construction of a new wet mill would be the easiest of their challenges, as they were still part of a cooperative that was suffering from weak management. Over the next ten years, just about everything went wrong.

Their local wet mill began to face serious quality and labor challenges as none of its staff had been trained in coffee processing. Although farmers delivered high-quality cherry, the quality potential was drastically reduced as quality control practices were not followed. These low-quality coffees fetched low prices in the market and delivered low payments to farmers. With diminishing incomes and increasing apathy, farmers in Kapkoros were reluctant to invest in their farms, threatening the new wet mill’s ability to operate.

By now, the cooperative was heavily in debt and its books had not been audited for several years. Farmers were dissatisfied with the premiums they were receiving and the management practices they observed. Signs of failure could be seen throughout the community: many children dropped out of school because their parents could no longer afford fees; several individuals experienced serious health care challenges; food became even more scarce; and some farmers abandoned coffee production altogether, uprooting coffee trees and planting sugar cane, maize and beans that they could instead sell.

In 2005, the farmers in Kapkoros were convinced that they could change their situation and started to lobby for autonomy so they could manage their own affairs as a separate cooperative. After a long journey to autonomy, their registration was granted by the Ministry of Cooperatives in 2009, and the new cooperative – named Kapkulumben – began the arduous task of setting up an infrastructure and systems to prepare for the next year’s harvest.

Kapkulumben began working with the Coffee Initiative in late 2009. A team of Coffee Initiative Business Advisors first engaged the cooperative’s leadership, staff and farmers in an open and participatory discussion, and identified several challenges regarding production, processing, marketing and management.

Because regular machine breakdowns had resulted in several tons of cherry rotting and the loss of tens of thousands of dollars, the first order of business was to upgrade the wet mill infrastructure. Yet, with no savings and credit history, Kapkulumben had a very difficult time seeking finance to purchase new equipment. The Coffee Initiative assisted Kapkulumben in developing a business plan, drafting necessary documentation for financing, negotiating a favorable lending rate with SMEP Microfinance (a local microfinance bank) and procuring eco-pulping equipment at a cost of \$18,500.

Coffee Initiative Business Advisors then conducted a series of trainings on all aspects of coffee processing and helped Kapkulumben set up accounting systems and financial controls. Business Advisors also trained management committees and staff on aspects of cooperative management, with a bias toward record-keeping, environmental sustainability and occupational health and safety practices.

With farmers' newfound confidence in the cooperative's management, Kapkulumben saw its membership increase by 65% within two years. Membership grew from 650 members in 2009 to 1,075 members in 2011, with female membership growing by 105%, from 119 to 244. As a result, cherry production increased from 220 metric tons in 2009 to 485 metric tons in 2011, representing a 115% jump. In addition to processing more coffee, Kapkulumben was processing *better* coffee.

All of these improvements, and higher market prices, contributed to Kapkulumben's revenue growing from \$173,000 in 2009 to \$443,000 in 2011, while the share of revenue paid to farmers increased from 72% to 78%. With retained profits of \$82,000 the cooperative built two additional wet mills: Sugut Wet Mill in 2011 and Kapias Wet Mill in 2012. All three of the cooperative's wet mills use modern eco-pulper technology. And in order to ensure maximum utilization of all their wet mills, Kapkulumben sold more than 100,000 coffee seedlings and 32 metric tons of fertilizer to farmers to boost productivity and increase coffee quality.

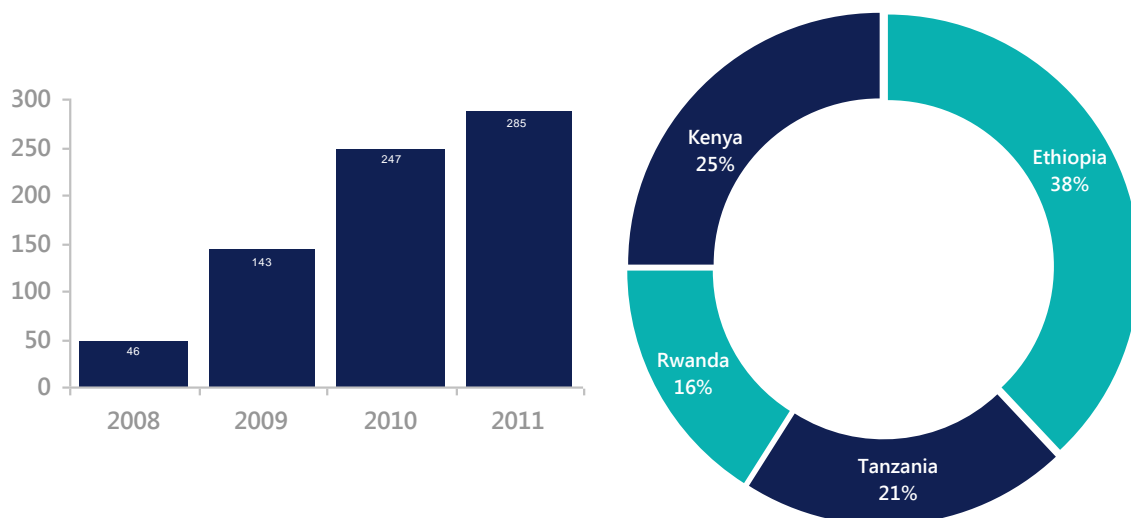


RESULTS

Installed and Supported 285 Wet Mills

Working hand-in-hand with farmer cooperatives, the Coffee Initiative supported farmers to install 145 new wet mills and improve 140 existing wet mills between 2008 and 2011 throughout all four program countries. These wet mills in turn supported 195,408 coffee farmers – exceeding an original target of 182,000 – and created more than 1,500 new rural jobs during the three- to four-month harvest season.

Wet Mills Installed or Improved
(Cumulative)



In addition to monitoring the total number of wet mills established, it was important to understand how productive and efficient they were. To do this, the Coffee Initiative tracked each client's capacity utilization rate based on the amount of cherry delivered each season. Capacity utilization is a critical aspect of operating a wet mill; in general, if it falls below 30%, fixed costs can become prohibitive and the cooperative runs the risk of losing money. In year four, 75% of client wet mills operated at or above 30% capacity.

As part of the wet mill program, initial efforts focused on helping cooperatives become more competitive, more profit-oriented and more professional. This included assisting cooperative leaders in developing business plans; procuring and operating wet mill equipment; strengthening management practices; and enhancing accounting, inventory, labor and quality control systems.

285
WET MILLS
SUPPORTED

Over the course of the project, the team also introduced new capacity building activities to improve governance, transparency and accountability. However, transparent governance was the greatest challenge to create sustainable cooperative businesses; over the course of the project, several client wet mills suffered from corruption challenges, even leading to imprisonment of cooperative leaders in one case in Rwanda. Introducing systems and controls including transparency sheets and independent audits has helped raise many corruption issues to the surface and forced the various stakeholders to address such corrupt practices.

Produced More than 9,000 Tons Annually of High-Quality Green Coffee

By the end of Phase One, the 285 client wet mill clients produced a total of 9,077 metric tons of green coffee annually – equivalent to 500 shipping containers with an export value of more than \$50 million.

The total region-wide coffee volume was 10% below the original target of 10,000 metric tons in the final year of the project due to shortfalls in meeting country-specific volume targets in Ethiopia and Tanzania. In Ethiopia, a low crop year, working capital shortages and the decision to cancel installation of new wet mills in the final year resulted in only 67% of targeted volume being produced.⁴

In Tanzania, some wet mill clients were unable to pay competitive advances to acquire cherry from farmers in year four because their coffee was pre-sold at fixed prices or valued by credit providers early in the harvest season when prices were at their lowest. This resulted in the project achieving 70% of the Tanzania targeted volume in year four. One of the key learnings from these challenges was the need for simple price risk management solutions to manage market volatility risk, as further discussed in the accompanying *Coffee Initiative Lessons Learned Report*.

Increased Export Price and Farm-Gate Price

Because specialty coffee attracts a premium above commodity-grade New York “C” prices, the primary means through which the Coffee Initiative sought to increase both farm-gate and export prices was by maintaining a persistent focus on improving coffee quality at wet mills. Efforts to lower wet mill operating costs also allowed farmers to capture a greater share of the export price. By the end of Phase One, wet mills had achieved an average export price increase of \$0.96 per kilogram of green coffee over the benchmark commodity price, exceeding an original target of \$0.30 per

9,077
METRIC TONS OF
COFFEE PRODUCED
ANNUALLY

\$0.96/kg
EXPORT
INCREASE

4. See Appendix A 'Phase 1 revision of wet mill installations'



kilogram. These export price premiums flowed down to individual farmers who delivered cherry to client wet mills; farmers received average farm-gate price increases of \$0.50 per kilogram of green coffee over the benchmark local commodity price, meeting an original target of \$0.50 per kilogram.

Mobilized \$38 Million in Financing

A significant amount of capital is needed to establish and operate a wet mill. Even a small wet mill requires an initial capital investment of more than \$10,000 for site construction, machinery, drying tables and other installation costs. Additionally, because cooperatively owned wet mills typically pay farmers for cherry up front (with a “second payment” or “dividend” paid at the end of the season), working capital is required from the start of harvesting until six to nine months later when the coffee is exported.

In order to address the unique financial needs and risk profiles of cooperatives, the Coffee Initiative established partnerships with local and regional banks and trained more than 50 analysts from banks’ credit and underwriting departments. These trainings consisted of one-day seminars on subjects including coffee wet mill economics, market volatility, price risk management strategies and stock monitoring; and included the use of a board game to simulate the effects of market volatility on wet mill businesses. Rather than provide subsidies or guarantees, the Coffee Initiative convinced lenders in Tanzania and Rwanda to provide credit with a commitment that the Coffee Initiative would provide advisory services to the borrowers for the first three years of capital loan repayment. The Coffee Initiative also pioneered a new working capital financing model between cooperatives and private buyers. (Read more about the Coffee Service Provider Model on page 35).

The Coffee Initiative mobilized financing totaling \$2.5 million for wet mill capital expenditures – slightly above an original target of \$2.2 million – and \$36 million cumulatively for wet mill working capital requirements – also slightly above an original target of \$30 million. By the end of Phase One, 100% of client wet mills that needed financing had access to financial services and had paid all working capital loan repayments. In certain cases, particularly in Ethiopia, where banks required excessive collateral, the Coffee Initiative partnered with the IFC and equipment suppliers to construct loan guarantee and risk-sharing facilities to enable access to necessary financing. No draws to the guarantees have been made as borrowers are meeting the terms of the loan and are expected to repay in full.

"The Best Coffee in Africa"

Duromina, which means "to improve their lives" in the Afan Oromo language, is a coffee cooperative located in Boto, a small village in the Jimma Zone of southwestern Ethiopia. In this area of approximately 10,000 people, small coffee farms scatter the fertile hillsides and are shaded by dense canopies of indigenous trees.

With farm altitudes between 1,900 to 2,200 meters, coffee has grown here for generations. However, it has always been processed using the dry, or natural, method. Not much attention was ever given to quality control, resulting in low farm-gate prices and coffee incomes that never amounted to much.



This all changed in 2010 when 113 coffee farmers banded together to form Duromina Cooperative. As their name suggests, their goal was simple: to improve their lives. With technical support and business advice from the Coffee Initiative, the members constructed a wet mill and started processing fully washed coffee for the first time.

This was the start of Duromina's quick and impressive ascent toward success. Two years later, on February 18, 2012, an international panel of professional judges would vote Duromina to be the best coffee in Africa, giving it a cupping score of 91.92 out of 100 (few coffees in the world achieve a

score over 90). After sampling a cup, buyers described it as the best coffee they have ever tasted: "sweet with rich acidity" and a "delicate and well-structured cup." Stumptown Coffee Roasters described Duromina's coffee as an "extremely complex yet clean cup that flaunts notes of lemon, cinnamon, sweet hops, ginger and nectarine accented by jasmine."

However, for members of Duromina it was about much more than a top cupping score. For them, winning the 2012 Taste of Harvest – the leading regional cupping competition organized by the African Fine Coffees Association – represented all that the community has achieved in just two short years.

The village of Boto, which is 45 minutes from the nearest paved road, used to be inaccessible during the rainy season. Heavy rains would cause nearby rivers to swell beyond their banks, preventing access to markets and a clinic in a neighboring village.

"So many people were injured falling into the river when attempting to cross during heavy rain," explained Nizamu Abamecha, Duromina's chairman. "We could not benefit from many government services because of the river, and some pregnant women even died because they could not reach the clinic."



Duromina’s top-quality coffee resulted in \$608,083 in sales that year, with four major international roasters purchasing 71 metric tons of green coffee through direct trade relationships and paying an average of \$3.68 per pound, a \$1.45 premium over the New York “C” price. Duromina’s coffee was sold to consumers for up to \$15 per pound in some U.S. retail outlets.

Because of this, Duromina was able to pay off their entire investment loan for their wet mill in one year, instead of the planned four years. For the cooperative’s 133 members, this meant earnings of \$0.62 per kilogram of cherry delivered, 50% higher than what they received from local traders.

One of the first things Duromina’s members did with their new income was to collectively invest in building a bridge for the community. They also invested in their homes: tin roofs, furniture and solar power. Nizamu Abamecha expects that they will complete installation of electricity in Boto within a few months.

Farmers have also invested in their children’s future. Prior to establishing the cooperative, the primary school stopped at grade six. It has now been expanded to grade eight, and families can now afford to send their children to secondary school in nearby Agaro and even beyond for university.



DUROMINA COFFEE COOPERATIVE

LOCATION

7°45’24.18”N, 36°30’47.34”E

ELEVATION

1,900 to 2,200 meters

ANNUAL REVENUE

\$608,083

ANNUAL PRODUCTION

71,638 kilograms

“ Coffee from Jimma Zone has historically been seen as inferior quality to coffee from other parts of Ethiopia. Winning the Taste of Harvest has changed that view, and Jimma coffees have finally gotten the recognition they deserve. ”

Ansha Yassin

Senior Business Advisor

The Coffee Initiative



35
LOW-COST
CUPPING LABS

225
PEOPLE TRAINED
IN COFFEE CUPPING

Established 35 Cupping Labs and Provided Cupping Training to 225 Individuals

Quality is determined not only by visual inspection of the coffee bean, but also by “cupping.” In the world of coffee, the practice of cupping is ubiquitous. It describes the unique process of evaluating samples of roasted coffee, providing a numerical score based on standard industry guidelines that judge attributes like flavor, fragrance, acidity, body and sweetness. This cupping score becomes critically important to specialty coffee buyers. However, without the ability to discern quality, farmers receive no feedback or incentive to improve and specialty-grade coffee is often aggregated into larger lots where price premiums are lost.

To enable a virtuous cycle of higher quality being rewarded with higher incomes, widespread availability of cupping expertise was required. By the end of Phase One, the Coffee Initiative used 35 low-cost rural cupping labs to train farmers and cooperative leaders on quality assessment and enabled 225 women and men to complete a comprehensive cupping program. These trainings provided an important frame of reference, helped them speak a common language describing coffee, better understand the causes of common defects and clarified the ways in which international buyers make purchasing decisions.



Mastering the World of Coffee

Bahati Mlwilo was an employee of the Coffee Initiative in Tanzania for more than two years. When recruited by the Coffee Initiative, Bahati had just finished studying at Sokoine University of Agriculture. After a brief stint as an intern, she joined the team full-time in 2009 and instantly became immersed in efforts to improve coffee quality at both the farm and cooperative level. As a coffee quality advisor, Bahati was responsible for “cupping” client coffee to determine its quality. In addition to cupping samples herself, Bahati played an essential role in training cooperative leaders and farmers how to cup their own coffee.



In 2011, Bahati discovered an advertisement for a master’s degree program in Coffee Economics and Science offered by illycaffè, the Italy-based multinational coffee company, in conjunction with the University of Udine in Trieste, Italy. The five-month program aims to offer in-depth multidisciplinary preparation to individuals interested in working in the world of coffee.

A few months later, Bahati resigned from the Coffee Initiative and was on a plane to Italy. She was one of only seven individuals from around the world selected for a full scholarship to attend the program. Based at illycaffè corporate

headquarters, the program relies on university professors and industry practitioners to educate a small group of promising coffee professionals from around the world. When Bahati participated in 2012, there were a total of 20 students, only two others from Africa.

The course demanded 400 hours of classroom work and covered a wide range of topics, including advanced agronomy, processing techniques, coffee genetics, and marketing and financial aspects of the industry. Bahati’s final thesis focused on ways in which smallholder farmers can benefit from direct trade, an increasingly popular purchasing model in which roasters buy directly from the farmers or cooperatives.

After the program, Bahati returned to Tanzania with the knowledge she gained in Italy and served as a sustainability advisor to a multinational coffee trading company. Subsequently, in November 2012, her passion for research led her to accept a position at the Tanzania Coffee Research Institute (TaCRI), where she leads cupping and provides feedback and analysis on new coffee varieties from around the country. She describes it as “a perfect job.”

From Coffee Initiative intern with no prior coffee experience to professional cupper, Bahati is one of several individuals who, following their time with the Coffee Initiative, are now stepping into leadership roles to build East Africa’s coffee industry. She is excited to continue her journey and apply her research and cupping skills to help Tanzania’s smallholder coffee farmers and their coffees compete in the global market.

Encouraged Wet Mill Sustainability Practices

With the Coffee Initiative's focus on helping cooperatives establish and run profitable wet mills, it was also important to ensure these productivity and quality gains do not come at the expense of environmental protection and social responsibility. Therefore, during the second year of the program, the Coffee Initiative introduced a set of sustainability standards and started to conduct annual sustainability audits.

The standards required each cooperative to comply with internationally accepted environmental, social and safety-related best practices across five areas: social responsibility and ethics, occupational health and safety, environmental responsibility, economic transparency, and production and farm management. The standards also place a unique emphasis on price transparency at the farmer level. All 285 wet mill clients received sustainability training and technical support for a period of two years. During this time, annual audits identified areas for improvement and tracked compliance against the best practices.

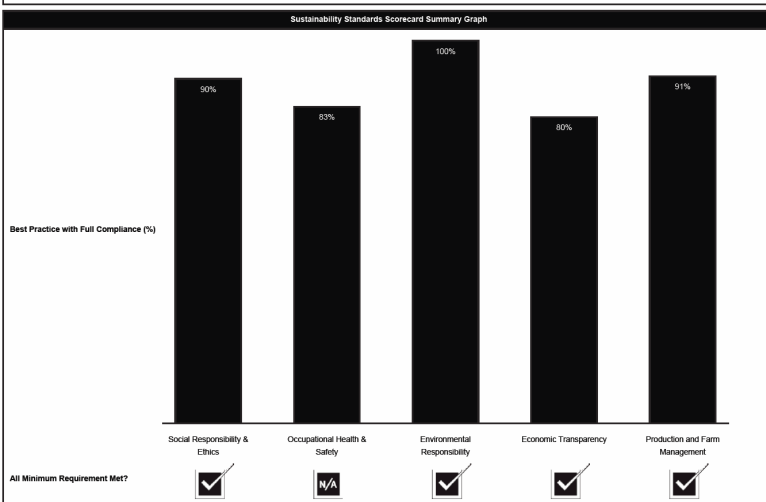
Sustainability standards are not a certification program, but are designed to help cooperatives understand the importance of sustainability standards for their business and develop a path for achieving best practices. If a client has access to a certified-coffee market and wishes to pursue certification, the Coffee Initiative's sustainability standards will better prepare them. Over the course of Phase One, more than 70 wet mill clients obtained one or more external sustainability certifications, the most popular of which was Starbucks C.A.F.E. Practices.

The final, but perhaps most important benefit of sustainability standards, has been improved business performance and operating efficiency. The Coffee Initiative often observed that clients who achieved the highest sustainability ratings tend to have the lowest operating costs and highest-quality coffee.


Rather than viewing the sustainability standards as an additional burden, cooperatives have embraced the standards and see their performance against the standards as a source of pride. By looking beyond a cooperative's revenue, wet mill utilization rates and cupping scores, sustainability standards are a way of ensuring that wet mills have a broader impact in their communities.

Koakagi (Rwanda)		2011 Sustainability Standards Scorecard Sheet	
			
Client ID	N/A	<div><p>All Minimum Requirements of the Standards have been met, And the Cooperative has reached 100% compliance with 80% or more of the standards in each of the sustainability categories</p><p>GOLD SUSTAINABILITY STANDARD</p></div>	
Auditor	Valence Shumbusho		
Audit Date	June 07, 2011		
Report Date	December 21, 2011		

Sustainability Standards Scorecard Summary		
Standard Categories	All Minimum Requirements Met?	Best Practice with Full Compliance (%)
Social Responsibility & Ethics	YES	90%
Occupational Health & Safety	N/A	83%
Environmental Responsibility	YES	100%
Economic Transparency	YES	80%
Production and Farm Management	YES	91%



Annual "Sustainability Scorecards" rank client performance against a set of minimum requirements and best practices.

Koakagi (Rwanda)		2011 Sustainability Standards Scorecard Sheet	
Client ID	N/A		
Auditor	Valence Shumbusho		
Audit Date	June 07, 2011		
Report Date	December 21, 2011		
Sustainability Standards Scorecard Details			
ID	Standard	Type	Compliance
SRE Social Responsibility & Ethics			
SRE13	Access to Management and Workplace Grievances	Best Practice	100%
SRE9	Earnings Records	Best Practice	100%
SRE10	Equal Pay for Equal Work	Best Practice	100%
SRE7	HR Policy	Best Practice	100%
SRE11	Legally Mandated benefits	Best Practice	100%
SRE4	Minimum Wage	Minimum Requirement	PASS
SRE0	No Child Labour	Minimum Requirement	PASS
SRE3	No Discrimination / Equality of Treatment	Minimum Requirement	PASS
SRE1	No Forced Labour	Minimum Requirement	PASS
SRE5	Overtime	Best Practice	80%
SRE9	Regular Payment	Best Practice	100%
SRE14	Right to Organize and Collective Bargaining	Best Practice	100%
SRE5	Working Hours	Best Practice	80%
SRE12	Written Contracts	Best Practice	100%
OHS Occupational Health & Safety			
OHS1	Occupational Health and Safety Policy	Best Practice	100%
OHS2	Annual Health and Safety Risk Assessment	Best Practice	100%
OHS3	Occupational Health and Safety Training	Best Practice	100%
OHS4	Medical Emergency Plan and First Aid Training	Best Practice	0%
OHS5	Safety Meetings	Best Practice	100%
OHS6	Work Place Hazards	Best Practice	100%
OHS7	Access to Sanitary Facilities	Best Practice	100%
OHS8	Access to Potable Water	Best Practice	100%
OHS9	Personal Protective Equipment	Best Practice	0%
OHS10	First Aid Kit	Best Practice	100%
OHS11	Pregnant Women, Conditional Work	Best Practice	100%
OHS12	Storage of Agrochemicals	Best Practice	100%
ER Environmental Responsibility			
ER0	Conservation of Natural Resources	Best Practice	100%
ER2	Environmental Practices Policy	Best Practice	100%
ER5	Reducing Water Consumption	Best Practice	100%
ER7	Soil Erosion Control	Best Practice	100%
ER10	Solid Waste Management	Best Practice	100%
ER6	Tracking Energy Consumption	Best Practice	100%
ER4	Tracking Water Consumption	Best Practice	100%
ER3	Waste Management - Coffee Pulp	Best Practice	100%
ER1	Waste Water Management	Minimum Requirement	PASS
ER8	Water Body Protection	Best Practice	100%
ET Economic Transparency			
ET8	Annual Budgets	Best Practice	100%
ET4	Approved Accounting / Bookkeeping System	Best Practice	100%
ET5	Coffee Sales Documentation	Best Practice	100%
ET7	External Audits	Best Practice	0%
ET3	Financial Transparency Sheet	Minimum Requirement	PASS
ET6	Loan Documentation	Best Practice	100%
ET2	Membership Fees and Shares Docs	Minimum Requirement	PASS
ET1	Record of Coffee Delivery and/or Payment Docs	Minimum Requirement	PASS
PFMS Production and Farm Management			
PFMS3	Access to Education and Health Services	Best Practice	100%
PFMS9	Controlling Soil Erosion	Best Practice	100%
PFMS13	Environmental Conservation	Best Practice	100%
PFMS1	Family and Hired Labor	Minimum Requirement	PASS
PFMS4	Farmer Dwellings	Best Practice	100%
PFMS5	Integrated Pest, Disease and Weed Management	Best Practice	100%
PFMS2	Prohibited Agrochemicals	Minimum Requirement	PASS
PFMS11	Pruning and Regeneration	Best Practice	100%
PFMS6	Safe Use of Agrochemicals	Best Practice	0%
PFMS10	Shade	Best Practice	100%
PFMS7	Soil Fertility	Best Practice	100%
PFMS8	Soil Productivity and Water Conservation	Best Practice	100%
PFMS12	Water Body Protection	Best Practice	100%
PFMS14	Wildlife Protection	Best Practice	100%



Protecting Water Sources

One of the key issues identified during initial sustainability audits – and a major challenge for coffee wet mills around the world – was proper wastewater management. Typically, during coffee processing, large quantities of water are used to transport and wash the coffee. Waste material from the milling process, such as coffee pulp, is often disposed of improperly and in some cases discharged directly into local waterways. These problems have become so acute in Ethiopia that legislation was passed recently to prevent new wet mills from being constructed within a five-kilometer vicinity of existing ones as a way of minimizing pollution. In an effort to mitigate the environmental impact of wet mills, the Coffee Initiative assisted client cooperatives in three different ways.

- First, when constructing new wet mills, cooperatives received support to install new “eco-pulping” equipment. Manufactured in Colombia and Brazil, these eco-pulping machines reduced the overall amount of water required by 80% to 90% compared to traditional wet milling equipment. Business Advisors also assisted client to install water meters and logbooks to track water consumption over time, a requirement of some coffee buyers including Starbucks to demonstrate water reduction efforts.
- Second, client cooperatives were trained to separate the coffee pulp from the wastewater and use it as organic compost.
- Third, each wet mill was supported to ensure that it had a suitable wastewater disposal system. For some wet mills, this meant constructing a shallow evaporation lagoon at least 30 meters from the nearest water body. For others, it meant constructing Vetiver wetland treatment systems. Vetiver is a type of grass known for its deep rooting structure and is often used to treat sewage and non-toxic industrial waste. This low-cost, simple technology worked to clean up wastewater and slow the flow of water so it would evaporate and be taken up by the Vetiver roots.

These and other practical, cost-effective solutions continue to attract interest from the wider coffee industry. For instance, some privately owned wet mills in Ethiopia are now establishing Vetiver wetland areas. With water becoming an increasingly scarce resource, the coffee industry must play a more active role in helping to alleviate East Africa’s environmental challenges, and the introduction of sustainability standards for wet mill clients was an important step in that direction.



Building a Stronger Coffee Value Chain

In East Africa, the coffee industry faces challenges that, if not properly addressed, could potentially reverse productivity gains and quality improvement achieved at the producer level. Even if farmers are enjoying substantial increases in yields and can sell their cherry at high prices to a nearby wet mill, they will not benefit fully if all actors in the value chain are not effectively linked.

A successful coffee value chain has sufficient agronomic expertise to achieve consistently high yields, adequate wet-milling capacity and expertise for operating the wet mills efficiently, access to finance both for working capital and capital investments at reasonable rates and marketing services to dry mill and export the coffee.

However, in many situations not all of these elements are in place. A breakdown in performance at any stage can pose significant risks to farmers, cooperatives and the broader industry. And coffee can be ruined at any step along the chain, from incorrect fertilizer application by the farmer to improper processing methods to shipping to roasting. Therefore, to ensure the long-term sustainability of its efforts, it was critical for the Coffee Initiative to involve government and industry partners to build a more efficient, stable and inclusive value chain.

Expanding Access to Agricultural Inputs

In many parts of Tanzania the common method of fertilizing coffee farms was to use Urea fertilizer and manure. However, this practice failed to take into account local soil conditions or the specific nutritional needs of coffee trees. In fact, the use of Urea fertilizer (containing only Nitrogen) was creating nutrient imbalances in the trees resulting in sub-optimal yields.

In 2010 the Coffee Initiative worked with partner organizations to conduct a soil and leaf survey for all Tanzania's coffee growing regions. With on-the-ground support from the Tanzania Coffee Board and the Tanzania Coffee Research Institute, and scientific testing by a private laboratory, the results of these surveys have defined a set of location-specific nutritional recommendations that cater for variations in soil and can be adjusted according to yield expectations.

These fertilizer recommendations were included in the Coffee Initiative's Farm College training curriculum and emphasized the use of compost and mulch to improve soil health, and a balanced feeding program using a coffee specific fertilizer formulation (containing all the required nutrients) and micronutrient foliar feed. In addition, lime recommendations were developed for soils with high acidity levels. The Coffee Initiative's Farm College enabled farmers to try-out these new products on demonstration plots during training and observe the impact of better nutrition in a surprisingly short time.

However, the rising demand for the new fertilizers by smallholder farmers caused a new challenge to emerge: with an expansive terrain and poor infrastructure, how could the Coffee Initiative ensure that the recommended products were actually available when and where they were needed? The problem was particularly acute in Mbinga, which lies in one of the most remote corners of Tanzania, more than 1,000 kilometers from Dar es Salaam. Although coffee is vital to Mbinga's rural economy these recommended products had never been used on coffee and were not locally available.

To overcome this supply challenge, the Coffee Initiative worked closely with Yara Tanzania, an international fertilizer company, to inform them of the growing demand for coffee specific fertilizers and brainstorm with them on the logistics of getting the fertilizers to farmers. Through this partnership, Yara established a distributor in Mbinga that created a decentralized network of seven outlets in Mbinga town and surrounding villages. These new outlets enabled farmers to access both the coffee specific fertilizer and foliar feed product. In early 2013 Yara Tanzania reported that over 50 metric tons of the coffee specific fertilizer had been sold in the previous three months and strong sales are continuing.

"Yara Tanzania has seen very positive results by working with TechnoServe," said Julien Camaleonte, Commercial Manager at Yara Tanzania. "Through the development and management of demonstration plots, the awareness of crop nutrition at the farm-level and among coffee stakeholders, and the practical training offered to farmers, we have seen a big impact from their activities."

Equipped with the right information and access to the recommended agro-inputs Mbinga's coffee farmers can now ensure that nutrient needs on their farms are being met and that yields and quality are being maximized.

Julius Mbunda, a coffee farmer who took part in the Farm College in Mbinga noticed a significant change on his coffee farm after starting to use the coffee specific fertilizer, along with improved pruning, mulching and weeding practices. "Production per tree has increased tremendously and the coffee beans are much heavier," he explained. "According to what I see on my farm, this is going to be my year!"



Julius Mbunda with the Coffee Initiative Farmer Trainer

RESULTS

Introduced New Coffee Service Provider Model

Coffee in East Africa has traditionally been a highly politicized industry, and the private sector has typically been limited to the role of ultimate buyer at export. Despite the market liberalization that has occurred over the past two decades, a culture of mistrust and a lack of legal clarity continued, resulting in neither cooperatives nor private companies being eager to form business relationships.

Even the most simple business model of private exporters buying coffee from cooperative wet mills failed to materialize as cooperatives couldn't access the large amounts of working capital they needed and private exporters were reluctant to finance them with no ability to own or control the coffee quality.

Because of a supportive policy environment in Rwanda, the Coffee Initiative designed and implemented a new "Coffee Service Provider" (CSP) model in which private export companies provide wet mills with fee-based services. These include working capital financing, price risk management, export logistics and linkages to international coffee buyers. In exchange for these services, the CSP takes a percentage of the sales of the cooperative, typically between 5% and 7% and also deducts costs paid on behalf of the cooperative.

The Coffee Initiative pioneered this model with two CSPs providing services to five cooperatives in 2007. By the end of Phase One, 50 cooperatives were receiving CSP services from four coffee exporters who have since expanded these services to more than 100 cooperative and private wet mill businesses providing more than \$5 million in annual working capital financing.

The CSP model plays an important role in supporting the development of a transparent and inclusive coffee value chain in East Africa, and all the major producing countries can make the transition to this model. These commercially symbiotic relationships point the way to a sustainable model in which private exporters provide ongoing support and follow-up training to wet mills, allowing an exit opportunity for donors.

In December 2010, the success of the CSP model prompted the Rwanda coffee regulatory authority to formalize the position of CSPs in a new set of coffee regulations.

Toward the end of Phase One, the Coffee Initiative began working with the Tanzania Coffee Board to expand this model to Tanzania and help achieve the country's ambition of increasing the percentage of fully washed coffee from 15% today to 50% by 2015. Today, the government is endorsing the CSP model and the Tanzania Coffee Board is encouraging wet mills to take advantage of CSP services.



“ The Coffee Initiative introduced me to a new approach of doing business. The new opportunity of selling services to cooperatives is increasing my business by allowing me to convert from trading commodity coffee to specialty coffee. Farmers are making more money, and I'm making higher profits. ”

Jean Bosco Seminega

Managing Director

Kivu Arabica Coffee Company, Rwanda

Contributed to Policy Discussions and Participated in Industry Forums

From a policy perspective, the need to increase farmer incomes was and continues to be widely recognized by government stakeholders. The project's focus on improving coffee quality through wet mill interventions was fully in line with broader policy agendas.

Engagement included activities such as hosting a coffee marketing forum co-sponsored with Ethiopia's Ministry of Agriculture in years three and four, contributing to Tanzania's 2012 Coffee Sector Strategy, and participating in regular meetings with heads of coffee boards and government ministers in each program country. In order to share its unique farm-level production data and contribute to industry discussions, Coffee Initiative leadership also took part in several events throughout the duration of the project, from local stakeholder workshops to conferences held by the African Fine Coffees Association to global events such as the Specialty Coffee Association of America.

Established Strong Private Sector Relationships

Through Phase One, the total amount of green coffee revenue generated by Coffee Initiative clients exceeded \$70 million. Several leading specialty coffee roasters developed close partnerships with the Coffee Initiative and its clients, resulting in an increase of their purchases from East Africa. For instance, Peet's Coffee & Tea purchased a total of 1.7 million pounds of green coffee from Coffee Initiative clients over the past four years at a cost of nearly \$5 million. Peet's "Uzuri African Blend" consists entirely of coffee from Coffee Initiative clients and represents the first African coffee blend launched by the company. Similarly, high-end coffee roasters Intelligentsia and Stumptown Coffee Roasters marketed individual Ethiopia wet mill client coffees as single-origin products with the cooperative name displayed on the coffee package.

Without scale, the Coffee Initiative would not have been able to gain the attention of these buyers nor meet the volume demanded. The project's scale attracted private sector investment and allowed clients to fulfill large purchasing orders based on a reputation for quality and reliability.



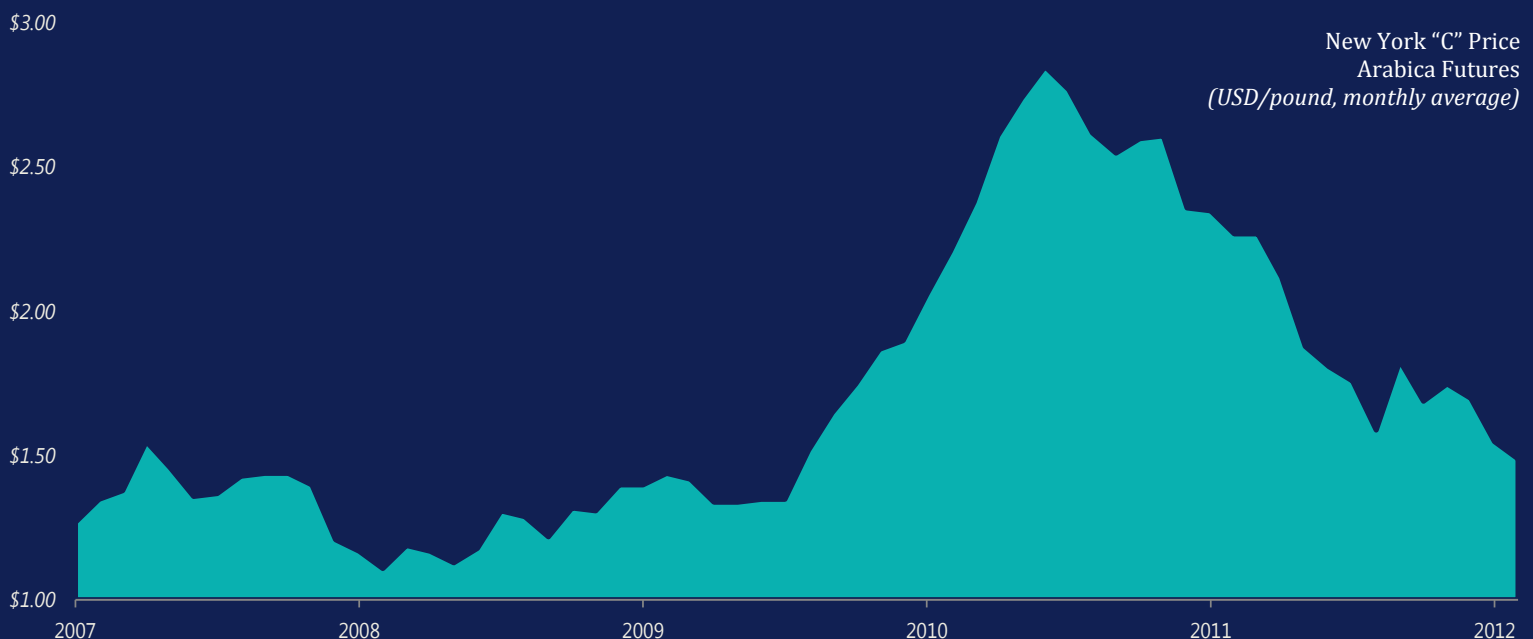
Peet's Coffee & Tea launched the "Uzuri African Blend" consisting entirely of coffee from Coffee Initiative clients.

Managing Market Volatility

Like most types of farming, growing coffee is a risky business. And there is often an imperfect match between supply (which is cyclical and very weather-dependent) and demand (which has grown at a relatively steady rate over the past decade). At the outset of the Coffee Initiative, the New York “C” price of Arabica coffee was \$1.35 per pound. Over the course of the project, this fluctuated widely, falling to \$1.01 per pound in 2008 and rising to \$3.05 per pound, a 34-year high, in 2011. International prices have since fallen sharply as producers in Brazil, Colombia and Vietnam invest in production while some roasters substitute Arabica purchases for less expensive Robusta coffee for use in blends.

Smallholder farmers and producer organizations continue to suffer from notoriously volatile market swings and unpredictable prices brought forth by various factors – from speculation in the global futures market to extreme weather events. While East Africa will maintain competitiveness in specialty coffee production in the future, warnings of frosts or droughts in Brazil can drive up prices one day, while reports of a bumper crop in Colombia can drive down prices the next day. Such turbulence fuels uncertainty, places stress on all areas of the value chain and leaves smallholder farmers particularly vulnerable; they often have the very least control over their own economic livelihood.

Although producers of specialty coffee are typically less prone to such volatile price shocks, the unpredictable boom and bust nature of the commodities market remains an acute challenge. There are several hundred wet mills purchasing farmers’ cherry months in advance of when final sales are negotiated. While cooperatives are advised to pay advance prices assuming conservative market prices, cooperatives and farmers are susceptible to major losses should the benchmark New York “C” price fall substantially. As such, there are major opportunities to offer cooperative price risk management services to hedge against adverse market movements. Yet, for most small-scale cooperatives, the solution need not be complex. For cooperatives, the simplest method of shielding against price falls is to sell often, rather than holding coffee stocks and attempting to anticipate which way global prices will move. One coffee service provider in Rwanda has gone further by selling future contracts on the New York futures market to enable cooperatives to lock in the market price at the time of harvesting.





CHALLENGES AND SUCCESS FACTORS

Curriculum Structure and Training Methodology

Directly engaging farmers through highly participatory activities, such as role-playing techniques and group discussions, was critical to the high adoption rate of best practices. Similarly, on-farm demonstration plots hosted by one member selected by the group, a “Focal Farmer,” allowed farmers in the community to see tangible results of what was possible when good agricultural practices were appropriately and consistently applied.

Farmer Motivation

Because the global New York “C” price for Arabica coffee increased over the course of the project – reaching a 34-year high in 2011 – farm-gate prices steadily rose, and farmers had a strong financial incentive to invest (or re-invest) their resources in coffee production. This exogenous influence, when combined with the Coffee Initiative’s community sensitization and mobilization efforts, resulted in higher than expected farmer interest in the agronomy program and lower attrition rates.

Monitoring & Evaluation Platform

Setting up a platform for effective monitoring and evaluation was critical for the project team to enable evaluation of impact and assure effective project management (the Coffee Initiative achieved 95% of 300 milestones). Clearly defined roles and responsibilities for each country team and at the field level helped to ensure the evaluation strategy incorporated localized dynamics, quality field data collection and a real-time ability to course correct.

Several indicators such as increases to farmer yields required a rigorous analytical evaluation approach with trade-offs between assuring statistically valid results and a timely and resource-effective implementation strategy. The Monitoring & Evaluation team learned that appropriate sample size selection for treatment and control groups as well as allowing sufficient lead time to execute baseline and end-line data collection was critical to achieving defensible results. The team took a “more is better” approach of collecting large amounts of data (e.g., over one million attendance record entries were digitized in Rwanda). This has enabled innovative statistical analyses on the relationship between farmer attendance, best practice adoption and farm yields.

Availability of Agro-Inputs

The availability of agro-inputs, especially fertilizer, was a major problem in some countries, particularly Rwanda, where until recently the government distributed agro-inputs to farmers at no cost. While the government no longer provides agro-inputs, this long-standing practice caused farmers to believe that these inputs should be free. The Coffee Initiative assumed that the private sector would step in, yet with limited demand, distributors were reluctant to stock agro-inputs. Linking cooperatives to agro-input wholesalers increased usage among some farmers but further efforts are required to create a competitive agro-input sector in Rwanda.

Soil and Leaf Surveys

Commissioning nationwide soil and leaf studies to assess nutritional deficiencies in Rwanda, Kenya and Tanzania allowed the Farm College to provide farmers with highly localized recommendations. Subsequent dialogue with government and industry stakeholders also helped to shape national policy and promote the acceptance of appropriate fertilizer use.

Improving Cooperative Management with Mobile Phone Technology

To be successful in delivering coffee to the global market on time and with consistent quality, cooperatives must employ the same managerial techniques and accounting practices as a multinational importer or roaster. However, weak cooperative leadership, corruption and mismanagement were often the greatest risks to the performance of successful wet mill businesses, threatening their commercial viability and eroding farmer trust.

In addition to Coffee Initiative staff providing training to wet mill managers and accountants, an SMS-based bookkeeping system managed by Coffee Service Providers was installed to enable real-time monitoring of cooperative finances and stocks. This tool, along with annual Transparency Sheets, enables Coffee Service Providers to ensure cash is available to the cooperatives and there is a clear audit trail for all cash transactions.

Access to Finance in Ethiopia

The Coffee Initiative team was faced with a restrictive Ethiopian banking environment and needed to find creative solutions to support wet mill clients to access millions of dollars of financing. As a result, a dedicated team worked for many months to develop alternate approaches to secure working capital financing through a partnership with the International Finance Corporation (read more about the IFC partnership on page 43).

[illegible]

Jeremy Cordingley
Managing Director

TECHNOSERVE

Overcoming Obstacles to Agriculture Finance in Ethiopia

Agriculture dominates Ethiopia's economy. The sector contributes approximately 45% of the country's gross domestic product and accounts for 80% of its labor force. Coffee is an especially important crop. It represents about 30% of the country's total export earnings and is the primary livelihood of approximately 1.2 million individuals.⁵

However, despite the size and importance of agriculture, and of coffee in particular, to the Ethiopian economy, the country's banks are often reluctant to lend to farmer cooperatives because of both real and perceived risks. In fact, Ethiopia's agricultural sector received an average of only 9.6% of the total loan portfolio of commercial banks between 2005 and 2009; and most of this funding was allocated toward investments in export facilities, rather than farm-level production or primary processing.⁶

In Ethiopia, farmers' access to credit is further obstructed by several regulatory constraints, such as strict lending policies and government-mandated collateral requirements. For instance, Ethiopian banks generally require collateral valued at a minimum of 100% of the value of the loan plus interest, which is prohibitive for almost every farmer cooperative. And farmers cannot use their land as collateral. Additionally, the Coffee Service Provider model first introduced in Rwanda would not work in Ethiopia because of laws prohibiting foreign capital in the banking sector. Private banks are currently not permitted to access foreign currency credit lines.

The scale of the wet mill program in Ethiopia required more than \$10 million of working capital and capital investment loans annually. Yet, with no formal collateral or credit history, and no opportunities for foreign companies to provide them financing, cooperatives were put at a distinct disadvantage and left with few options.

Recognizing these limitations, the Coffee Initiative led a major effort in 2010 to unlock substantial amounts of capital for clients by helping to establish a new relationship between the International Finance Corporation (IFC) and Nib International Bank, a major commercial bank in Ethiopia with an interest in growing its agribusiness portfolio, especially loans made to coffee cooperatives. Under the partnership, IFC established a \$10 million Risk Sharing Facility with Nib. The facility offers working capital loans up to \$250,000 per cooperative, disbursed against cash flow requirements and collateralized by coffee stocks.

“ The \$10 million facility to fund Coffee Initiative clients will go a long way to strengthen NIB's commitment to expand support to small farmers in the coffee sector in Ethiopia. ”

Amerga Kassa, President of Nib International Bank

5. "Agribusiness Indicators: Ethiopia," Enabling Environment: Access to Financial Services and Transportation, The World Bank, Report Number 68237, p. 33
6. Ibid

The program is designed such that cooperatives should be able to repay within one year entirely through the sales of their coffee. IFC agreed to cover up to 75% of any credit losses that Nib incurs. This marked the first time that IFC provided a guarantee for the benefit of smallholder farmers in East Africa, as opposed to the larger entities they typically finance.

Because of this credit, a total of 62 cooperatives, representing more than 47,000 farmers, have been able to export 3,000 metric tons of high-quality, washed coffee to international buyers; receiving premiums averaging 40% above the price of previously produced low-quality, unwashed coffee. By the end of Phase One, this had fueled revenue of \$11 million at the participating cooperatives and directly contributed to more than 1,000 wet mill jobs.

The IFC risk sharing facility has helped increase the amount of risk absorbed by Nib, from zero percent initially to 25% and then 35% by the end of Phase One. The Coffee Initiative hopes that by gradually increasing local banks' risk appetite and at the same time their experience lending to the coffee sector, the financial services available to coffee cooperatives will be greatly expanded.

This work also helped to blaze a trail for additional financing for the country's coffee sector, with continued work between farmer cooperatives and investors. In 2011, the Coffee Initiative brokered a similar risk-sharing agreement between the Cooperative Bank of Oromia and Netherlands-based Rabobank, which provided \$2 million in working capital loans to client cooperatives.

These risk-sharing facilities successfully demonstrate innovative approaches to structuring loan products to mitigate lender risk. Over time, the Coffee Initiative seeks to continue to improve the commercial banking industry's understanding of the risks and opportunities present in the specialty coffee sector, and work with multilateral and domestic lending providers to help smallholder coffee farmers gain much-needed access to credit.

- \$10 million risk sharing facility
- 62 cooperatives
- 47,929 smallholder farmers
- \$1.35/kg in additional farmer income
- 1,000 wet mill jobs
- 1,634 kilograms of coffee exported
- \$11 million in revenue

Data as of June 2012

“ We expect this project to increase incomes and improve the lives of farmers in Ethiopia. The \$10 million facility to fund Coffee Initiative clients provides an innovative way for IFC to help NIB increase its lending to coffee farmer cooperatives in Ethiopia that can, in turn, acquire wet mills for processing high-quality coffee and meet working capital needs. ”

Jean Philippe Prosper

Director for Eastern and Southern Africa

IFC

Pioneering Rural Electrification in Rwanda

Tucked away in the terraced hills of Western Rwanda, Gisuma Coffee is a 570-member coffee cooperative that was formed in 2009 when the Coffee Initiative supported a group of coffee farmers to organize and form a business. With technical and business advice from Coffee Initiative Business Advisors, plus financing from a local equipment company, Gisuma purchased and installed an efficient and eco-friendly pulper and constructed the wet mill site.

In its first year of operations, Gisuma made a profit of \$13,665, and shared 22% of this with its members; the remaining profit was reinvested into the cooperative to pay off capital equipment loans. During the second year, Gisuma's net profit increased threefold to \$41,000. The cooperative shared 67% of this profit with member farmers.

As a result, the average coffee farmer delivering her harvest to Gisuma earned 45% more per kilogram of cherry than she would have if she had sold to a local trader. In addition to investing in their families' health, nutrition and education, local coffee-growing households invested their higher incomes in improved infrastructure for themselves and their communities.

Two members of the cooperative, Joseph Kambanda and Peter Mugiraneza, encouraged their neighbors to invest in supplying electricity to their homes. Together, the two farmers mobilized the local community to take advantage of an existing electricity line, installed since 1992 to supply power to a nearby trading center, but from which no one in their rural community had ever benefited.

"With all the money flowing into the hands of my fellow farmers, my neighbor Joseph and I thought of convincing them to pull electricity from an existing line that passes through our village," explained Peter. After consultation with the local government and the electricity company, 12 coffee farmers agreed to each contribute 130,000 Rwandan francs (\$222) for the line to be extended nearly one kilometer. "We can now play our radios with electricity, charge our mobile phones and provide an appropriate environment for our children to revise their lessons at night," said Peter.

Recognizing the success achieved by Joseph and Peter, other members of the cooperative followed. Another group of 24 farmers in a nearby village each contributed 90,000 Rwandan francs (\$154) to pull from the same electricity line and supply power to their homes at a distance of 900 meters.

The experience of the two villages amazed the local administrators, and piqued their interest in helping other nearby communities to undertake similar electrification arrangements. When the Coffee Initiative visited the village, the local administration was in the process of establishing a sector electrification plan for the rest of the communities with the support of the Rwanda Electricity Company for a distance of nearly 10 kilometers.

Joseph and Peter are very proud of the success of their project, which inspired both their neighbors and the local administration. With on-the-job training in wet mill operations, business management, coffee quality and governance from their Coffee Initiative Business Advisor, Gisuma quickly transformed into a model coffee business, wherein effective management coupled with good cooperative governance has demonstrated the benefits of cooperation.



SUSTAINING THE MOMENTUM

Today, many believe that emerging markets will become the engines for future growth in the coffee industry.

Consumption of coffee in Brazil, India and China is growing at an unprecedented annual rate of 10% to 20%. (During 2011, Starbucks opened an average of one new store every four days in China.) Similarly, Vietnam's consumption of coffee has grown by 65% since 2008. This growing demand continues to provide smallholder coffee farmers around the world with unprecedented opportunities to earn life-changing income.

However, specialty coffee production is still in its infancy throughout East Africa and the region has suffered several setbacks from which it has yet to fully recover. Overall coffee production in Africa has declined over the years, from 24 million bags in the 1980s to 16 million bags in 2010, and yields have continuously decreased. During this time, Brazil increased its coffee production, from 24.5 million bags in 1990 to 48 million in 2010. And technological innovations on Brazil's highly mechanized coffee farms were raising yields and lowering costs, and they continue to alter the economic fundamentals of coffee growing.

In order to ensure their global competitiveness, East African governments have established ambitious targets for the future development of their coffee industries. Tanzania, for example, announced plans to increase coffee production from the present average of 50,000 tons in 2012 to at least 80,000 tons by 2016 and to 100,000 tons by 2021. The government believes that this increase in production will go hand in hand with improvements in quality, with a goal of at least 75% of Tanzania's Arabica coffee being processed through wet mills by 2021, up from approximately 15% today.⁶

To meet these national targets and the insatiable demand from buyers while at the same time ensuring that smallholder coffee farmers reap the rewards, more investment is needed in building an inclusive and sustainable coffee sector. This is an area in which governments, companies and non-governmental organizations can collaborate, as was the case with Phase One of the Coffee Initiative.

Considering the region's low yields, additional investments in farmer training is especially important in boosting yields. The Coffee Initiative only scratched the surface of the region's productivity potential with only 1% of East African farmers trained. Not only would such investments sustainably raise the incomes of millions of coffee farmers, they also would make significant contributions to support national growth and development.

An analysis conducted by the Coffee Initiative found that, given average yields and 2012 Arabica prices, Ethiopia could earn more than \$1 billion in additional annual export revenue if 1.2 million farmers nationwide adopted improved agronomy practices.⁷

6. "Tanzania Coffee Industry Development Strategy," Tanzania Coffee Board, 2012

7. TechnoServe, Ethiopia Coffee Industry Strategic Plan, March 2012.

Redefining a Region

When the Coffee Initiative began in Ethiopia in 2009, it focused its work around Jimma, one of the coffee-growing zones in the Oromia State in the western highlands. The name “Jimma” or “Djimma” is often used as a catchall for Ethiopia’s lowest quality, unwashed coffees. Globally, the “Djimma Grade 5” has been among the lowest priced types of Arabica coffee for decades.

The low quality and poor reputation of coffee from Jimma was not the result of inferior growing conditions or genetics. Quite the opposite: Jimma is a hotbed for coffee genetic diversity and has some of Ethiopia’s best farming land. Many consider this area to be the birthplace of Arabica coffee. It is only poor processing practices that have put most of its coffee at the bottom rung of the coffee trade, far behind Ethiopia’s more established regions like Sidamo and Yirgacheffe.

The Coffee Initiative’s quality improvement work over the past four years dramatically changed the perception of Jimma’s coffee and has attracted attention from the wider coffee industry. In the program’s first year, a new wet mill located less than 20 kilometers from the town of Jimma took top prize at a national coffee competition. In the second year, 16 out of the 62 wet mills established by the Coffee Initiative near Jimma were featured by specialty coffee roasters in the U.S. and Europe as “single origin” offerings. By the third year, the wet mills produced more than 2,000 metric tons of washed coffee and received visits from more than 20 international coffee buyers during the coffee harvest.

Today, these new wet mills have given more than 45,000 smallholder farmers a way to produce consistent, high-quality washed coffee and earn premiums averaging 50% above the price of unwashed coffee.

“ The achievements of the Ethiopian farmer communities, with the assistance of the Coffee Initiative, seem monumental to me. From producers of run-of-mill commercial coffee of little worth they have catapulted to being the highest quality producers in Ethiopia. ”

George Howell

Founder of Terroir Coffee Company



By continuing to focus on improving quality through the production of fully washed coffee, the entire coffee infrastructure in East Africa is changing to support the production of premium, specialty coffees. While Rwanda and Tanzania have reached a tipping point where private investors and farmers are installing wet mills without donor support, opportunities remain in other coffee-growing regions of East Africa to support the launch of new wet mills.

Additionally, efforts should be geared toward helping existing cooperatives operate more efficiently and professionally. This can be done through sharing efficiency benchmarking with cooperatives and improved enforcement of cooperative regulations. Access to proper inputs and financing tools is equally important and will ensure that cooperatives and their farmers will continue to command a higher price for their crop.

Moving Forward

The Coffee Initiative was originally envisioned as a twelve-year program that would reach approximately one million East African farmers. This long-term time horizon allowed the Coffee Initiative to make significant investments early on, such as investments in human resources and technology-based M&E solutions. However, several objectives related to scaling were revised in mid-2011 due to changes in the Bill & Melinda Gates Foundation's agricultural development priorities. These changes are reflected in Phase Two of the Coffee Initiative.

Phase Two builds on the experience, infrastructure and partnerships from Phase One. In addition to ensuring the sustainability of efforts in Tanzania, Kenya and Rwanda, Phase Two is largely focused on Ethiopia, where the project features an integrated cash and food crop program designed to improve maize productivity for Ethiopian coffee farmers.



APPENDIX:

Consolidated Year Four Program Targets

	Original Target	Revised Target ⁸	Actual Achieved
Number of farmers	182,000	132,000	195,408
Number of wet mills	288	232	285
Coffee volume (metric tons)	10,000	5,090	9,077
Export (FOB) price increase (\$/kg)	\$0.30	N/A	\$0.96
Farm-gate price increase (\$/kg)	\$0.50	N/A	\$0.50
Cupping labs installed	35	N/A	35
Cupper trained	123	N/A	225
Farmers trained in agronomy	20,000	N/A	36,033
Yield improvement	12%	N/A	42%
Percent of farmers adopting best practices	50%	N/A	79%
Working capital mobilized	\$20.1 million	\$12.4 million	\$18.7 million
Capex mobilized	\$2.2 million	N/A	\$2.6 million
Bank analysts trained	8	N/A	57
New banking instruments released	4	N/A	8
New CSPs or CSP services established	4	N/A	9
Average increase in coffee income	N/A	N/A	22%

8. Due a request by the Bill & Melinda Gates Foundation, the Coffee Initiative revised its targets and no longer accepted new wet mill clients because of uncertainties related to assuring three years of advisory services .



195,408 FARMERS
SERVED

9,077 TONS OF
GREEN COFFEE
PRODUCED

\$38
MILLION
OF LOANS
DISBURSED

\$0.96
PER KG
EXPORT
PRICE
INCREASE

\$0.50
PER KG
FARMER
PRICE
INCREASE

42%
AVERAGE
YIELD
INCREASE

36,033 FARMERS TRAINED IN
SUSTAINABLE AGRONOMY
PRACTICES

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