



Social and Environmental Due Diligence

Detailed Methodology Guide and Initial Results

January, 2014

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Foreword

This document accompanies our Issue Brief on the related topic of “Social & Environmental Due Diligence: From the Impact Case to the Business Case,” providing a more detailed guide to the social and environmental due diligence tools we have published (all available on our website).

Over time, we hope that social and environmental due diligence tools will become sufficiently accessible and standardized so that an ever-broadening set of institutions, particularly those involved in agricultural finance, can incorporate them into their existing processes. We invite others to share their approaches as well, so that a community of practice can develop around these topics.



An agroforestry coffee plot of a member of the coffee cooperative Juan Sabines in Mexico. Agroforestry is a form of farming that integrates trees and agriculture crops, often in a way that mimics natural forests. Agroforestry farms such as this one can provide important environmental benefits over non-agroforestry farms, including enhanced soil fertility and increased carbon sequestration.

Introduction

As Root Capital has evolved from a start-up to an impact-focused agricultural lender that reaches over 200 businesses annually, our approach to social and environmental due diligence has evolved as well. In our first years, we had few formal tools or methodologies. Willy Foote, our founder, hired loan officers who, in his folksy phrase, “knew how to pick ’em” — that is, had an intuitive sense for identifying agricultural businesses that benefited smallholder farmers, often because they had grown up in farming communities or came out of the finance function of an agricultural business themselves. Moreover, when the team and the portfolio were small, every member of the lending team knew the details of every client, and judgments about social and environmental issues were made informally.

As Root Capital grew, it became necessary to standardize our social and environmental due diligence, both to train new staff and to set common standards across a growing portfolio. Our social and environmental due diligence tools formalize the intuitive practices of our most experienced loan officers and are complemented by our review of the relevant literature, feedback from third-party experts, and direct surveys of smallholder farmers. Of equal significance is that we hire loan officers who share our mission and values, and that we reinforce those values through ongoing training and, perhaps most importantly, our culture.

This guide reflects our current yet continuously evolving approach to social and environmental due diligence. We begin by presenting our framework for assessing the relationship between agricultural businesses, smallholder producers, and their ecosystems. We discuss how a mutually beneficial cycle, facilitated by trust and strengthened by credit, can contribute to a productive, resilient, and sustainable supply chain.

Next, we make the case for using “Practices as Proxies” — in other words, applying tools of social and environmental due diligence to evaluate the practices of agricultural businesses and smallholder farmers, and using the results as proxies for the mutually beneficial relationships between farmers and businesses that we seek to support. We take a close look at the practices profiled in our Scorecards and provide portfolio-wide data and individual client examples, and we discuss how we incorporate context and additionality into our analysis. We conclude by inviting other organizations to share their own approaches in contributing to the emerging standards and best practices around social and environmental due diligence.

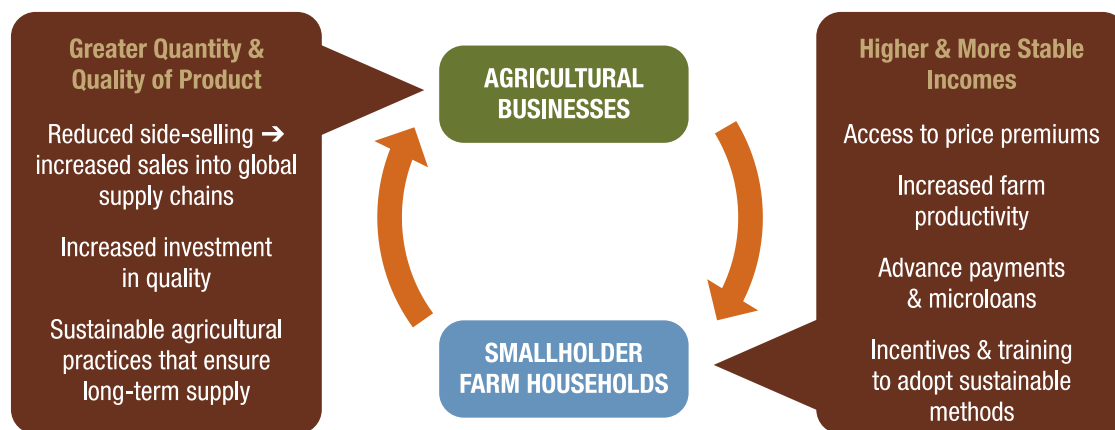
What to Look For

The Mutually Beneficial Cycle

Of the 2.6 billion people who survive on less than \$2 per day, 75 percent live in rural areas and rely on agriculture for their livelihood. Too often, they are constrained by lack of access to markets, farm inputs, agricultural training and technology, and credit. They resort to survival measures such as illegal logging and slash-and-burn agriculture, which perpetuate a cycle of poverty and environmental degradation.

Agricultural businesses that aggregate hundreds or thousands of smallholder farmers can overcome these barriers. Yet many are trapped in the missing middle, or the gap between microfinance and commercial banks. Root Capital lends and provides financial management training to these agricultural businesses, including cooperatives, producer associations, and private businesses that source from smallholder farmers, because we believe that they have the potential to be engines that drive sustainable prosperity in rural areas of developing countries. They do so by establishing a mutually beneficial relationship with smallholder farmers and by supporting their adoption of sustainable agronomic practices.

The businesses, as well as upstream exporters, processors, retailers, and consumers, also benefit, as farmers provide a stable and secure supply of agricultural products. Over time, a cycle of mutually beneficial repeat relationships throughout the value chain can emerge. Of course, the interests of the different players are not always aligned, particularly over the short term, and external factors such as commodity market volatility can disrupt these relationships. Nevertheless, to the extent that a cycle of mutually beneficial relationships can be achieved in a smallholder-based agricultural value chain, that value chain will be more secure, resilient, and sustainable — and thus more creditworthy.



Specifically, agricultural businesses typically support producer livelihoods and ecosystems in one or more of the following ways, and each is measured in our Social and Environmental Scorecards:

1. Increasing prices to producers and wages to employees
2. Increasing producer productivity
3. Increasing stability of producer income

4. Investing in or linking producers with public goods (e.g., health, education, water, transportation)
5. Creating the incentives and delivering the training required to sustain producers' ecosystems

With regard to the environment, the locus of impact is the relationship between Root Capital's clients and their farmer-suppliers' agronomic practices on the one hand, and the environmental integrity of the supporting ecosystem on the other. To the degree that those businesses and their suppliers invest in practices that maintain biodiversity, build soil quality, and responsibly dispose of waste, their ecosystems will continue to provide the services — the climate regulation, nutrients, and clean water — required for healthy livelihoods. Unsustainable practices such as excessive agrochemical use or nutrient mining have the opposite effect, and the mutually beneficial cycle between producer and ecosystem will eventually break down.

For this mutually beneficial cycle to emerge — for agricultural value chains to function well — many preconditions, ranging from producer capacity to dependable logistics, must be met. Yet from our vantage point as a specialized agricultural lender, two value chain lubricants play a particularly critical role: trust and credit.

The Role of *Compromiso* (Trust)

In Latin America, the business managers and farmers that we work with often talk about the strength of the *compromiso* (commitment or trust) between them. Trust is both a result and a cause of the mutually beneficial cycle between agricultural businesses that invest in smallholders and smallholders that deliver their crop to the business through good harvests and bad. Trust becomes a self-fulfilling prophecy.

Farmers often have a choice of buyers for their crop, including one or more agricultural businesses and a variety of local middlemen and traders, some of whom may use exploitative practices (for instance, weighing farmers' harvests on scales that have been rigged to underestimate the weight). Before each season, farmers typically agree with an enterprise on roughly how much volume they will deliver, and the enterprise seeks contracts with its own buyers based on these volume estimates.

Farmers whose livelihoods are improved by the enterprise, and who trust the enterprise to balance its interests with farmers' interests over the short and long term, will fulfill their pledged volume to the best of their ability. They thus enable the enterprise to successfully fulfill its own export contracts. With cash from these sales, the enterprise can afford to pay higher and earlier payments to farmers and help them to invest in their own productivity, driving a mutually beneficial cycle that in turn supports the business's ability to repay creditors.

Conversely, when farmers do not trust the enterprise to pay them a higher, timely price, they are more likely to "side-sell" the harvest they promised to the enterprise to local middlemen, who may offer cash up front. This potentially causes the enterprise to default on sales contracts with its own buyers. As a consequence, the enterprise, lacking cash inflow from sales, fails to make adequate or timely payments to farmers. In turn, farmers become even more likely to side-sell in the future, and a vicious cycle ensues that jeopardizes the capital of the enterprise's creditors.



COOMPROCOM

A farmer affiliated with our client COOMPROCOM, a coffee cooperative in Nicaragua, sums it up well: “It bothers COOMPROCOM when members sell to the (local) market [instead of to COOMPROCOM]. It’s like they are just waiting for the benefits from the cooperative without actually contributing. We should help the cooperative so that it can help us.” In the most recent season, COOMPROCOM paid premiums to farmers of 5-10% over the local market price. Of equal or greater importance to farmers are the small loans that COOMPROCOM makes available for emergencies or to get through ‘los meses flacos’, or the lean months between seasons. In return, COOMPROCOM’s farmers delivered 90% of their pledged coffee to COOMPROCOM, enabling it to increase its sales volumes by 33% over the previous year. (A full impact case study on COOMPROCOM is available at info.rootcapital.org/coomprocom.)

The Role of Credit

Credit has a critical role to play in the mutually beneficial cycle. If the business lacks cash on hand to purchase farmers’ crops at the time of harvest, forcing farmers to side-sell, or if the business cannot access a long-term loan to invest in processing equipment, the cycle between business and producer breaks down. In turn, this may cause farmers to adopt short-term, environmentally damaging survival tactics. Loans from Root Capital and other financiers play this role in lubricating agricultural value chains that deliver benefits to smallholders and the environment.

Social due diligence can help financiers to look for indicators of a mutually beneficial cycle between the farmers and the business that will drive a successful upcoming harvest season and prove resistant to market shocks. Credit will have greatest impact where this virtuous circle is in place. Financiers with a longer-term view can also use environmental due diligence to evaluate whether the practices of the farmers and the business are conserving or degrading the local ecosystem, which is necessary to support successful production — and rural livelihoods — through future harvests.

How to Look for the Mutually Beneficial Cycle: Practices as Proxies

The challenge for lenders in identifying the mutually beneficial cycle is that they typically interact only with the business. Lenders do not usually survey farmers or measure ecosystem health, because to do so would be prohibitively costly and time-consuming.

If the agricultural business has achieved a certification such as organic, fair trade, or Rainforest Alliance, then lenders can leverage the work that has already been done. Certifiers typically conduct extensive surveys of farmers to ensure, for instance, that farmers are not using hazardous agrochemicals. In these cases, the lender need only understand the requirements for each certification, and then address any remaining issues that are of interest to the lender but are not covered by the relevant certifications. Achieving certification also requires significant organizational capacity on the part of the business, and thus can serve as a proxy for managerial capacity.

Some businesses that are not certified have adopted sustainable agricultural practices and are supporting the livelihoods of small-scale farmers. If we are to address poverty and environmental degradation on a global scale, we need to reach these businesses and these farmers, and we need to be able to do so without conducting surveys of farmers or environmental measurements ourselves.

While comprehensive, farmer-level audits may not be practical for financial institutions to conduct, lenders can look for a set of practices, of the business and of the farmers, which can reasonably be expected to lead to the socioeconomic and environmental outcomes we desire. We call this approach “Practices as Proxies.” For instance, if the business is offering improved seeds and paying a higher price than other local buyers for farmers’ harvests, we have reason to believe that those practices are improving farmers’ incomes, all else being equal.

To be sure, practices are not proof of impact. To the extent that individual lenders’ mandate is to achieve certain social or environmental impacts, those lenders may implement deeper evaluations to demonstrate that impact. Root Capital conducts such evaluations, which can be found on our website at www.rootcapital.org/our-impact.

More generally, lenders must rely on professional researchers for experimental studies to connect the adoption of sustainable agronomic practices to desired social and environmental outcomes. In areas where researchers have generated a strong evidence base, lenders can leverage it to inform their choice of practices to look for. Root Capital’s social and environmental due diligence is based on our own review of this evidence base. Where the evidence is weak or ambiguous, lenders can play a role in calling attention to the need for further research to inform practice.

Only a minority of lenders will conduct independent impact evaluations or engage with the research agenda around social and environmental practices. But all lenders to agricultural businesses can employ the lessons of this research to focus their capital where it will have the greatest effect, and to inform better business decisions.

Detailed Review of Root Capital's Social and Environmental Due Diligence

Root Capital's loan officers conduct on-site due diligence visits with each prospective and renewal client. Site visits offer an opportunity for the loan officer to get to know the management team, observe operations, meet producers, build rapport, and spot-check selected issues of social and environmental due diligence. Based on the site visit and the information provided by each client in its loan application, loan officers complete a Credit Memo using our credit evaluation template. This template includes our Social and Environmental Scorecards.

Of course, the indicators on our Scorecards are (mostly) specific to agriculture; they will not apply to other sectors. Even within agriculture, different focus areas or indicators will make sense for different financiers, based on their mission and their operational model.

We share our social and environmental due diligence tools (www.rootcapital.org/our-impact-version-2), and this accompanying explanation, only as an example of how one agricultural lender has put its social and environmental mission into practice. In certain cases, we also share analyses based on the data we have collected. Based on self-reported, unaudited data, these analyses are for illustrative purposes only.

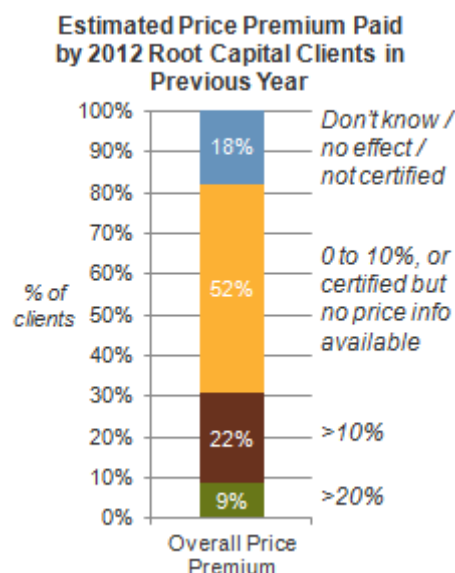
Social Practices

Prices and Wages (Social Scorecard Questions 3.1–3.3):

Many agricultural businesses pay higher and/or more stable prices to producers than other local buyers, for instance, price premiums associated with social or environmental certification or with quality of product. Unfortunately, there is no way to predict what price an enterprise will pay to producers in the upcoming harvest season. It depends on many factors, not least of all volatile international commodity prices. That said, an enterprise that has a history of securing price premiums and passing them on to farmers is likely to do so in the future, and farmers who have learned to expect a price premium from an agricultural business are likely to be loyal in selling their harvest to that business.

Therefore, we evaluate the price paid to producers relative to that paid by other local buyers in the past season. We also seek to understand the timing of payments, which is critical for farmers who need to invest in their farms, feed their families, and pay school fees. We have found that data on the exact prices paid to each individual farmer are very difficult to obtain, but that ballpark estimates of the average price paid by the enterprise and the prevailing local market price are top-of-mind numbers for business managers and farmers alike.

Finally, we observe that some of our clients offer a price premium to farmers but that other local buyers increase their prices over time to match that price. In effect, some of our clients become price-setters in their local markets, generating spillover benefits to all farmers in that market. In the data we collected



through social due diligence in 2012, we found that a majority of our client enterprises paid at least a small price premium to farmers.¹

Productivity (Social Scorecard Questions 3.4–3.5): Agricultural businesses that source from smallholder farmers typically offer those farmers support in increasing their yields and product quality. This support can take the form of training in new agronomic practices (e.g., creation and use of organic fertilizers), provision of inputs such as seeds, or investment in transportation or processing equipment. In some cases, businesses recruit farmers to a new economic activity (e.g., introducing honey processing as a complement to coffee farming) or encourage them to switch from one crop to a more profitable one.

In comparison with price premiums, interventions to increase smallholder productivity can be a higher-risk investment for agricultural businesses, but one that is necessary to meet the growing demand for nutritious food while creating livelihoods for farmers. They are higher-risk because they typically involve an outlay of resources to farmers before or during the season, and farmers often repay in kind when they deliver their harvest to the business. This creates an opportunity for farmers to default on their obligation to the enterprise by side-selling to another local buyer when harvest time arrives. Moreover, such investments are riskier simply because of their nature: investments in productivity may not generate returns due to disease, poor weather, or any number of other causes outside of a farmer's control.

More broadly, production and processing practices represent the locus of smallholder livelihoods and environmental sustainability. Some practices may increase yields or quality but not environmental sustainability; some vice versa; and some both. We believe that this is one of the most fertile areas for future exploration with research partners, and for continued enhancement of our social and environmental due diligence.

¹ If estimates of price premiums were unavailable, we assumed that premiums were in the range of 0% - 10% if the business was certified, otherwise we assumed no effect. This accounts for the large portion of businesses in the 0 – 10% category.



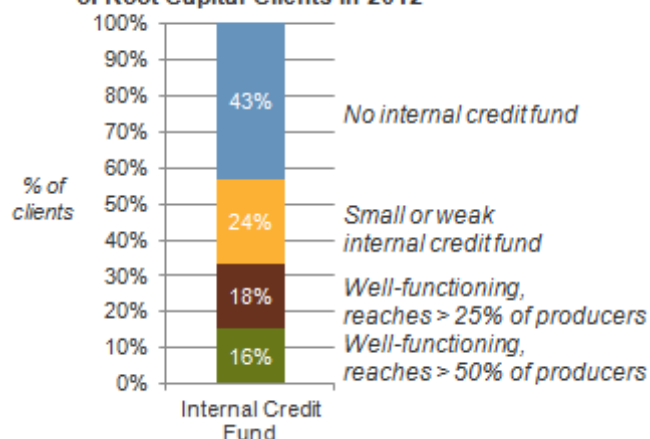
COOPCAB

COOPCAB, a coffee cooperative in Haiti, reduced the percentage of farms affected by scolytus (insect) plague from 65% to 15% by creating a demonstration plot to train farmers on methods to combat infestation. Moreover, the cooperative distributes coffee tree seedlings in a country where much of the land has been deforested, resulting in widespread erosion, loss of soil fertility and diminished agricultural productivity. Planting of coffee trees not only reduces deforestation; it also increases the long-term productivity of coffee farms whose tree stock is aging. For more information, see the [impact case study](#) of COOPCAB on our website.

Income Stability and Internal Credit (Social Scorecard Question 3.6):

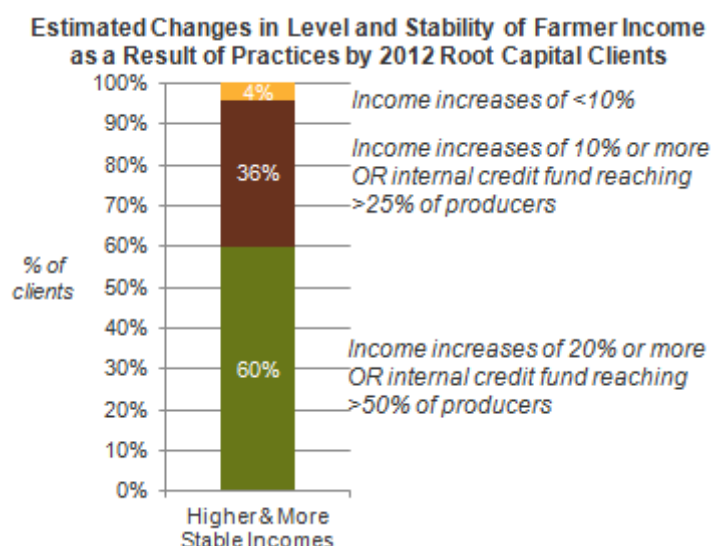
An emerging finding from our deeper-dive impact studies is that many producers cite not higher income per se, but better-timed income, as well as access to small loans, as the primary benefits of working with the subset of agricultural businesses that offer credit. Advances at or before the time of crop sale, and microloans for crop production and daily needs like food and medicine, are a hallmark of the mutually beneficial cycle. These help farmers to fund the substantial expense of preparing their crop for harvest (e.g., pruning, planting, shade tree management), and reduce the need for farmers to seek loans from other local coffee buyers, whom farmers are then obliged to repay with a portion of their harvest at a discount. Credit by the enterprise can also act as a safety net in areas that experience periods of food insecurity, and help farmer households to cope with health emergencies.

**Internal Credit Funds
of Root Capital Clients in 2012**



Beyond smoothing out the lumpiness of agricultural incomes within each season, agricultural enterprises provide longer-term stability of prices and/or market access and increase resilience amid changing climatic or other environmental conditions. We consider these larger and longer-term forms of stability qualitatively in the credit memo but have not identified a way to quantitatively “score” them in the social due diligence tool.

Overall, we estimate through self-reported data of loan officers that the vast majority of our clients increase either the level or the stability of income for smallholder farmers.



Community-Level Practices (Social Scorecard Question 4.1): Many agricultural businesses serve as anchor institutions for the surrounding area, and use a portion of price premiums associated with certification to fund investments on behalf of the local community. Other agricultural businesses serve as bridges with other institutions, undergoing the necessary processes and paperwork to channel NGO and government resources and projects to the local community. These might take the form of a new building for a school or clinic, a new road or bus terminal, a well for clean water, or myriad other possibilities. For example, Esquipulas, a coffee cooperative in Guatemala, operates and partially funds a pharmacy with subsidized medicines (with the rest of the funding provided by the government), and a doctor to visit the community and see patients at least once a week.

Many of these projects have no direct bearing on the productivity or prices realized by farmers. However, they do form part of the value proposition of the enterprise to farmers and can contribute to the mutually beneficial cycle, and so we seek to recognize them where they occur.

Gender (Social Scorecard Question 4.2): Agricultural enterprises can play an important role in elevating the role of women in communities and/or activities that have traditionally been led by men. As part of our Women in Agriculture Initiative (www.rootcapital.org/women-agriculture-initiative), we seek through our social due diligence to understand the roles and representation of women at each business at multiple levels: owner/manager, board member, employee, beneficiaries of ancillary services such as microcredit funds, and farmer/producer. We also seek to understand whether the enterprise offers programs or policies focused on gender.

Occupational Health and Safety (Social Scorecard Question 5.1): Root Capital does not lend to enterprises that do not comply with country and industry standards.

A Note on Ratings: When we first developed the social scorecard, to increase the degree of comparability across different types of impact, we sought to rate each enterprise on each type of impact, from “AAA” down to “B,” according to specific predefined criteria, with “C” representing a violation of a social or environmental “trigger” that disqualifies the business from financing. We are still using ratings, but we are moving toward greater emphasis on detail and accuracy of the underlying data on which the rating is based. We find that this reduces the degree of subjectivity associated with different loan officers’ interpreting the ratings in different ways.

Environmental Practices

To a greater degree than socioeconomic due diligence, our environmental due diligence focuses on avoidance of harm. We recognize that our clients, like all agricultural businesses, inevitably leave an environmental footprint — an environmental impact in the negative sense of the term. We seek to identify businesses that minimize this footprint and maintain the health of their local ecosystems.

While an enterprise may generate positive environmental impact as well (e.g., by engaging in a reforestation program or building the soil health of previously degraded land), a loan officer's primary objective is to ensure that the business and its farmers are not engaged in practices that will undermine the long-run sustainability of the ecosystem, the business, and the larger supply chain. In particular, Root Capital does not lend to businesses that:

- Clear land of high conservation value;
- Use or permit the use of hazardous agrochemicals; or
- Dispose of wastewater or solid waste in a way that materially threatens human or environmental health.

Because sustainable agricultural practices are heavily shaped by environmental context and the specific crop in question, our environmental due diligence begins with seven open-ended questions (Sections 1.1–1.7) centered on the local landscape and the enterprise and its producers' environmental strengths, weakness, and improvement opportunities. Beyond data collection, these questions serve to generate honest dialogue that is critical to collecting accurate information.



An organic fertilizer plant, financed in part by Root Capital, at the coffee cooperative C.A.C. Chirinos in Peru. Cooperative staff create the organic fertilizer from members' waste coffee pulp, and then distribute the fertilizer to members at affordable rates. This program ensures that soil nutrients removed by the coffee plants are returned to the farm to maintain soil fertility and health.

Loan officers also draw upon an Industry-Specific Guide that identifies the key risk areas and best agricultural practices associated with the crop in question. These resources build loan officers' knowledge base, focus their analysis, and allow for a more informed conversation with the client. They are designed to supplement the more general Environmental Scorecard.

As with the Social Scorecard, loan officers then rate the performance of the business from "AAA" down to "C" (representing a disqualifying "trigger" practice) in seven performance categories (Sections 2.1–2.7). These categories are articulated below and were developed over a two-year period, beginning in 2010 with a review and synthesis of major third-party verification schemes (e.g., fair trade, Rainforest Alliance, UTZ), multi-stakeholder sustainability platforms (e.g., Sustainable Agriculture Initiative, the Equator Principles), and published research from conservation organizations (e.g., University of Minnesota's Institute on the Environment, Conservation International), and subsequent consultation with expert partners including the World Wildlife Fund and Ecoagriculture Partners.

If a client has an environmental certification that covers 75 percent or more of land under cultivation, the Scorecard generates a baseline rating in each of the categories addressed by the certification. The loan officer may adjust these baselines if s/he feels that the business has exceeded the minimum requirements of the certification or, conversely, appears not to be complying with the certification's standards. As 63 percent of our clients, based on 2012 data, maintain at least one eco-certification, this process applies in over half of due diligence cases.

Environmental Management Systems (Section 2.1)

While not an agricultural practice itself, an environmental management system (EMS) is critical to our clients' ability to implement and monitor their own practices and/or those of their producer-suppliers. The majority of our clients maintain an EMS, often as part of maintaining a certification. Smaller cooperative clients, however, may not have a formal management plan.

When available, loan officers review independently developed environmental management plans (i.e., those not associated with a certification) in order to understand a client's environmental philosophy and efforts to identify and mitigate potential environmental risks. They also consult with external stakeholders, such as technical assistance providers or nonaffiliated farmers in the community, who can provide a third-party perspective. Finally, whenever possible, loan officers conduct a small number of field visits in order to spot-check farm-level practices. However, Root Capital is not a certifying organization, and while farm visits represent another data point from which to triangulate, they do not serve as formal audits.

A client's ability to develop and implement a strong EMS, whether as part of a certification or independently, indicates a degree of management capacity associated with lower credit risk, all else being equal.

Land Use, Ecosystem, and Biodiversity Conservation (Section 2.2)

A biodiversity hotspot, as defined by Conservation International, is an area holding high numbers of endemic species that is facing extreme threat of degradation. Together, these areas once covered 15.7 percent of the earth's land surface but are now reduced to 2.3 percent. In 2012, 76 percent (142) of our clients, representing 255,000 producers, were located within this 2.3 percent area, operating within a number of key hotspots such as the Mesoamerican Forests, the Tropical Andes, and the Eastern Afromontane Mountain Chain.²

² We believe the true number is actually higher, as many of our clients have an urban business address, yet source from producers farming in nearby biodiversity hotspots.

Given the rich biodiversity and fragile ecosystems amid which the majority of our clients and their producer members operate, our environmental due diligence heavily weighs land use practices and conservation measures. In 2012, 64 percent of our clients sourced crops produced in agroforestry systems that integrate trees into farming landscapes in order to mimic, to varying degrees, natural forest habitats. Agroforests provide important ecosystem services. The trees on agroforestry farms, for example, enrich the soil through natural nutrient cycling and strengthen root systems, preventing soil degradation and erosion. By capturing and retaining rainfall, these shade trees also serve a climate-change adaptation and mitigation function, lowering temperatures on farms by an average of 6 degrees Celsius and removing carbon from the atmosphere. In maintaining ecosystems and increasing producers' resistance to climate shocks, agroforestry represents a mutually beneficial long-term cycle between the environment and producers, one that in turn drives the shorter-term business cycle between producers and their business.

If, on the other hand, our due diligence process uncovers the degradation of high-conservation value land³ (e.g., the clearing of primary rainforest through slash-and-burn agriculture), the client is disqualified from financing. These activities are unsustainable in the medium to long term, and moreover, represent a growing reputational risk to commercial as well as impact lenders.

Agrochemicals (Section 2.3)

With over half of our portfolio holding organic certification, agrochemical use is relatively limited among our clients. Root Capital will finance rural enterprises whose suppliers use nonhazardous agrochemicals, however, as long as they are doing so in a safe and responsible manner. While a short-term perspective might allow for dangerous pesticide or herbicide application, a medium and certainly long-term understanding of soil (and human) health and productivity makes the case for responsible agrochemical use. Here, loan officers look for policies and practices in place to ensure that agrochemicals are used responsibly and rationally (i.e., only to the extent needed), without damaging soil structure, water quality, or human health.

³ Areas of High Conservation Value are natural habitats of outstanding significance or critical importance due to their high environmental, socioeconomic, biodiversity, or landscape values. These include national reserves, biodiversity hotspots, primary forests, or other areas that have not been degraded, that provide important ecosystem services, that host significant biodiversity, and/or that are critical to traditional cultural identities.

Agrochemical Use and Credit Risk

In 2010, a Kenyan fresh vegetable exporter and first-time Root Capital client received a trade credit facility of EUR 44,600 to support the purchase of vegetables from contracted smallholder farmers. At the time, the company allowed its contracted outgrowers to purchase and apply pesticides from a list of approved agrochemicals.

In the course of environmental due diligence, we looked at the business's plan to train its outgrowers in responsible agrochemical application. We did not, however, fully evaluate whether the client's extension team would be able to monitor the producers' adoption of such techniques during the growing season.

Despite having received training, multiple outgrowers bought cheap but unapproved pesticides and applied them in excessive doses. Unaware of the environmental and business risk introduced by their producers, our client collected, packaged, and exported the vegetables, only to have its first shipment to Europe rejected due to pesticide residue levels that violated the requirements stipulated by its buyers. Over the next two and a half months, the company was forced to sell most of the harvest at or below cost due to excessive pesticide residues.

In the case of a large-scale, sophisticated horticulture operation, Root Capital would be able to ask the enterprise for its professional environmental management plan. In the case of smaller agricultural businesses sourcing from smallholder farmers, a loan officer must dig deeper. Dozens or hundreds of smallholders are agreeing to follow certain environmental standards, and so our due diligence must focus heavily on the business's strategy for engaging with and monitoring these suppliers.

In this example, the company responded by hiring a team, supervised by its own agronomists, to perform pesticide application on behalf of its growers. Root Capital responded by strengthening our environmental due diligence. While our approach still requires a review of agrochemicals used in production (when applicable, the majority of our clients being certified organic), we now go a step further by evaluating the way our clients monitor smallholders' environmental practices, as well as a limited number of farm visits that provide a sense of producers' awareness of environmental risks. This can be a complex and time-consuming exercise, but as we learned in Kenya, it is also a necessary one.



Example of use of leaf litter as ground cover by a member of the coffee cooperative Juan Sabines in Mexico. Ground cover, whether composed of leaf litter, grass, or planted cover crops, is important for retraining soil moisture, building soil fertility, and reducing wind and water erosion.

Soil Management (Section 2.4)

Soil health serves as the foundation of agricultural productivity. When our clients and their smallholder suppliers employ soil conservation practices such as the use of live barriers, cover cropping, and contour planting, and soil fertility techniques such as composting, crop rotation, and intercropping, we have greater confidence in the medium- and long-term health of their soil and in the sustainability of their yields, the stability of the business to which they sell, and the overall security of the supply chain.

Training in Sustainable Soil Management

Root Capital client Juan Sabines, an organic- and fair trade–certified coffee cooperative in Mexico, provides its members with ongoing training on sustainable soil management practices. Interviews with members suggest that through this training, Juan Sabines has facilitated farmers' transition from no-input, nutrient-mining practices that deplete the soil to practices that build soil health and fertility. Producers report adopting a number of improved practices since joining the cooperative, including the use of organic compost to boost soil fertility, organic litter to build topsoil and retain soil moisture, and live (i.e., vegetative) barriers to reduce wind and water erosion — all practices tied to improved farm-level soil health and higher productivity. Producers cite the value of the training provided by the cooperative: “[Before joining the cooperative] we didn’t know where to go for the information. But now we do. Now that we are in the program, the *técnicos* [cooperative agronomic trainers] provide instructions and tell us how we need to do it. This has given us good results.”

Water Use and Wastewater Management (Section 2.5)

Water for irrigation and processing, or the lack thereof, is another important determinant of agricultural productivity and sustainable supply security. This is particularly true in the case of “thirsty” crops such as cotton and rice, and when lending in these sectors, we pay particular attention to water availability and use. Clients in the largest sector of our portfolio, coffee, depend nearly exclusively on rainwater for production but use significant quantities of water for processing. The disposal of this effluent can represent a significant environmental risk, especially when processing is performed centrally rather than at the farm level. Here, we look for responsible disposal of wastewater, including monitoring and treatment through filtration or other methods as necessary, to ensure compliance with relevant water-quality standards.

Solid Waste Management (Section 2.6)

The waste produced by the large majority of our clients is organic, consisting of coffee pulp or cocoa pods, for example. In these sectors, among others, there is both an environmental and business case for composting the organic material in order to return extracted nutrients to the soil and maintain its fertility. More sophisticated coffee clients do this on a centralized level or train their supplier members in how to do so at the household level. At a minimum, we ensure that clients do not dispose of solid waste in a way that threatens human or environmental health, such as by dumping concentrated organic waste into streams or rivers.

Energy Source and Efficiency (Section 2.7)

With the majority of our portfolio engaged in production, aggregation, and export, energy use has been of limited relevance to Root Capital in the past. However, as our portfolio of agroprocessors (e.g., of cashews, dried fruit, or staple crops) grows, we find a small but growing number of clients interested in adopting renewable energy technologies to power their operations. The environmental due diligence process can help Root Capital and our clients to identify such investment opportunities.

Financing Renewable Energy

Productos Rivera is a private Mexican enterprise that purchases mangoes from smallholder producers and processes, dries, and packages them for export, generating seasonal employment for over 150 women in Sinaloa. Its revenues have grown steadily over the past few years, reaching \$825,000 in 2012.

In 2013, after two years of consultations with Root Capital and external experts, Productos Rivera applied for a five-year, \$250,000 loan to expand its production facility, \$67,000 of which is dedicated to the installation of a 180-square-meter passive solar installation by Solar Wall. The business opted for this solution, which will pass preheated air from the roof of the plant into propane-fired dryers, rather than solar panels due to the system's efficiency of energy transfer and annual cost savings. Early calculations estimate that the annual renewable energy output is 350 million BTUs, with a savings of 31 tons of CO₂ annually. This is roughly equivalent to the amount of carbon emitted by burning 3,000 gallons of gasoline or the amount of carbon sequestered by 23 acres of forest. Productos Rivera anticipates the technology will also save the company about \$13,000 a year in propane, meaning the investment will pay for itself within five years.

Context and Additionality

The impacts described thus far are fundamentally the impacts of the businesses, which financiers support. Depending on its mission and strategy, a financier may seek to further increase its own impact by seeking out those businesses and those farmers for whom unmet need is greatest.

To understand where unmet need is greatest, financiers must look to the context of the business and its community. Specifically, Root Capital considers:

- The level of access to finance of the business;
- The level of poverty of the farmers; and
- The degree of vulnerability of the enterprise and farmers to civil conflict, natural disaster, or climatic shocks.

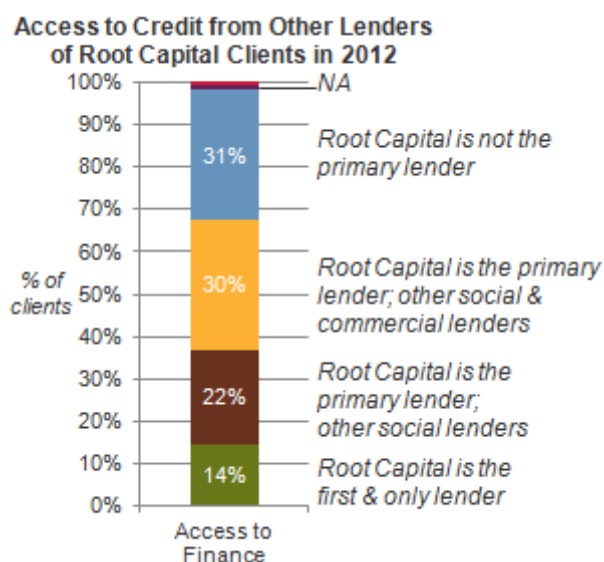
In contrast to the “mutually beneficial cycle,” which largely improves the creditworthiness of the business, our experience is that there is a tradeoff between financial returns to the lender on the one hand, and the intensity of unmet need of the agricultural business on the other. Yet, if financial markets are to meet the full demand for credit of agricultural businesses, at least some lenders must focus their growth strategies on underserved geographies and sectors. Seeking out such underserved markets is one of the most important roles that impact investors can play.

Additionality (Social Scorecard Question 2.1)

Social financiers use the term additionality to mean that we are providing financial products and services that our clients could not otherwise obtain, rather than replacing credit and training that others are currently providing or could provide. In our Social Scorecard, Root Capital evaluates each client’s level of access to finance from other social and commercial lenders as a proxy, however imperfect, for the additionality of our loan.

Our experience is that there is a tradeoff between additionality and financial returns to the lender. Client size, as measured by client revenues, serve as a proxy for both. Larger businesses on average require larger loans (often of \$1 million or more) that are more profitable for lenders to serve. Of course, these businesses are large only within the spectrum of small and growing businesses that Root Capital serves, and the end-beneficiaries — small-scale farmers — are the same for large and small enterprises.

However, larger businesses are likelier to be served by other nonprofit or even commercial lenders. They often still have unmet financial needs that require our support. Nevertheless, because they have other options, larger businesses arguably need our lending less on average than the small, early-stage businesses that receive the first loan of their existence from Root Capital every year — typically loans of \$100,000 or less that are high-impact but not profitable to Root Capital.



Root Capital's strategy hinges on the fact that these small businesses tend to grow and take out successively larger loans. Their growth not only increases impact but also underpins our business model, given that the revenue from growing clients cross-subsidizes loans to the next round of early-stage businesses.

Different lenders will naturally seek out different positions on the spectrum of additionality and financial returns. The challenge for mission-driven agricultural lenders like Root Capital is to continue to innovate new business models to minimize or overcome the tradeoff and achieve both.

Poverty Level of Smallholder Farmers (Social Scorecard Question 2.3)

Each extra dollar of income makes a bigger difference to a poorer population, all else being equal. By identifying and supporting these populations, impact investors can increase their impact.

However, it is easier said than done to estimate the poverty level of a given group of farmers, and to compare the poverty levels of two or more groups of farmers. In our Social Scorecard, loan officers estimate whether the farmers associated with each agricultural business likely live on:

- \$1.25/day per capita or less (in accordance with the international extreme poverty line)
- \$2.00/day per capita or less (in accordance with the international poverty line)
- \$4.00/day per capita or less
- \$10.00/day per capita or less
- \$10.00/day per capita or more



Natividad Morales is a coffee farmer and cooperative member in Esquipulas, Guatemala.

Our experience has been that loan officers simply do not have the information necessary to make

accurate estimates of poverty levels, and cannot obtain it without surveying farmers directly. Therefore, we are exploring other ways to increase the accuracy of loan officers' estimates of poverty levels. We are piloting the Progress Out of Poverty Index (PPI) methodology developed by the Grameen Foundation, which uses 10-question surveys of household assets to estimate the poverty level of a group of people. We are also exploring overlaying district-level poverty data collected by governments via censuses and other surveys onto maps of our borrower populations. We will use both of these alternate methodologies to spot-check and improve the accuracy of loan officer estimates.

Vulnerability (Social Scorecard Question 2.2)

All of our clients are vulnerable to volatile commodity prices, climate change, and myriad other factors. In addition, some enterprises and farmers are vulnerable to civil conflict and violence; acute natural disasters such as a recent hurricane or widespread landslides; or particularly difficult or unpredictable weather patterns, such as the droughts in Eastern Africa. Loan officers make qualitative judgments about the severity of the vulnerability, and we use this information as a rough indicator of what percentage of businesses we lend to suffer from severe vulnerability.

Final Scoring and Loan Approval

Once completed, each due diligence tool generates a final ranking that ranges from “Exemplary” to “Does Not Meet Root Capital Standards.” The loan officer may comment upon or argue for a different final scoring if s/he feels it is inaccurate or would like to offer additional context. A “C” rating in any category represents a violation of a social or environmental “trigger” and disqualifies the business from financing, unless the loan officer can demonstrate that the enterprise is committed to taking concrete and immediate remedial action. In that case, the loan officer must propose loan covenants for review by Root Capital’s Global Executive Committee that establish a clear strategy, timeline, and monitoring procedure for ensuring remedial action by the enterprise.

To receive a rating of Strong Social Impact:

- The enterprise and its associated producers must have significant unmet needs in terms of access to finance, income levels of producers, and/or vulnerability; and
- The enterprise must somehow increase the level and/or stability of farmer incomes. That is, it must receive an AAA or AA in any of questions 3.1, 3.2, 3.3, 3.4, 3.5, or 3.6.

In the case of the Environmental Scorecard, the loan officer complements the final scoring by answering five questions that speak to the identification of the most relevant environmental risks or concerns, given the enterprise’s context, crop, and practices, and the designation of the two or three most important issues to review with the enterprise in the following year. (Full-blown environmental due diligence is conducted once every three years.)

If the loan officer has any questions or concerns over a client’s environmental practices, in particular a possible violation of one of our environmental “trigger” practices, s/he draws upon the expertise of Root Capital’s Environmental Working Group. The Group consists of experts in sustainable agriculture and environmental conservation and includes current and former members of Root Capital’s Board of Directors, as well as non-Board experts, with experience working with the World Wildlife Foundation, Rainforest Alliance, the Pew Charitable Trusts, and the International Finance Corporation.

We define an exemplary environmental performer as an enterprise that receives a score of A or above in each of the seven performance categories, indicating that the enterprise and/or its producer-suppliers are practicing agriculture in a manner that sustains and/or enhances farm-level environmental health.

Once a loan has passed the acceptable threshold, achieving a higher social or environmental rating does not result in its being prioritized in our approval process or in any changes to the interest pricing or other terms of the loan. Rather, our approach is to set standards that are consistent with our mission, and then finance all clients that meet those standards.

Conclusion

Root Capital's vision is to catalyze a thriving financial market serving agricultural businesses that generate long-term social, economic, and environmental sustainability for small-scale farmers and their communities around the world. We hope that by sharing our social and environmental due diligence methodology, we lower the barrier for other financiers to incorporate social and environmental concerns into their own due diligence. We invite other organizations to share their own approaches and contribute to the emerging standards and best practices around social and environmental due diligence, thereby enabling the social finance sector to focus its lending and investment on the businesses that will generate the greatest impact on the 2.5 billion people living on less than \$2 per day, and on the natural environment upon which we all depend.



A storage facility for chemical fertilizers and other agrochemicals on a certified coffee farm in Kenya. This secure facility, removed from living areas and local water bodies, ensures that agrochemicals remain contained and do not contaminate the local environment or threaten human health.