



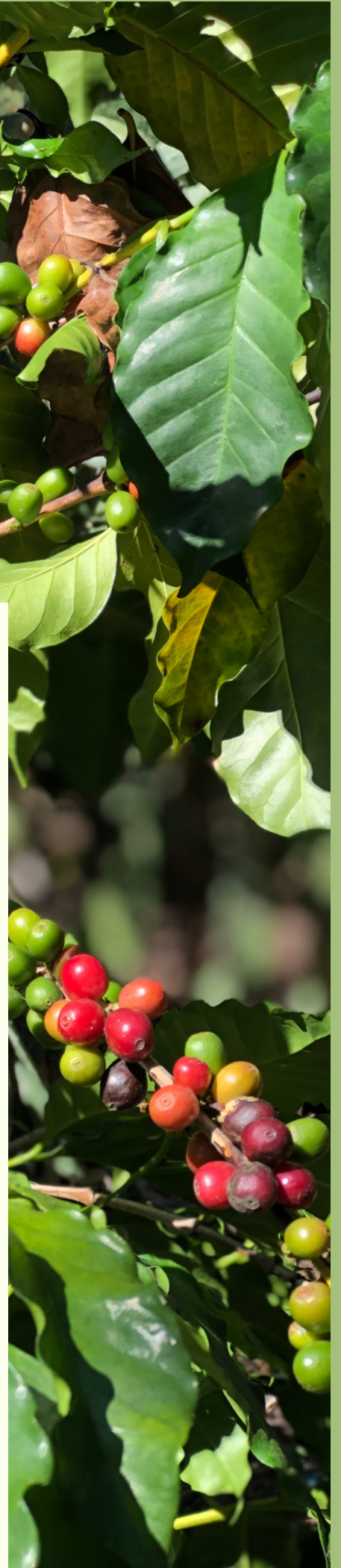
The Coffee Gardens

Measuring Impact on
Farmers: A Triple Bottom
Line M&E Framework

LSE Consulting Report: 2022-2023



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1. Acronyms

CBFS – Coffee-Based Farming Systems

GAP – Good Agronomic Practices

GHG – Greenhouse Gas

LSE – London School of Economics and Political Science

M&E – Monitoring and Evaluation

NGO – Non-Governmental Organization

SSA – Sub-Saharan Africa

SBM – Sustainable Business Model

SE – Social Enterprises

TCG – The Coffee Gardens

ToC – Theory of Change

ToR – Terms of Reference

TBL – Triple Bottom Line

VSLA – Village Savings and Loans Association





2. Executive Summary

Established in 2017, The Coffee Gardens (TCG) is a social enterprise (SE) that produces coffee in cooperation with over 600 farmers in Uganda's Mt. Elgon region. Throughout their expansion, their objective has remained the same: to produce internationally sold specialty Arabica coffee while improving coffee processing practices and creating better incentives for farmers. Working with the concept of the Triple Bottom Line (TBL), they strive to provide positive, tangible impacts for their farmers by utilizing best environmental practices and providing farmers training and tools for empowerment. These activities are critical in Uganda, where despite the country's prominence in the African coffee market, smallholder farmers face considerable vulnerabilities induced by climate change and high price volatility.

Academic literature explains that SEs can help smallholder coffee farmers achieve higher living and production standards by providing support for obtaining sustainable coffee certifications and in expanding production volumes. At the same time, research has found that the results of these initiatives in Uganda's Mt. Elgon region are mixed and depend on the implementation of good environmental and agricultural management and poverty-reducing standards. In other words, for an involved actor like TCG, it is essential to measure the impact of their initiatives on the coffee farmers they are working with and to adjust their initiatives accordingly.

For this reason, TCG has asked our London School of Economics and Political Science (LSE) consultancy team to design an all-encompassing Monitoring & Evaluation (M&E) Framework to evaluate the business' impact on farmers along the TBL dimensions of profitability, environmental and social impact. This framework had to be context-appropriate and draw on academic research for its methodology. Eventually, several deliverables were added to the project to make it as cohesive as possible: a Theory of Change (ToC), a Vulnerability Index, a Full Questionnaire, and a Scorecard.

Our deliverables were informed by several considerations. M&E literature has elucidated that results-based M&E systems typically include three levels on

which the business is analyzed and indicators are developed: (immediate) outputs, (intermediate) outcomes, and (long-term) impact. The literature recommends new M&E systems should not be limited to pre-existing data, but should include new data where necessary. Indicators should be clear, relevant, cost-efficient, adequate, and monitorable. Furthermore, it is essential that M&E frameworks for SEs consider the business' social and environmental impacts as of equal importance to their profitability. Metrics for environmental impact typically attempt to assess a business' effect on its natural environment throughout the production process, whereas social impact is mainly defined as effects on stakeholders. Complexity varies among models with some expressing dimensions singularly and then combining them in a scorecard, while others integrating various dimensions to address their intersectionality.

Any M&E Framework, especially one that focus on vulnerable populations, i.e. coffee farmers, needs to be built upon rigorous ethical checks. Eventually, we settled on two complementary models, the Newman and Brown's Decision-Making Model and Gopichandran and Krishna's M&E Ethics Model, for guiding the decision-making process of building M&E systems.

Our M&E framework is structured based on industry standards and our ToC. The output level captures the immediate effects of TCG's interventions related to their coffee farmers. Lower-level outcomes measure how the intervention outcomes affect the behavior of farmers and other intermediate factors. These were grouped into five indicator categories related to the TBL: Environmental Protection, Social Inclusion, Financial Inclusion, Economic Empowerment, and Physical Protection of Farmers. The subsequent higher-level outcomes reflect the long-term impacts of these lower-level outcomes and are categorized into four macro-categories: Good Agronomic Practices, Improved Yields and Income, Reduced Vulnerability, and Farmer Loyalty. Although the latter was treated separately in the ToC due to issues with quantifying its impact on farmers, it was included in the M&E framework to acknowledge its importance for TCG's business model and showing the value of TCG's interventions for farmers. Lastly, to allow for critical analysis of TCG's impact on marginalized groups among their farmers, the indicators are disaggregated according to sex, household by type of head (male or female), age, and production size.



The ToC and the literature on social, environmental, and economic issues in Uganda's coffee sector inform the indicators. Some indicators use existing TCG data, for others, we have suggested additional data collection based on consultation with TCG to ensure their relevance to the local context. The Full Questionnaire includes all questions for new data collection. Lastly, to effectively measure TCG's impact on farmer vulnerabilities, the higher-level outcome indicator Reduced Vulnerability is based on a separate formula that compares yearly changes in a set of pre-defined sources of vulnerability (risks), as well as a set of predefined responses to these vulnerabilities (responses).

To allow for a comprehensive overview of TCG's, and their farmers', performance, the two scorecards - one addressing the organization's overall impact across the TBL, and one at the farmer level allowing TCG to better target individual farmers - give a grade to each indicator category from 0-100. In total, the M&E framework allows TCG to analyze the work of their own organization and will, over time, highlight areas of improvement. However, a few limitations should be considered. Overall, the M&E Framework is more extensive than what is conventional as it analyzes the entire business rather than a specific project or intervention. Additionally, even further data collection would allow for a framework which more precisely captures the impacts of TCG interventions on farmer livelihoods. This includes, for example, the inability to disaggregate by altitude or by the physical size of plots, which both influence the farmer's productivity and vulnerability. Our team did not suggest such data collection at this time as it may not be feasible for the TCG team. Nonetheless, by applying the stipulated M&E framework and by continuously updating indicators and identifying areas for adjustment, we are confident that TCG will grow its impact over time.



3. Introduction

3.1 The Coffee Gardens

Established in 2017 by founders Dana Siedem, Shakeel Padamsey, and Michael Buteera Mugisha, The Coffee Gardens (TCG) is a social enterprise (SE) that works to prioritize people over profit. After completing a successful pilot season with a farming family, the business has grown to include over 600 farmers in the Mt. Elgon region. TCG manages two collection centers, one processing station and one drying yard and works with the communities in the immediate vicinity of these centers. Despite the increase in scope, the organization's objective has remained the same: to produce specialty internationally-sold Arabica coffee while improving coffee processing practices and creating better incentives for farmers (The Coffee Gardens [TCG], n.d.).

TCG strives to create tangible impact on their farmer partners. As of the 2021/22 season, TCG hired 227 local farmers to carry coffee and work at their coffee stations, trained 214 farmers on environmentally-friendly practices, and distributed thousands of tree seedlings (TCG, 2022a). These initiatives speak to TCG's goal of maintaining business profitability while continually building an understanding of this Eastern Uganda farming community's needs.

At the heart of the TCG strategy lies the triple bottom line (TBL), a social business model which equally prioritizes economic, social, and environmental goals (TCG, 2022a). To implement the TBL strategy, TCG produces quality specialty coffee in partnership with small-holder farmers while implementing social and environmental initiatives. These include but are not limited to, financial literacy training, facilitating access to safe savings programs, sustainable farming training, hiring from local communities, and offering above-market rates for coffee. These and other company interventions aim to improve agronomic practices, yields, and income, and reduce farmer vulnerability, to create value for farmers. While working alongside the Mt. Elgon farming community, TCG works to exemplify a strong SE, contributing to social progress, and running a successful private enterprise.

3.2 Defining The Triple Bottom Line

TCG is one of many businesses to operate according to TBL principles. This term first appeared in 1997 to describe a business reporting method that extends beyond economic performance to include environmental quality and social equity practices. These elements reflect the three "bottom" lines upon which business reporting is conducted, measuring them separately with metrics incorporating multiple relevant factors (Sherman, 2012).



Over time, the TBL concept has evolved from a style of reporting to an integral part of the so-called sustainable business model (SBM), also referred to as the SE model, which works along the triple goals of people, planet, and profit. Alternative to the neoclassical-economic business model, sustainable businesses or SEs put environmental sustainability and social justice at the same level of importance as business profitability instead of considering it as an additional "bonus" (Stubbs & Cocklin, 2008; Katz & Page, 2013).

In practice, SBM encompasses many facets of business strategy, from gaining a strategic advantage over competitors to planning and implementing business activities (Geissdoerfer & Vladimirova, 2018). Evaluation and reporting on the TBL can help SEs achieve their goals by convincing stakeholders of the importance of sustainability and equity considerations alongside profit (Stubbs & Cocklin, 2008).

3.3 The Coffee Sector in Uganda

Coffee has historically been culturally significant as a sign of friendship and hospitality and now brings 20% of Uganda's foreign exchange earnings with strong national investment and dedication to the coffee sector since the 1990s (Akoyi & Maertens, 2018; Uganda Coffee Development Authority [UCDA], 2018). Currently, Uganda is the second largest coffee exporter in Africa. Coffee is a major export for smallholder Ugandan farmers with 1.7 million smallholder producers in 108 districts out of the wider five million employed in the sector through farmers, coffee traders, and employees within the roasting and export corporations (Akoyi & Maertens, 2018; UCDA, 2018).

Uganda produces two types of coffee beans: Robusta and Arabica. Robusta is grown four times as much as Arabica (UCDA, 2018). Altitude is an important factor for coffee species and their survivability, with Arabica coffee growing at higher altitudes (UCDA, 2018). Very few coffee farms practice mono-crop farming, and Ugandan coffee farms generally intercrop with beans and bananas. Shade-grown coffee techniques are expanding in Uganda with initiatives/organizations such as the Rainforest Alliance and Fairtrade (Akoyi & Maertens, 201; UCDA, 2018).

Coffee planting and harvesting seasons vary by region within Uganda. The planting season is normally between March and May, the first rainy season, and from September to November, the second rainy season. The harvesting seasons have both main and minor harvests. In the East, this takes place largely from November to January for the main harvest, and May to August for the minor or “fly crop” harvest (UCDA, 2018).

Despite coffee’s significant role in the Ugandan market and for smallholder farmers, the sector has considerable vulnerabilities due to its high price volatility (International Coffee Organization, 2020) as well as climate change, which is already impacting the sector (Mulinde et al., 2022). As a result of these and other risks, coffee farmers are increasingly in need of initiatives that comprehensively address their economic, social, and environmental vulnerabilities.





4. Literature Review

4.1 Social Enterprises and the Coffee Sector

The literature on SEs points equally to both limitations and opportunities regarding profitability and environmental and social impact. Authors characterize the social entrepreneur as “an individual who recognises, evaluates and exploits business opportunities that result in creating social value” (Hynes, 2009, p. 114). These businesses, which prioritize people and the planet alongside profit, present limitations and opportunities unique to their business objectives, which are more complex than a regular for-profit business model.

One strand of literature points to challenges a social business may face when pursuing growth in the business context. As profit generation and social impact creation are not mutually exclusive endeavors for SEs, a key challenge for these entrepreneurs is measuring the scale and impact of their businesses (Molecke & Pinkse, 2017; Hynes, 2009; Nguyen et al., 2015). Economic indicators are essential for measuring businesses’ profitability, but social impact metrics are equally as important to ensure organizations meet their mission (Nguyen et al., 2015). Additionally, the measurement of a social business is particularly complex because it must align with social goals and values, not only profit margins, as is the case for strictly for-profit business models (Hynes, 2009).

A second strand of literature highlights opportunities for social businesses to create meaningful change for the communities they work with. Several authors are particularly optimistic about the social impact potential in the coffee sector via specialty coffee certifications. As SEs are committed to creating social impact, coffee certifications are expected to provide opportunities to do so. These certifications target sustainability in agriculture, translating to “economic viability for farmers, environmental conservation, and social responsibility” (Giovannucci & Ponte, 2005, p. 286). There are multiple certifications available to coffee producers (Fair Trade, Organic, Bird-Friendly, etc.), almost all aimed at sustainability (Giovannucci & Ponte, 2005). These certifications allow small-holder farmers to move up the coffee global value chain and grant access to

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more lucrative markets. Case in point, studies show that certifications can increase income and land and labor productivity as well as reduce poverty for smallholder farmers (Akoyi & Maertens, 2018, p. 1792).

Further literature in this vein considers membership in coffee farmer cooperatives to be “the primary intervening variable affecting prices received at the farm gate” (Bacon, 2005, pp. 504-505). Coffee cooperatives encourage production volume for small-holder farmers, allow access to certified markets, and often allocate a portion of profit to fund social impact programming such as technical assistance, provision of credit, housing, and education for farming families (Bacon, 2005). This literature illustrates how the specialty coffee market has opened space in the industry for SEs to thrive, not only by capturing profit but also by prioritizing social impact on farming communities.

4.2 Social Enterprises in the Ugandan Coffee Sector

The use of certifications and “private sustainability standards” by SEs in the coffee sector has been promoted by the Ugandan government since the mid-90s to help upgrade Uganda’s coffee sector’s place on the international market (Akoyi & Maertens, 2018). According to Ssebunya et al. (2019), about 10% of all Ugandan coffee is certified by varying organizations. The entrance and integration of certifications into the Ugandan coffee market began with the Fairtrade Organization and has continued through organizations such as Organic (Org), Utz, the Rainforest Alliance, and 4C. These organizations offer certifications for adhering to “sustainable” standards including interventions to meet environmental targets, best farm management and agricultural practices, and improve livelihoods of smallholder coffee producers (Akoyi & Maertens, 2018).

Though the intentions of these certifications have been positive, the impact does not always match. Akoyi and Maertens (2018) found mixed results in certification impact focusing specifically on the Mt. Elgon region of Uganda. Some combined certification schemes, such as Fairtrade-Organic, have not led to a significant increase in income for smallholder farmers. In fact, they can incentivize farmers to reduce “land and labor productivity”, and as coffee prices have not increased enough to offset this loss in revenue, the impacts of these combined

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certifications fail to reduce poverty in the region (Akiyo & Maertens, 2018). Conversely, combined certification schemes such as Utz-Rainforest Alliance-4C have led to an increase in land and labor productivity, and have subsequently increased smallholder coffee farmer incomes. Additionally, the researchers found that in areas that experience soil degradation and below-average yields, but follow good standards in agricultural management, Fairtrade can have a positive effect without Organic certification. Altogether, it can be deduced that when environmental, agricultural management and poverty-reducing standards are implemented in conjunction, there is a more positive effect than focusing on only one certification. These research outcomes support business strategies with intersectional goals such as the TBL that involve social, economic, and environmental outcomes.

4.3 The Coffee Sector and the Environment

4.3.1 Environmental Impacts of Coffee Farming

Concerning the coffee sector in Uganda, there are a few environmental and social issues that SEs like TCG need to be especially aware of. Outside of the Greenhouse Gas (GHG) emissions associated with coffee postproduction, energy usage in the process, and its transportation and shipping globally, several environmental impacts are associated with coffee production. These include water usage, pollution, and contamination, agrochemical usage, and soil quality (Moore, 2021).

Water processing uses significant amounts of water with about 15-20 L required for 1 kg of coffee bean (Ijanu et al., 2020). This can exacerbate water stress in different contexts. Water pollution and contamination is primarily a result of the processing of coffee with water and the consequential contamination of waterways through chemicals such as tannins, phenolic, and alkaloids which inhibit biological degradation, as well as through dark coffee effluent (Ijanu et al., 2020). The chemicals that contaminate the water can lead to an anaerobic condition (where waterways become oxygen-poor). Furthermore, large quantities of effluent lead to water darkening which negatively affects photosynthesis. Water darkening combined with chemical contaminants leads to eutrophication which has drastic impacts on aquatic ecosystems and wildlife (Ijanu et al., 2020).

Agrochemical usage through inorganic pesticides and synthetic fertilizers can further contaminate waterways (Moore, 2021). Soil quality reduction is a further issue especially in plantation coffee, when mono-crop farming of solely coffee beans is utilized, and/or when multiple crops are farmed in the same space, but they compete for similar nutrients (Moore, 2021).

4.3.2 Climate Vulnerability and the Coffee Sector in Uganda

Coffee-based farming systems (CBFS) already show signs of vulnerability to climate risk through issues such as diseases, water stress, and pests in Sub-Saharan Africa (SSA). Climate vulnerabilities will only increase with rising temperatures and increasingly volatile rainfall, especially for rain-fed agriculture (Mulinde et al., 2022). As many smallholder farmers rely on coffee and related crops, with about half of their crop income from coffee and the other from crops like bananas, these households are highly vulnerable to the climate change effects that are already affecting their livelihoods. Arabica and higher altitude coffees will fare better in the face of climatic change, but with rising climate risks, it is important for steps to be taken to mitigate and adapt to coming environmental changes (Mulinde et al., 2022).

4.3.3 Climate Resilience Pathways in the Coffee Sector

Many mitigation and adaptation practices can be adopted throughout coffee production to respond to climate change. Adaptation of coffee growing techniques can have a strong positive effect with methods like shade-grown coffee. Shade-grown coffee techniques integrate coffee plants with native shade trees. This promotes biodiversity, increases habitats, improves soil and farm quality, and increases the quality of coffee beans (Wall, 2020). Furthermore, shade-grown coffee can improve water quality, create natural fertilizers from surrounding trees, reduce the necessity for “intense herbicide preparations” in coffee gardens, and provide some natural protection from rising temperatures (Moore, 2021; Wall, 2020). Shade-grown coffee has further impacts such as increasing carbon sequestration due to an increase in trees and foliage. To mitigate the overuse of water for coffee processing in water-stressed environments, farmers can use recycled water to decrease “new” water usage. This, with strong water processing and decontamination mechanisms to cleanse

the chemicals and effluents from the water before being distributed into natural waterways, can cause a significant reduction in coffee production consequences on water (Ijanu et al., 2020). Further adaptation measures include “mulch, trenches, agroforestry, terraces, soil bunds, organic manure, grass strips, cover crops, and minimum tillage” (Mulinde et al., 2022, p. 15). These measures together can vary in effectiveness depending on regions and coffee garden types but overall they can be an important part of improving livelihoods in CBFS and preparing for ongoing climatic changes (Mulinde et al., 2022).

4.4 Gender Considerations

The social norms and collective governing fostered through collective action are essential tools for enhancing female empowerment in the agricultural sector (Care, 2021). Scholarship on women’s participation in collective action focuses on several challenges women face when participating in agricultural activities, all of which impact their earning potential. These challenges include a lack of access to capital, water, and land, minimal control over resources, and moving from subsistence agriculture to higher-value chains (Selhausen, 2016). In many SSA countries, for example, land tenure is structured such that land passes to sons, often leaving female family members with either no access to land or access only via their husbands or fathers (Chigbu, 2019). This lack of ability to control resources impacts their inclusion in decision-making about income-generating activities and therefore, their earning potential. When access to resources (as well as other barriers to equality) is restructured, female farmers are able to increase their earning potential and participate in their communities with more agency.

When analyzing women’s participation in the agricultural sector, it is important to recognize the degree of agency they have in these spaces. Selhausen (2016) defines agency as women’s “ability to take autonomous choices in life and to control resources” (p. 134). In farming communities, this may require analysis of access to land, decisions about cooperative membership, and control over family finances, and may even extend to the agency to choose their own husband. Sen (1999) illustrates how women’s agency may be restricted by culturally embedded patriarchal conditions which constrain their economic opportunities and limit

personal capabilities. Understanding female agency, in context, is essential to understanding their participation in agricultural activities as well as in collective action.

In this vein of literature, collective action is positioned as a potential solution to these gendered divides. Collective action which includes both female and male participation can help to mitigate barriers to female agency because collectives “contribute to nascent shifts in gendered social norms towards gender equality and more equitable relationships between women and men” (Care, 2021, p. 49). Collective action contributes to female empowerment, specifically economic empowerment, through increased income and control over earnings (Care, 2021). As agricultural entrepreneurs included in collective action, female farmers can negotiate salaries, increase output, and therefore profit margins, all of which increase their earnings and improve agency within as well as outside of the household. The inclusion of female farmers is an essential aspect of farming cooperatives with the intent to improve the livelihood of farmers. For this reason, in our team’s M&E Framework, we not only disaggregate data by gender, where possible, but we also consider how female farmer participation can be measured in addition to overall farmer participation.

4.5 Evaluating Impact of Social Enterprises

4.5.1 Capturing Impact with Monitoring and Evaluation

Literature on M&E highlights the differentiation between traditional implementation-based and results-based M&E systems. Traditional implementation measurement focuses on inputs and activities with the intent to analyze budgets and funding or identify project constraints whereas results-based measurement is achievement-oriented, looking at outputs, outcomes, and impact (Binnendijk, 2000). As our work focused on capturing the impact of TCG, we focused on results-based M&E systems. We define the three levels of typical results-based M&E systems below, based on definitions from Binnendijk’s OECD report (2000):

Outputs: the immediate results of activities (interventions) that come in the form of products and services given to direct beneficiaries.

Outcomes: intermediate effects or consequences of project outputs that may include short-to-medium term changes (including behavioral) that occur among the beneficiaries.

Impact: the development objective or impact in the long-term with wide-spread implementation. Is usually not attributable to specific projects but to the cumulative efforts of the agent.

Each of these elements can be transposed onto a tier of a results-based monitoring framework with their own indicators. When selecting indicators in this process, several significant factors must be considered.

First, one must decide the use of quantitative and qualitative indicators. In a survey of non-governmental organizations (NGOs) regarding monitoring systems, Sawadogo-Lewis et al. (2022) found that qualitative indicators were rarely used despite a desire for higher implementation. This is likely due to the time-consuming nature and high cost of collecting, measuring, and evaluating such data (Kusek & Rist, 2004). Nevertheless, qualitative indicators can be useful for capturing impact specifically through the lens of perceptions, attitudes, beliefs, and behaviors, as long as they are adapted into a quantitative format for M&E purposes (United Nations Population Fund, 2008). Qualitative indicators are particularly useful when measuring “softer” intervention areas, such as interventions in the sectors of human rights, democracy, and governance, whereas quantitative indicators align well with service delivery-oriented businesses/organizations, such as TCG (Binnendijk, 2000). Kusek and Rist (2004) ultimately recommend new M&E systems to initially focus on quantitative indicators with subsequent rounds of refinement integrating more qualitative factors. For these reasons, our Framework uses little qualitative data for indicators.

Additionally, indicators which attempt to capture progress can sometimes use measures that capture perceptions of progress instead (Kusek & Rist, 2004). Indicators must be extremely clear in their framing and data collection to ensure accurate underlying assumptions and understandings.

Lastly, a common error in creating M&E systems is limiting oneself to pre-existing data. “Too often, agencies base their selection of indicators on how

readily available the data are, not how important the outcome indicator is in measuring the extent to which the outcomes sought are being achieved” (Hatry, 1999, p. 55). While such decisions may come down to wanting to avoid additional time-consuming or costly data collection, it can lead to serious degradation in the quality and accuracy of the framework and its ability to elucidate progress.

Two popular methods for qualifying indicators are the SMART (Specific, Measurable, Attainable, Relevant, Monitorable) model, as first introduced by Doran (1981), and Schiavo-Campo’s CREAM acronym (1999). Both checklists have significant overlap, thus we chose to focus on the CREAM model (Figure 1), in which each indicator was required to meet all five qualifiers.

Figure 1: CREAM Model

C - Clear	Precise and unambiguous
R – Relevant	Appropriate to the subject at hand
E – Economic	Available at a reasonable cost
A – Adequate	Provide a sufficient basis to assess performance
M – Monitorable	Amenable to independent validation

Source: Schiavo-Campo (1999)

4.5.2 Monitoring and Evaluation and the Triple Bottom Line

A growing academic and societal interest has risen over the past few years for the use of the TBL in SE monitoring and reporting systems. Despite the lack of a common framework for measuring the TBL in businesses, individual metrics share the principle that environmental and social impact deserve their own place in business reporting and cannot be reduced to one simple cost or benefit to profitability (Adams, 2004; Sherman, 2012). To

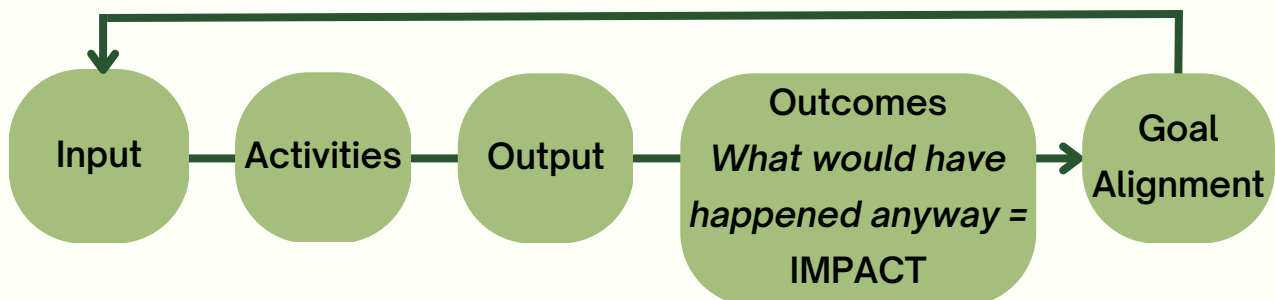
measure these two dimensions properly, different methods building on combinations of quantitative and/or qualitative metrics have been suggested (Sherman, 2012).

With respect to environmental impact, an especially popular approach is the Life Cycle Assessment, which takes into account the entire impact a business has on its natural environment - from the extraction and processing of resources to the recycling or disposal of the final product. These impacts are then categorized and quantified in terms of environmental footprints that describe the net burden put on each category, for example, carbon or biodiversity, throughout the entire lifecycle. The net burden is calculated as the total burden on the environment generated through the business's activities minus the total benefits for the environment generated through offsetting activities, such as the use of renewable energies or the utilization of waste for new products (Čuček et al., 2015). Other approaches include the Environmental Input-Output analysis, which compares the natural resource inputs required to run a business with the pollution outputs that are generated by the business, and the Emergy Analysis, which considers what types and quantities of energy go directly and indirectly in the business's service or product (Patterson et al., 2017).

Compared to the metrics for environmental impact, the guidelines for measuring social impact are relatively underdeveloped (Rawhouser et al., 2019). Generally, social impact is defined in terms of stakeholder value (Stubbs & Cocklin, 2008; Joyce & Paquin, 2016). By this definition, stakeholders are "groups of individuals or organizations which can influence or are influenced by the actions of an organization", including for example employees, shareholders, communities, customers, and suppliers (Joyce & Paquin, 2016, p. 1477). Individual approaches to social impact measurement consider different stakeholders and quantify social impact in unique ways. Nevertheless, individual approaches think differently about which stakeholders to include and how to express their value in numerical terms (Joyce & Paquin, 2016; Rawhouser et al., 2019). When strictly for-profit businesses choose to measure social impact, they do so either in terms of the financial investment in activities that enhance stakeholder welfare or the outcomes of these activities (Rawhouser et al., 2019; Zappalà & Lyons,

2009). This differs slightly from the approach most SEs take, in which social impact is considered an integral part of the business model. Consequently, social impact metrics for SE not only measure specific welfare-enhancing activities but rather consider the total impact the SE has on the status quo for its stakeholders, as exhibited in *Figure 2*. The specific measures used depend on the size, capacity, activities, and focus of the SE in question (Grieco et al., 2015).

Figure 2: Measuring Social Impact for Social Enterprises



Source: Adapted from Clark et al. (2004), as seen in Grieco et al. (2015, p. 1176)

In addition to the several metrics for environmental and social impact, there also exists a plethora of methods for weighing these dimensions against profit (Sridhar & Jones, 2013). The difficulty lies in expressing the different dimensions clearly to find an overall picture of the business's social, environmental, and financial performance without neglecting to consider the intersectionality of these three pillars. This tension is at the core of the TBL and has been expressed in evaluation models in diverse ways (Sherman, 2012; Svensson et al., 2018). Most simply, linear, additive models express each dimension as a singular number consisting of multiple indicators. These separate scores are then combined into one "scorecard". Other models have tried to account for the multidimensionality of the TBL by attaching a monetary value to the environmental and social impacts, which can then be added to or subtracted from the company's total profit (Sherman, 2012). When using the TBL in their M&E frameworks, businesses should consider both how to measure environmental and social impact, and how to relate these dimensions to profitability.



5. Methodology and Deliverables

The client's original Terms of References (ToR) requested an all-encompassing M&E Framework to evaluate the business's impact on farmers which was context-appropriate and drew on current research for its methodology. As the project continued, several additional deliverables were included to allow for a more complete set of tools and with the purpose of delivering the best possible work to the client. In the end, our team submitted a Theory of Change (ToC), M&E Framework, Vulnerability Index, Full Questionnaire, and Scorecard to TCG.

As a first step, we met with Rushda Khan, an M&E practitioner for United Nations agencies and NGOs, to provide a foundational understanding of constructing an effective M&E system. Ms. Khan also provided us with an online course from the Aga Khan Foundation to develop our M&E knowledge and skills.¹ With this foundation, we then completed a literature review on capturing impact within M&E systems and ethical considerations. Finally, we began working on the deliverables themselves. Each of these is outlined in detail below, along with the methodology which informed their creation.

5.1 Ethical Considerations

To inform our process and be conscious of the ethical implications that come with the construction of an M&E system, we conducted an evaluation of rigorous ethical checks that could support the formation of our M&E Framework. We settled on two complementary models. Firstly, we employed Newman and Brown's (1996) Decision-Making Model ([Appendix 3](#)) from their influential book, *Applied Ethics of Program Evaluation*, which is a foundational text on the ethics in the field of M&E. This framework is designed to guide decision-making in the process of building M&E systems. It provides a straightforward methodology for handling ethical concerns within the group of developers using a progression of intuition, rules, principles, theory, and personal values before taking action. This framework was useful in developing an understanding and process for dealing with potential ethical issues within our team before elevating it to TCG or our support network at the LSE.

1. This course can be found on the [Alison website](#)

The second framework of note was used to bring to the forefront the most common ethical considerations when building an M&E system. Gopichandran and Krishna's (2013) ethical framework for public health M&E systems lays out eighteen key questions that need to be assessed before creation and implementation. They highlight that these questions can be applied beyond the public health sector, thus we used questions 6-18 (some questions were excluded due to limited relevance outside the health sector or irrelevant sample selection methodologies) as framing for our discussions and considerations of ethical M&E framework design. The list of questions for the ethical framework can be found in [Appendix 4](#).

5.2 Theory of Change

Our ToC (*Figure 3*) for TCG's business model helped us understand the rationale for operating in Uganda's coffee sector but also informed our choice of indicators for the M&E Framework. The initial version was composed using internal training documents, annual impact reports, transparency reports, and consultancy reports made by previous working groups from the LSE and other universities.² Elements of the ToC were categorized according to the logic of M&E Frameworks, beginning with interventions (outputs), followed by **lower-level outcomes**, **higher-level outcomes**, and the **final goal** (impact for farmers). This initial version was revised several times based on communication with TCG's leadership team. In line with TCG's wishes, the ToC was limited to interventions related to the company's core business activity, sourcing and selling coffee as well as stakeholder group (coffee farmers) social and environmental impact activities.³ Interventions aimed at creating welfare among the broader community of Mt. Elgon, such as putting sanitary facilities at local schools, were excluded from the analysis.

The final ToC consisted of ten interventions, five lower-level outcomes, three higher-level outcomes, and one final goal. Starting from the bottom of the ToC, TCG's interventions were grouped according to the lower-level outcome they related to.

2. Except for internal documents, resources are made publically available on TCG's [website](#)

3. Examples of these can be found on TCG's [social media](#).

Environmental protection refers to the efforts that TCG took to help farmers protect their environment while cultivating coffee. These consisted of distributing tree seedlings for more sustainable coffee production (for example by providing natural shade) and for protecting the natural environment (for example by combating soil erosion), as well as training farmers on sustainable farming.

Social inclusion refers to efforts to include people from disadvantaged socio-economic backgrounds in the coffee industry, achieved through hiring farmers locally and providing coffee farmers training related to group dynamics and gender inclusion. For both activities, the focus was on including female and youth farmers (TCG, 2021; TCG, 2022a).

Financial inclusion relates to leveraging the farmers' potential to become financially independent and run their business. Interventions related to this outcome were TCG's financial literacy training and their savings program, allowing farmers to save earnings from produce sold to TCG that could then be invested at a later point (TCG, 2022b).

Economic empowerment was included as a separate lower-level outcome to indicate the opportunities that TCG offers to farmers to earn more income rather than spending and investing. This also includes TCG's savings program, as well as establishing and supporting Village Savings and Loans Associations (VSLAs), and the more stable, above-market price that TCG offers farmers for their coffee (TCG, 2022a).

Lastly, the **physical protection of farmers** refers to the health and safety trainings that TCG offers to farmers, allowing them to protect themselves against hazards within coffee production (e.g. the use of pesticides) (TCG, 2021).

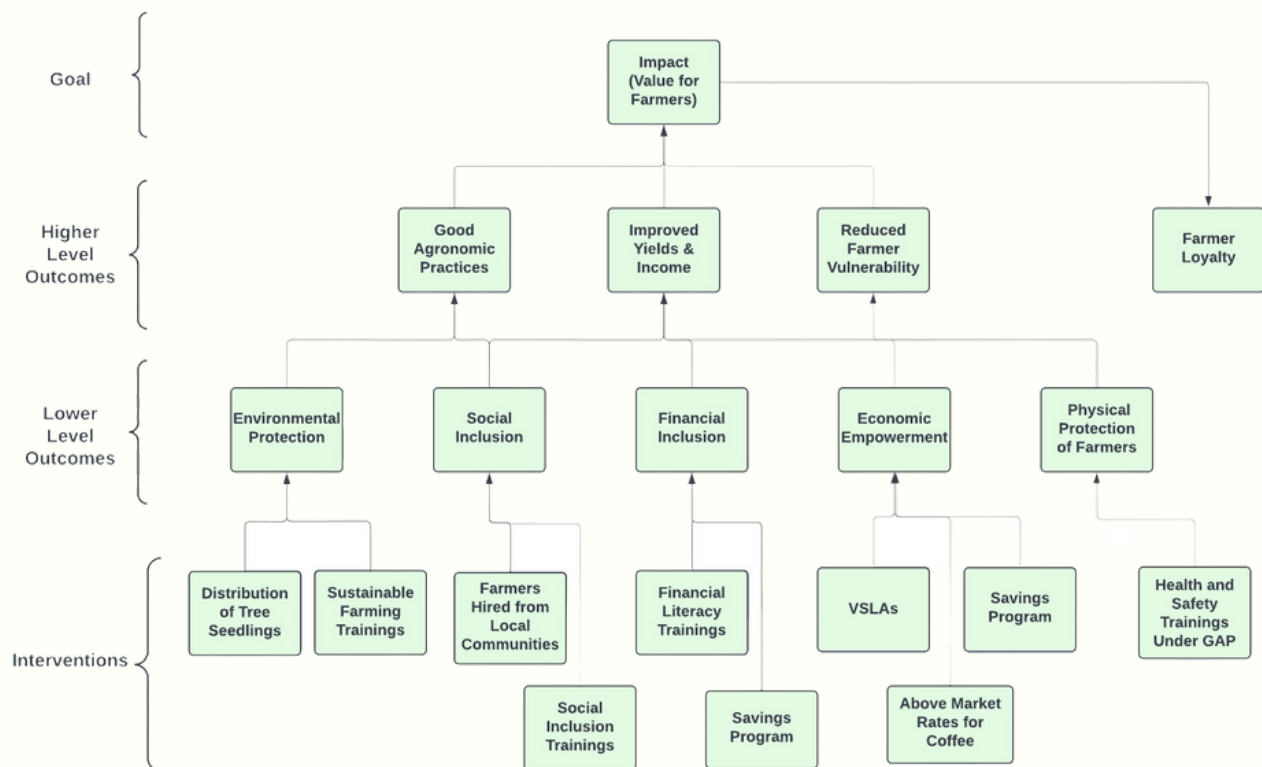
The lower-level outcomes lead to higher-level outcomes reflecting the long-term goals of TCGs interventions: (i) **Good Agronomic Practices**, the ability of farmers to cultivate coffee in a way that is safe and protective towards their own health and their natural environment, (ii) **Improved Yields and Income**, the ability of farmers to cultivate more coffee and derive higher incomes from

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coffee farming over time, and (iii) **Reduced Farmer Vulnerability**, the effect of TCG’s activities on the financial, environmental, and social vulnerabilities faced by farmers (*Section 5.4 Vulnerability Index*). The decision was made not to group the lower-level outcomes into specific higher-level outcomes in order to reflect the multi-dimensionality of the TBL. For example, environmental protection benefits the farmer’s own health, but also contributes to higher coffee yields and less climate-induced vulnerabilities. Taken together, these three higher levels would come to reflect TCG’s impact on improving the quality of life for the coffee farmers they are working with.

For TCG, creating impact on farmers has the additional potential benefit of fostering **farmer loyalty**. Our consultancy team has chosen to place farmer loyalty to the right side of the ToC not only because it is a potential result of TCG’s impact on farmers, but also because the net effects cannot be quantified at the farmer level by this consultancy team. For further justification considerations of farmer loyalty, see *Section 5.3.3 Indicator Categories and Selection*.

Figure 3: Theory of Change



5.3 Monitoring and Evaluation Framework

Our primary deliverable, the M&E Framework, was developed to capture the impact of TCG's TBL business strategy on their network of farmers. Thus, it can be used as a tool to analyze the current strengths of TCG's approach to social impact as well as to improve future interventions to further their impact on farmers.

5.3.1 Structure

The M&E Framework was structured based on the ToC, first in setting the tiers of indicators (interventions, lower-level outcomes, and higher-level outcomes) and, second, in informing the nine indicator categories at the second and third tiers (*Figure 3*).

Following standard M&E best practices, the lowest level of the Framework, **Interventions**, measures the direct outputs of TCG interventions, such as Indicator 3.2: Number of tree seedlings distributed per farmer. The next level up, **Lower Level Outcomes**, primarily measures outcomes of TCG's involvement and the behavior of farmers, including aspects such as safe chemical usage and composting. **Higher Level Outcomes** take a macro approach, accounting for the impacts of the organization and aggregating the effects of the lower levels. Thus, at this level, there were only four categories: Good Agronomic Practices, Improved Yields & Income, Reduced Farmer Vulnerability, and Farmer Loyalty. A description of all nine indicator categories, spanning these three levels is provided in *Section 5.2 Theory of Change* and the full M&E Framework is found in *Appendix 5*.

To account for the intersectionality of TBL dimensions, we allowed each indicator to be labeled with one or more TBL pillars. This allows for an analysis of TBL elements across categories and levels to capture the intersectionality of TCG's interventions.

5.3.2 Data Collection and Indicator Classification

In developing the list of indicators, there were two considerations regarding the availability of data. First, to minimize the workload on TCG staff and farmers, each indicator's data would ideally already be collected in some format by TCG;

this was considered in-house data. Second, if our team suggested additional indicators, where data was not previously collected, the associated workload for data collection needed to be reasonable, cost-effective, efficient, and altogether feasible for TCG to gather.

In-House Data: Some data points were captured by TCG in regular operations, for example, coffee quantities per farmer and participation in yearly training sessions. Additionally, data was collected via surveys carried out at irregular intervals, such as one-off training events or garden visits. Our team drew from these sources of data to populate the Framework's categories and begin highlighting gaps in data collection where further indicators were required.

New Indicators and Data: Having identified these gaps, we used findings from academia and relevant M&E frameworks to build out additional indicators. These indicators were revised over multiple rounds of consultation with TCG to ensure they were relevant to the local context and able to be captured in two new surveys. Moreover, to establish a nuanced measurement of Reduced Vulnerability and Good Agronomic Practices, two indicators were created out of several sub-indicators and survey questions.

5.3.3 Indicator Categories and Selection

Typically, M&E frameworks are project-based and thus include between five to ten indicators. As our Framework is meant to capture the impact of an entire business, we needed a significantly larger base of indicators to capture the wider scope of analysis. Ultimately, we settled on a list of 34 indicators spanning nine indicator categories, in line with the ToC.

TCG emphasized the importance of the M&E Framework measuring the impact of their interventions and business practices on farmers, rather than on the business itself. Therefore, we chose to focus our indicator selection on those with a more direct impact on TCG farmers. Additionally, our selection of indicators was informed by TCG's existing data and literature, including from the literature review as well as previous reports from TCG and related organizations. The nine indicator categories and their related methodology are explained below.

Farmer Loyalty: This category encapsulates two elements, farmers returning year-on-year and farmers providing credit to TCG. Registered farmers can sell coffee to TCG on credit for TCG to repay at a later date in case of market instabilities that temporarily hamper the business's liquidity. TCG sees this as a strong indicator of the loyalty of registered farmers. While exclusively selling to TCG, therefore at times providing the business with credit, can be financially beneficial for TCG, the assumption that loyalty throughout market instabilities is in the best interest of the farmer is not as clear cut. When farmers remain 'loyal', even when TCG is unable to pay at the time of sale, farmers potentially forgo immediate payment which they may have received from other buyers. TCG and this Framework are unable to capture the financial impact, positive or negative, of farmers outside of TCG's business model or farmers in their network who sell some of their coffee in other markets. Ultimately, we are unable to quantify the costs and benefits for farmers selling to TCG on credit as the data needed to capture this effect is outside the scope of TCG's collection capacity. Thus, Farmer Loyalty can only definitively be used to measure the benefit to TCG. Nevertheless, the loyalty indicators are still useful at a farmer level as they are indicative of the farmers' perception of value in being integrated into TCG's system and accessing its interventions. As the M&E Framework aims to measure impact on farmers, loyalty is a key element in understanding farmers' response to TCG's involvement in the community and economy.

Reduced Vulnerability: This category contains a single indicator which is defined by the Vulnerability Index (*Section 5.4 Vulnerability Index*) to capture the multidimensionality of vulnerability. This index aggregates sub-indicators for the financial, environmental, and social risks which coffee farmers face as well as mitigating responses.

Good Agronomic Practices (GAP): This category consists of one indicator which serves as a basket for a large selection of data points that are collected at regular intervals. These questions can be found in the Full Questionnaire (*Appendix 7*) and are an agglomeration of new questions developed by TCG's assessment staff and prior garden assessment tools. These data points primarily capture the environmental aspect of the TBL, but there are also

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spillover effects from GAP to the other TBL pillars as it contributes to long-term social and economic outcomes as well.

Improved Yields and Income: These indicators cover both economic and social outcomes and are intended to explain coffee sales and production by farmers. These data points were chosen from pre-existing TCG data that can now be analyzed over time to determine if TCG's interventions are helping to increase farmer production and income which is a main priority for the organization.

Social Inclusion: In line with our Social Inclusion definition, we chose indicators that helped to involve both social groups and individuals from local communities that traditionally might not have access to the income and opportunities that the average coffee farmer has, i.e., women and youth. These indicators were drawn widely from TCG's existing data as well as adjusted from literature and local context provided by TCG, i.e. land inheritance and tenure practices in the Mt. Elgon region of Uganda.

Physical Protection of Farmers: These indicators have both social and environmental dimensions, focusing on trainings provided by TCG and interventions implemented in this area over time. They were predominantly selected from TCG's existing data and were chosen to track the efficacy of programs and trainings in this area.

Environmental Protection: These indicators affect the coffee gardens' surrounding environments and natural systems while also promoting long-term soil and garden health. They were chosen based on literature about the environmental effects of the coffee sector in Uganda, as well as previous TCG and partner reports, and through a process of discussions with TCG about the feasibility of measurement and scope of TCG's impact. These indicators are mainly focused on the environmental dimension of the TBL but also have significance for the farming community's long-term health, well-being, and economic opportunities in the agricultural/coffee sector. Hence, some indicators in this category included all three elements of the TBL.

Financial Inclusion: These indicators have both social and economic dimensions. We selected these from in-house TCG data and relevant reports

as well as external literature on the subject. These indicators mainly deal with access to trainings and long-term financial resilience strategies such as financial record keeping.

Economic Empowerment: These indicators are classified as only pertaining to the economic dimension of the TBL, although we acknowledge that there is the potential for intersectionality with other TBL pillars. Even so, we wanted to differentiate between Economic Empowerment and Financial Inclusion as these are two outcomes at the core of TCG's business practices and involve distinct types of interventions. Economic Empowerment indicators involve direct access to financial means (income etc.), whereas Financial Inclusion pertains to the more abstract, long-term financial resilience of farmers. Therefore, the Economic Empowerment indicators involve interventions that increase farmer income through interventions such as premium coffee sale prices and saving capacity through programs such as the VSLAs.

Box 5.3.4 Disaggregation

For each indicator, we listed relevant and feasible disaggregation units. We have included gender, age, head of household, and farmer coffee output (farmers are divided into large and small coffee producers). This allows for critical analysis and progress evaluation across various demographic planes regarding the coffee industry's marginalized groups, such as women and youth. Some of these disaggregation methods may not be feasible for specific indicators and will require analysis after further iterations of data collection. A potential example of disaggregation difficulty for farmer coffee output is that some farmers sell coffee cherries collected from friends and relatives, thus it cannot be ensured that TCG payment is not distributed among a larger group who use the farmer's access to TCG to gain higher prices at opportune times without personally registering. Additionally, female farmers often face barriers regarding coffee garden ownership due to patriarchal land tenure practices. This means that women sometimes work in various gardens of different owners, meaning farming practices from this Framework may not be indicative of their behavior on their personal plots. Thus, we recommend further analysis to more accurately untangle how data collected in this Framework can be disaggregated while also being representative of registered farmers and their practices.

Two additional measures of disaggregation that were ultimately excluded from the Framework are coffee garden size and altitude. Coffee garden size is excluded due to the high cost of measuring and monitoring plot sizes which are outside of TCG's current scope. While TCG gathers self-reported data on garden altitude from their registered farmers, disaggregating is not feasible as farmers often own multiple plots spanning different altitudes and thus cannot be classified into one category for disaggregation.

5.4 Vulnerability Index

As there is no single indicator for the vulnerability of TCG farmers, a core task in creating the M&E Framework was in using industry standards to create a relevant, realistic, and theoretically sound means of measuring farmer vulnerability. For our purposes, this involved combining a set of indicators to measure the risks for farmers, against the potential responses to those risks, and using the gap between the two to reflect the change in farmer vulnerability year after year.

To come to this conclusion, we researched how vulnerability was traditionally defined and measured in the industry. In the development community, vulnerability is measured in several ways, each specific to the related program, intervention, target population, sector, etc. These unique vulnerability frameworks are, for the most part, necessarily nuanced and complex to reflect the particular challenges being measured (Moret, 2014). For our team, a core consideration was ensuring that our Vulnerability Index was complex enough to be relevant, without making the related data collection too burdensome for TCG. With this in mind, we opted to use the following formula for vulnerability (standard for most of the relevant literature) (Moret, 2014):

$$\text{Risk} + \text{Response} = \text{Vulnerability}$$

In which...

Risk: sources of vulnerability

Response: potential interventions tied to risk management (means of coping with a risk)

This formula is tied to the sustainable livelihoods framework influenced by the work of Amartya Sen “whose conception of ‘entitlements’ laid the groundwork for asset-based analysis focused on livelihoods” (Moret, 2014, p. 1). It is also based on the livelihood vulnerability framework which defines livelihood vulnerability as “Livelihood vulnerability = livelihoods (material and intangible assets) + (exposure to) a stress or shock” (Bacon, 2005). This framework is often used for agricultural interventions, specifically for coffee farmers because it succinctly measures both economic crises and natural disasters, two phenomena impacting coffee farming communities (Bacon, 2005).

Additional research highlighted particular areas of vulnerability and related responses specific to coffee farmers. Bacon (2005) notes areas of vulnerability particular to coffee farmers including lack of access to land, lack of access to credit, and exposure to low coffee prices. He also puts forth potential responses to risks including strengthening social networks and credit programs. Each of these common risks and responses to coffee farmer vulnerability was included in our Vulnerability Index.

After extensive research on industry standards and evaluation of how the vulnerability score should work within the M&E Framework, we finalized the Vulnerability Index as seen in [Appendix 6](#). This index contains a composite vulnerability score based on ten indicators, including five risk indicators and five response indicators, based on the Risk + Response = Vulnerability equation extracted from the vulnerability scholarship.

Logically, this equation measures the risks for TCG farmers, as well as the responses available to them, and considers the gap between the two sets of indicators (risks and responses) to be a measurement of the vulnerability of the community.

The five risk indicators were selected based on the vulnerability scholarship as well as suggestions made by TCG during our client meetings. The responses are based on TCG’s current interventions as well as additional potential interventions. It is important to include a set of responses that do not map directly to TCG interventions, because that course of action (in conjunction with our indicator measurement) would skew the data such that it would show TCG

as 100% covering the risks facing farmers. Our LSE team has considered that this formation consequently includes areas that TCG does not have control over (i.e. responses they do not implement), but we feel it is of higher importance to ensure the equation is not manipulatable to skew the data toward a more favorable score.

Measurement of indicators is undertaken in comparison to the indicator levels from the previous year of data collection. That is, if the indicator value increased, the score for that indicator would be (+1), a decrease would be (-1) and if the indicator value were to remain the same as the previous year, the score would be (0). Thus, the resulting vulnerability score actually translates to a change in vulnerability compared to the previous year.

Finally, the equation is weighted so that the risk and responses can theoretically be edited by TCG to include the indicators they feel are most relevant, without risking an imbalance (i.e. including more risks than responses which would skew the results). It is important to note, however, that our team suggests maintaining a standard set of risk and response indicators so that the Vulnerability Index can be compared year on year.

5.5 Full Questionnaire

To collect data for the new indicators and for indicators currently only measured on a small scale, a set of additional questions was developed, resulting in a Full Questionnaire of 81 questions that are divided into ten categories.⁴ A first draft of these questions was informed by literature on the areas in our M&E Framework that were lacking data (especially environmental impact and the Vulnerability Index) and on discussions with TCG about the local context. TCG then built off our suggestions with field staff insights into what would be feasible, relevant, and possible to ask of farmers in this context. The survey data is to be collected either annually or at certain intervals throughout the year. The data collection methods for these questions are divided into three categories, the Annual Survey, the GAP Assessment Survey, and finally the Observation/Tests. The Annual

4. Demographic Data, Socio-Economic, Financial Inclusion, Agronomy, Agroforestry, Climate Smart Adaptation, Agrichemical Use, Farm Health & Safety, Environmental Protection, & Future Needs

Survey is conducted for all TCG's farmers each year, the GAP Assessment Survey happens intermittently throughout the year and involves GAP tests and field observations, and finally, the Observation/Tests include observations by field staff.

5.6 Scorecard

While the M&E Framework provides an overview of TCG's impact across all the elements of the ToC, an additional target was to create scorecards that could be used to encapsulate the performance of the organization as well as individual farmers across all indicators more explicitly. This would provide a single annual score that served as an impact indicator and could be used not only for TCG to track the progression of each farmer's practices (and therefore the efficacy of TCG interventions), but also for farmers to track their own progress. This was also meant to provide an overall organizational score that could capture other organizational factors and register farmer progress. All scorecards have been included in [Appendix 8](#).

5.6.1 Scoring

Each indicator is assigned to one of nine categories based on elements from the ToC (also indicated in the M&E Framework). Each of these nine categories receives a composite score between 0-100, based on the individual scores of each indicator within that category. Each indicator is scored based on the corresponding data for that year. The target (which will be set by TCG) for that indicator would have to have been met (or maintained) over the previous year for an indicator to receive a 'passing' score. For example, *Indicator 1.4*, measuring the percentage of TCG farmers fulfilling GAP, would be scored as passing for farmers who meet the list of requirements for GAP farming and would be scored as passing for the organization if they met their target level of implementation across their farmer base. As was agreed upon between our team and TCG, the targets and the point weighting for each indicator would be set by TCG as the required expertise and contextual knowledge to establish such values is beyond the scope of our team.

Certain categories contain more indicators than others, which raised the question of weighting. Therefore, two scoring mechanisms were built that could reflect different weights. First, there is Category Equal Scoring, which gives equal weight to each of the nine categories and thus indicators have varying values based on the category they were assigned to. Secondly, there is Indicator Equal Scoring, which gives equal weight to each indicator. We recommend the second scoring mechanism as it avoids indicators in categories with fewer indicators being given more weight (ie. Financial Inclusion having two indicators versus thirteen for Environmental Protection). Moreover, we recommend a complementary category-specific analysis to allow for a more holistic understanding that avoids rewarding full compliance in one category while failing to achieve indicator targets in another category.

Box 5.6.2 TCG Organisation Scorecard

The TCG Organisation Scorecard measures the entire organization's impact and thus includes all 34 indicators from the Framework. This entails an aggregation of outcomes for the entire list of registered farmers in addition to specific indicators that are more centralized to the business's operations, such as *Indicator 2.10: Level of coffee-related pollutants in surrounding waterways*, which is relevant to TCG's processing station and not relevant to farmers' coffee gardens.

Box 5.6.3 Farmer Scorecard

The Farmer Scorecard does not include all indicators, as it only counts those that can be implemented at the farmer level. This Scorecard is gendered, as there are two additional indicators only relevant to female farmers. Thus, the points for each indicator are slightly adjusted. It is important to distinguish what the resulting score means for the farmer. The farmer's score is not meant to quantify their success or ability. Instead, it primarily measures how well TCG has supported the farmer in implementing interventions and the level of integration into the TCG system. Thus, this tool is important for identifying gaps in the services received by the farmer, such as a lack of social inclusion training, or practices that TCG can support the farmer in implementing, like handling chemicals. Additionally, Farmer Loyalty indicators are included in the Farmer

Scorecard

Scorecard as a measure of their integration into TCG's ecosystem and can inform TCG of the farmer's willingness to return year after year and support TCG's business model rather than pursuing market prices with other buyers.

more 5.6.4 Additional Considerations

Two additional considerations need to be taken into account. First, the current weighting of the above scorecards is not representative of the importance of different categories or indicators to the goals of TCG. We chose to leave an evaluation of how indicators or categories should be prioritized for future research, with the benefit of access to early rounds of data collection. Such a weighting system would require significant contextual and technical expertise that was beyond the scope of this consulting project.

Secondly, an additional variation of the scorecards was made to include data points that were either disaggregated data (thus doubling the impact of the indicators they were connected to) or data that was outside of the Framework's scope. For these reasons, the alterations were adapted into a secondary version, which can also be found in [Appendix 8](#), to limit our original scorecards to data available in our Framework.



6. Conclusion

The goal of this consultancy project was to create a comprehensive Monitoring & Evaluation Framework for the social enterprise, The Coffee Gardens, to measure the effect of their interventions in the areas of environmental, social, and economic impact. Our LSE consultancy team has created a well-considered, well-researched M&E Framework taking into account ethical considerations and well-established research. To do so, the team expanded on the Terms of Reference by creating a project-specific Theory of Change, aggregated indicator systems through the Vulnerability Index and GAP indicators, a Full Questionnaire to fill in data collection gaps, a Scorecard for TCG as an organization and for its registered farmers, and finally the M&E Framework that brings these various elements together. These deliverables were executed by working in conjunction with the TCG team and by considering their organizational needs and capacities.

6.1 Limitations and Recommendations

Although our team collaborated extensively with TCG to ensure the deliverables were as complete as possible, there are certain limitations to the Framework and related deliverables. The first relates to the Framework's overall purpose, the second is the applicability of the scorecards to the Framework, and the third is the challenge of collecting data which effectively captures the nuance of particular indicators.

Regarding the purpose of the Framework, generally, M&E frameworks do not measure the impact of an organization as a whole, but rather a single project or intervention. We aimed to address this limitation by being as comprehensive as possible in our creation of indicator categories, as well as in the selection of indicators themselves. As TCG implements our M&E Framework over time, we expect that they will improve upon our work by making project-specific edits where needed, in order to better serve the needs of the organization.

Another unique aspect of our set of M&E deliverables is that two scorecards were created based on one M&E framework. Generally, only one scorecard would result from a single M&E framework. Within the two scorecards we attempted to tailor the indicators to the different measurement groups and to

disaggregate specifically the farmer scorecard to better address their individual evaluation. In the future, TCG could expand the existing Framework to refine the indicators tailored particularly for farmers as well as for the organization. This would allow for more nuance in the scorecards.

An additional limitation was in collecting meaningful data in certain measurement areas due to feasibility or complexity issues, for example, disaggregation by altitude. The altitude at which coffee is grown can have a significant impact on the quality of the coffee, as well as the potential impacts of climate change to that area. Unfortunately, as many of TCG's registered farmers have multiple coffee gardens, it can be difficult to verify the specific plot that coffee cherries are sourced from and thus, it is unrealistic to disaggregate data by altitude. TCG has historical data on the various altitudes for each farmer's plots, which can help to somewhat refine this data, but variation within a single farmer's gardens is difficult to capture and monitoring costs at this level is costly. In a similar vein, a further limitation is the inability to disaggregate by the size of farms due to the fact that some farmers have multiple plots, land ownership can be complex to track, and costs would be prohibitive. Land tenure in the region is structured such that land is generally inherited by sons, with other family members continuing to work on the land and deliver coffee to TCG. This complicates the ability to know the size of coffee gardens owned by farmers, as well as the exact owner of the land. If TCG could potentially collect more demographic data on land ownership, it can be used to better understand their socio-economic situations.

A final limitation in data collection is in regards to environmental indicators. Although our team worked to make the environmental indicators as succinct as possible, there were some indicators that were not realistically within TCG's scope of data collection. For example, ongoing GHG emission analysis would be extremely expensive to measure. Soil quality is another challenging data collection point. With over 600 farmers in the TCG network, data collection would require significant time and capital investment. Our team attempted to address some of these gaps by relying on regional data, such as local temperature, to understand ongoing changes in vulnerability of registered farmers. We suggest that TCG expand its measurement of environmental indicators over time to further explore how they can continue to reduce the environmental impact of their business and network of farmers.

6.2 Further Recommendations

The M&E Framework and related deliverables help TCG have a clear overview of the impact of their current interventions as well as gain ideas for future areas to explore. When these interventions are implemented, the individual scorecards will highlight which interventions have been the most effective across their community of farmers.

A further step to completing TCG's M&E and Learning strategy is to set targets for each indicator based on TCG's contextual knowledge in sustainable coffee farming. Furthermore, TCG can explore additional weighting mechanisms for the scorecards to adapt them more precisely to their needs once initial waves of data collection have been completed. We believe that these scorecard features can be critical to highlight gaps in services to their community and to shine a spotlight on progress that may have previously gone unacknowledged.

6.3 Concluding Remarks

Altogether, our team is proud to deliver a comprehensive Monitoring and Evaluation framework that is equipped with associated deliverables that we believe can empower TCG at every level of the M&E process, from data collection to analysis. We hope The Coffee Gardens will continuously expand upon and advance this Framework and its associated parts and that these will help TCG measure, grow, and improve their impact as an SE in the Eastern Uganda farming community.





7. References

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8. Appendix

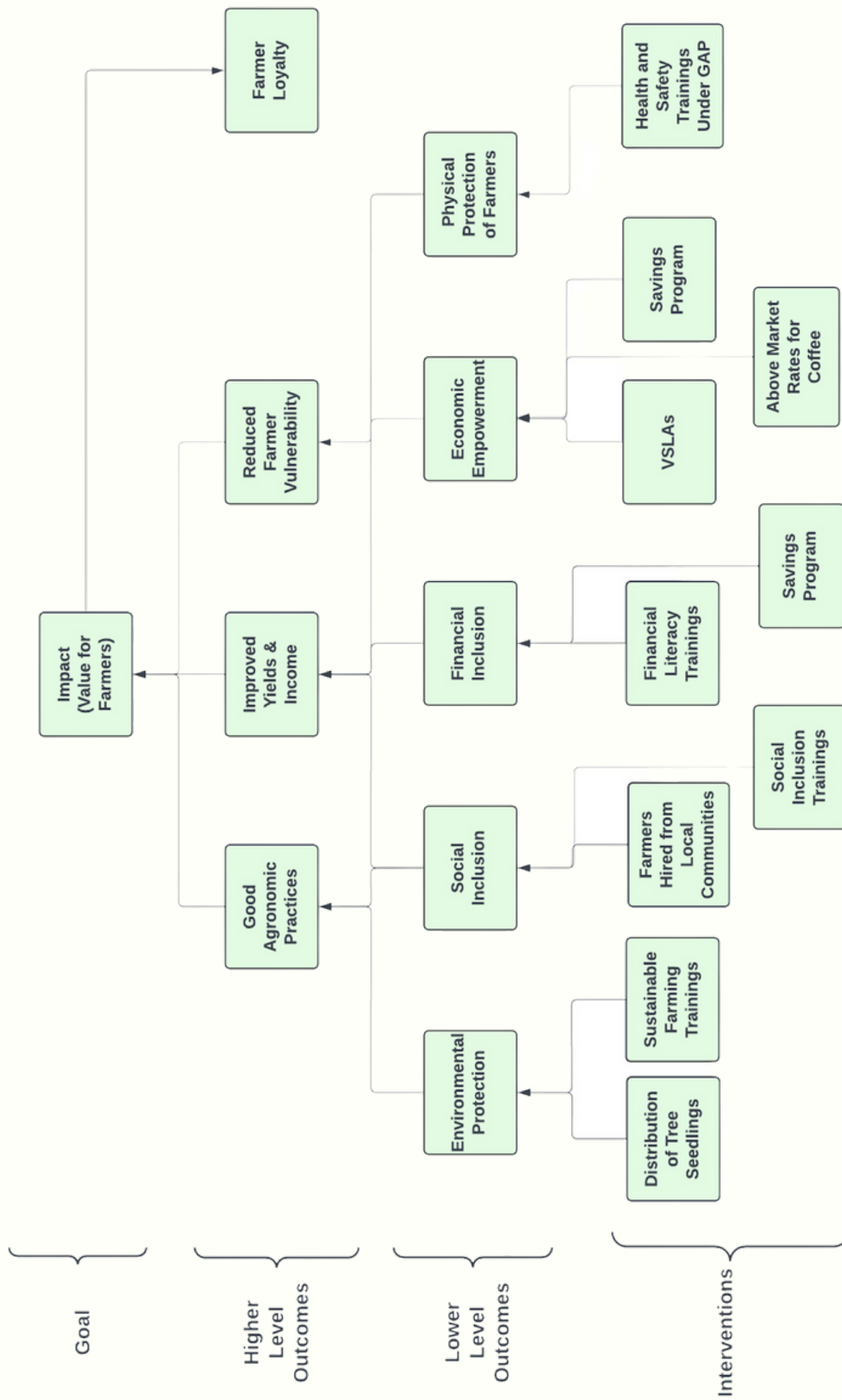
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Appendix 1: Terms of Reference

Organisation and Department	The Coffee Gardens
Project Working Title	How should a Ugandan coffee agri-business attempting to achieve a “triple-bottom-line” measure our impact in a way that is context appropriate and delivers value-for-money?
<p>Background: Two short paragraphs. In the first, please provide a brief description of your organisation and its objectives. In the second, please provide a brief introduction to the topic to be addressed by the project. Why is the organisation interested? Why is the subject itself interesting?</p>	<p>The Coffee Gardens is a social business working with smallholder coffee farmers in eastern Uganda. We built a micro-processing factory situated in a rural village in the foothills of Mt Elgon, where we produce coffee for export markets. Our aim is to produce high quality coffee in a way that is economically viable for us and benefits the farming community and the environment - achieving a triple bottom line.</p> <p>Uganda has experienced waves of different approaches to rural development. State-led development post independence was seen as inefficient and corrupt. The liberalisation and market oriented reforms that followed the civil war have not delivered their anticipated development goals i.e growth in rural incomes, economic dynamism and sector diversification. In the coffee sector specifically, market liberalisation coupled with the collapse of the cooperative movement, although creating different market exit options, has concurrently produced a highly extractive sector, with smallholder farmers working in a labour intensive manner on fragmented plots of land, earning very little income. Even when prices rise, many coffee buyers engage in “spot” purchasing, rather than developing long term relationships with farmers.</p> <p>In eastern Uganda, there is high (and still increasing) pressure on land due to a population boom, so farmers can't easily increase the amount of land they have, limiting the amount a farmer can earn through agriculture. Most of our farmers are considered highly vulnerable, due to the devastating impact of financial shocks and climate change.</p> <p>This, combined historic market volatility, disincentivises quality or environmental protection. A company can encourage better agricultural practices and more environmentally sound practices, but this has as low likelihood of implementation when farmers are vulnerable. This is because they are more likely to invest their time and resources in addressing immediate needs, rather than potential future gains. Additionally, instead of investing solely in coffee as a prime cash crop, farmers are heavily economically and agriculturally diversified. This has a negative effect on the uptake of better agricultural practices which would lead to improved yields and quality. Therefore tackling vulnerability, and indeed achieving a triple-bottom-line, is a key business objective.</p> <p>We initially used high prices as a way of breaking this cycle, possible because of the quality of our coffee. Through a high degree of transparency, we have built a relationship with farmers based on trust. This has allowed us to provide the wider community with a range of long-term training programs and services such as loans and tree-seedlings. To date, we have over 800 registered farmers, several training partnerships with NGOs, employ over 200 people from the community, and have distributed over 10,000 trees.</p> <p>In 2020-21, LSE student researchers explored whether The Coffee Gardens could be an effective vehicle for rural development by reshaping farmers’ incentives by prioritising transparency and investing in long-term relationships. In 2021-22, LSE</p>

	<p>students then investigated the relationship between our social programs and farmer loyalty.</p> <p>We believe that the private sector has an important role in rural development. Coffee accounts for a small proportion of many farmers' incomes, and in most cases doesn't approach providing a living income. We have been working with our farming community for five years and have a wealth of data collected on each farmer, and have evidence of positive social and environmental change. We believe now is an important time for us to carefully and quantitatively measure the impact of our work, particularly around reducing farmer vulnerability.</p>
<p>Question: (One or two sentences. What is the motivating question? What is it, specifically, that your organisation would like to know?)</p>	<p>How should The Coffee Gardens understand, measure and track our impact, particularly in relation to measuring changes in farmer vulnerability and resilience. Given that The Coffee Gardens has a wide range of projects and levels of engagement, what metrics will deliver value for money for the organisation, in allowing us to most appropriately share our story while collecting the minimal amount of data - reducing costs and minimising disruption to farmers.</p>
<p>Objective: (Short paragraph that explains what you hope to get out of the answer and how you may use the students' work to advance organisational objectives.)</p>	<p>Over the past several years, there has been an explosion in the development of metrics, log-frames and social impact indicators for coffee farmers and those working in the coffee value chain. Up until now, we have collected data on key indicators but are lacking a clear strategy and under utilising our data. We are not beholden to any specific donors, but instead want to understand, measure and track our impact for ourselves and own improvement.</p> <p>We are therefore looking for student researchers to develop a monitoring framework that is highly context appropriate and draws on the best current research. It should not require extraneous data collection nor draw inferences where attribution is unclear, but should be highly targeted to quantitatively measure our positive social impact in a way that allows us to appropriately and authentically share our story and track change over time.</p> <p>The output will be a data collection tool and associated methodology for analysis (where appropriate). The Coffee Gardens will implement this tool from Q2 2023.</p>
<p>Methodology: How the students are expected to answer the question. E.g. desk research, interviews, survey, review of internal documents, etc. If you wish the students to define the methodology please say so.</p>	<p>Students may design their own methodology using, for example, a combination of desk research, interviews and a review of internal documents. The Coffee Gardens would make available employees and farmers, where appropriate. We would also assist the students in identifying other actors in the sector, and making introductions where possible.</p> <p>We have several years worth of internal data which we are willing to share.</p>
<p>Contact: (The name and contact information of the person within your organisation who will be responsible for liaising with the students.)</p>	<p>Shakeel Padamsey, shakeel@thecoffeegardens.com Michael Buteera Mugisha, michael@thecoffeegardens.com</p>

Appendix 2: Theory of Change



Appendix 3: Decision-Making Framework

Level 1: Intuition

Questions

- Do I respond to my intuitive concerns?
- Do I have time for further analysis?

Decision 1: Stop, or pursue concern analysis?

Level 2: Rules

Question

- What rule, standard, or code applies?

Decision 2: Does a rule, standard, or code apply? If no, stop, or go to level 3?

Decision 3: If yes, stop, go to level 3, or take action (level 5)?

Level 3: Principles and theory

Questions

- What is the relevance of each principle (autonomy, nonmaleficence, beneficence, justice, and fidelity)?
- How do the criteria (consequences, duty, rights, social justice, and ethics of care) apply?

Decision 4: To stop, consider values (level 4), or take action (level 5)?

Level 4: Personal values

Questions

- How do my personal values, visions, and beliefs affect my thinking?
- What kind of a person do I want to be?

Decision 5: To stop, or take action (level 5)?

Level 5: Action

Questions

- How much stress is involved?
- What are the risks to me?
- What are the risks to others?
- What do my colleagues think?
- What is my plan of action?
- How will the organisation react to this plan?
- What cultural perspectives are important to consider?
- Has my action resolved the issue?

Decision 6: To stop, or implement an action plan?

Decision 7: Has the plan worked, or must I start again?

Source: Copied from Newman and Brown (1996, p. 102) as seen in Berends (2007, p. 40)

Appendix 4: Gopichandran and Krishna's Ethics Framework

Setting Objectives, selecting indicators and planning methodology of M&E

6. Are the selected objectives, indicators and methodology feasible and relevant?

7. Does the objective, indicator and methodology planning process empower the stakeholders and the community?

8. Is the process of objective, indicators and methodology selection transparent?

9. Does the process of data collection respect the individuals?

10. Does the process of data collection maintain privacy and confidentiality of the respondents?

11. Does the process of data collection demonstrate responsibility to the community?

12. Does data collection empower the field workers at the community?

13. Does the data collection process follow least intrusion and non-judgemental attitudes towards respondents?

Data Analysis, interpretation, reporting and sharing of results

14. Is the data analysis, interpretation, reporting and sharing process impartial?

15. Are complete and honest data analysis, interpretation, reporting and sharing performed at the end of the M&E process?

16. Does the process of data analysis, interpretation, reporting and sharing of results demonstrate community accountability?

Utilization of results

17. Is adequate feedback provided to the programme managers, stakeholders, community representatives and the community at all stages?

18. Are the results of the M&E used appropriately and in a timely manner?

Source: Adapted from Gopichandran and Krishna (2013, p. 34)

Appendix 5: M&E Framework

M&E Framework										
Element in ToC/ Category	TBL Relevance	Indicator Tag #	Indicator	Source of Information	Frequency of data collection	Data Type (In-House Data, New Data + Type of Survey/Observation)	Remarks	Assumptions	Disaggregation	
Higher level outcomes	Farmer's Loyalty	1.1	% of farmers who are included in TCG's credit program	In-House Data	Annual	In-House Data (see Source of Information)			Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Farmer's Loyalty	1.2	% of registered farmers who delivered coffee this year who also delivered coffee last year	Sum("Farm_ID") in All Registered Farmers, Farmer Registration Log and sum("Farm_ID") in Active Farmers, Farm Registration Log	Annual	In-House Data (see Source of Information)	This could be altered to include farmers from previous years as well, not only last year.		Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Reduced Vulnerability	1.3	Vulnerability Score	See Vulnerability Index	Annual	Various (See Vulnerability Index sheet)			Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Good Agronomic Practices	1.4	% of farmers fulfilling GAP	Not available (yet)	Interval	Aggregate data from the Agronomy Questions in the Full Questionnaire	This indicator should measure the % of farmers implementing GAP. We are uncertain if the listed sources of information are capturing training in GAP or GAP practices.		Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Improved Yields and Income	1.5	% of export earnings going to farmers	Total paid to the farmer in 2022-2023 Buying, Coffee Purchase Log Total amount payable for coffee - In 2022-2023 Buying, Coffee Purchase Log	Annual	In-House Data (see Source of Information)	We realize that a 100% level cannot be obtained for this indicator - it would be best if you set a benchmark according to your own cost margin.		Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Improved Yields and Income	1.6	% of Median Farmer Output Growth (Median farmer coffee output increase year-on-year)	Volumes in Red Cherries" in Coffee Purchase Log requested for each individual farmer and then find median for all farmers	Annual	In-House Data (see Source of Information)	The idea behind this is to show per capita productivity growth in volume of cherries.		Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Improved Yields and Income	1.7	% of Median Farmer Income Growth (Median farmer coffee income increase year-on-year)	Total amount payable for coffee only in purchase log requested for each individual farmer and then find median for all farmers	Annual	In-House Data (see Source of Information)	The idea behind this is to show per capita income growth.		Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Social Inclusion	2.1	# of female farmers with personal gardens	Not available (yet)	Annual	New Data (Annual Survey)			Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Social Inclusion	2.2	# of female farmers who self-identify as the head of their household	Not available (yet)	Annual	New Data (Annual Survey)			Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Economic Empowerment	2.3	% of farmers in VSLAs	Not available (yet)	Annual	New Data (VSLA Survey)			Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Physical Protection of Farmers	2.4	% of farmers who say they use PPE and use chemicals	*Form. all persons on the farm that handle agrochemicals use, function AT (in "The Coffee Gardens - 2020/21 Training Dashboard")	Interval	In-House Data (see Source of Information), New Data (GAP Assessment Survey)	Added a question on this in questionnaire to be sure it's measured at a big enough scale.		Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Physical Protection of Farmers	2.5	% of farmers handling agrochemicals who have been trained on proper handling of agrochemicals	*Form. all people on the farm that handle agrochemicals are trained on pesticide use, function AT (in "The Coffee Gardens - 2020/21 Training Dashboard")	Interval	In-House Data (see Source of Information), New Data (GAP Assessment Survey)	TCG offers trainings and may offer some financing in relation to safe use of agrochemicals. Added a question on this in questionnaire to be sure it's measured at a big enough scale.		Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Physical Protection of Farmers	2.6	% of farmers that store chemicals in a safe place away from children and animals	*Form. all persons on the farm that handle agrochemicals use, function AT (in "The Coffee Gardens - 2020/21 Training Dashboard")	Interval	In-House Data (see Source of Information), New Data (GAP Assessment Survey)	Added a question on this in questionnaire to be sure it's measured at a big enough scale.		Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Environmental Protection	2.7	% of farmers who do not negatively impact protected areas	*Form. farm practices have no negative effects on protected areas eg. no spraying of in Farmer Baseline X (in "The Coffee Gardens - 2020/21 Training Dashboard")	Interval	In-House Data (see Source of Information), New Data (GAP Assessment Survey)	Added a question on this in questionnaire to be sure it's measured at a big enough scale.	When protected areas are protected, we can assume this helps to uphold and improve ongoing ecosystem health and local biodiversity.	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Environmental Protection	2.8	% of farmers who are worried about climate change	Not available (yet)	Interval	New Data (GAP Assessment Survey)			Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Lower level outcomes									

Element in ToC/ Category	TBL Relevance	Indicator Tag #	Indicator	Source of Information	Frequency of data collection	Data Type (In-House Data, New Data + Type of Survey/Observation)	Remarks	Assumptions	Disaggregation
Lower level outcomes	Environmental Protection	2.9	% of farmers have created a buffer zone of native vegetation of at least 5m between their gardens and protected areas (garden farming?)	"Form. has the farmer created a buffer zone of native vegetation at least 5m between their gardens and protected areas (garden farming?)"	Interval	In-House Data (see Source of Information), New Data (GAP Assessment Survey, Observation/Test)	Added a question on this in questionnaire to be sure it's measured at a big enough scale.	The buffer zone can be assumed to further protect local ecosystems and prevent interference with protected areas.	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)
	Environmental Protection	2.10	Level of coffee-related pollutants in surrounding waterways (i.e. tannins, phenolic and alkaloids)	Not available (yet)	Interval	Observation/Test: Two annual tests of water quality before the coffee season begins and mid-season to measure effectiveness of water treatment measures.	If not treated correctly and thoroughly, water waste from coffee can have very harmful effects on aquatic ecosystems with high levels of coffee chemicals leading to eutrophication in local waterways. This can harm biodiversity within riparian and other aquatic ecosystems and has potential negative impacts on livelihoods that rely on these systems (Janu et al., 2020).	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Environmental Protection	2.11	Level of colored coffee effluent in waterways	Not available (yet)	Interval	Observation/Test: Two annual tests of water quality before the coffee season begins and mid-season to measure effectiveness of water treatment measures.	Colored effluents from coffee processing can also cause similar harm to aquatic ecosystems through darkening the water and hindering vital photosynthesis (Janu et al., 2020).	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)	
	Environmental Protection	2.12	% of farmers who practice positive polyculture farming in their coffee gardens (i.e. the cultivation of non-competing crops to improve and ensure long-term soil quality and fertility)	"Form. other_crops_grown_in_the_garden" in Garden Assessment AA (in "The Coffee Gardens - 2020/21 Training Dashboard")	Interval	In-House Data (see Source of Information), New Data (Observation/Test)	TCG should define which crops are competing vs replenishing of soil nutrients. Added a question on this in questionnaire to be sure it's measured at a big enough scale.	Polyculture farming practices and shade-grown coffee gardens are better for biodiversity as they help support indigenous forest ecosystems and help to prevent soil quality degradation and land degradation. This is good for long-term ecosystem health as well as food security for farmers with a diversified crop profile (Sseebunya et al., 2018; Moore, 2021).	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)
	Environmental Protection	2.13	Level of integration of tree species into coffee gardens	"Form. number_of_other_shade_trees_present" in Garden Assessment AI; "Form. fruit_trees_in_garden"; "Form. number_of_ficus_trees_in_garden"; "Form. number_of_albizia_trees_in_garden"; "Form. number_of_cordia_trees_in_garden"; (in "The Coffee Gardens - 2020/21 Training Dashboard")	Interval	In-House Data (see Source of Information), New Data (GAP Assessment Survey, Observation/Test)	Disaggregate trees by shade trees. This data can be collected in tandem with the project with partner Swiss NGO of TCG. Added a question on this in the questionnaire to be sure it's measured at a big enough scale.	The integration of different trees including fruit trees, other plants, and other shade trees helps to promote biodiversity and ecosystem health providing habitats for indigenous plant and animal species (Wall, 2020; Moore, 2021) and to improve soil quality.	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)
	Environmental Protection	2.14	Frequency of farmer compost usage in gardens	"Form. when_was_the_last_time_the_farmers_applied_compost_on_this_garden" in Garden Assessment AA (in "The Coffee Gardens - 2020/21 Training Dashboard")	Interval	In-House Data (see Source of Information), New Data (GAP Assessment Survey, Observation/Test)	The Garden Assessment only includes data from 21 farms. Added a question on this in the questionnaire to be sure it's measured at a big enough scale.	Composting can support better, more sustainable waste disposal while also contributing to better soil quality for better agricultural yields.	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)
	Environmental Protection	2.15	% of farmers who use environmentally friendly waste disposal and treatment practices	Not available (yet)	Interval	New Data (GAP Assessment Survey)	This indicator should include all environmental trainings hosted by TCG.	Proper, sustainable waste disposal can help prevent land degradation, land and water pollution, and potential health complications from exposure to certain chemicals and waste materials. Training and services will improve the livelihoods of smaller, poorer farmers more in the long term than only a small increase in coffee prices. (see Impact Report 21-22)	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)
	Environmental Protection	3.1	# of farmers that completed Environmental Trainings within the last year (Good Agronomic Practices Trainings & Agroforestry Training & Pesticide Use Trainings & Sustainable Waste Disposal)	"Good_agronomic_practices" in Training Data E; "Agro-forestry" in Training Data H; AS ("Form. the_people_on_the_farm_that_handle_agronomic_chemicals_are_trained_on_pesticide") and AV ("Form. farmers_are_trained_on_the_sepa_ration_of_degradable_and_non-biodegradable_w") in Farmer Baseline; Training Data Sheet but this needs to be confirmed with Shak (in "The Coffee Gardens - 2020/21 Training Dashboard")	Annual	In-House Data (see Source of Information)	Sustainable farming equals better quality coffee, and thereby an ability to demand higher price from coffee buyers (Impact Report 21-22, p. 7; GAP training guide 2022)	Training and services will improve the livelihoods of smaller, poorer farmers more in the long term than only a small increase in coffee prices. (see Impact Report 21-22) Additionally, tree seedlings help to diversify crops and increase proportion of shade trees around gardens which contributes to long-term garden, soil, and ecosystem health.	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) (TCG, 2022)
	Environmental Protection	3.2	# of tree seedlings distributed per farmer	Tree Distribution Sheet C-1 in "The Coffee Gardens - 2020/21 Training Dashboard"	Annual	In-House Data, New Data (GAP Assessment, Observation/Test)	Added a question on this in the questionnaire to be sure it's measured at a big enough scale.		

Interventions

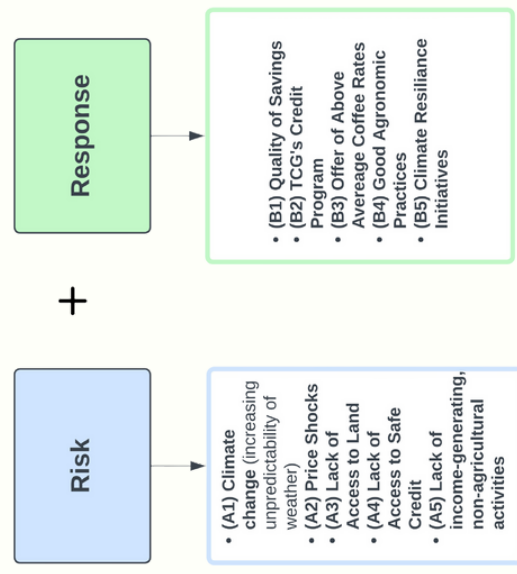
Element in ToC/ Category	TBL Relevance	Indicator Tag #	Indicator	Source of Information	Frequency of data collection	Data Type (In-House Data, New Data + Type of Survey/Observation)	Remarks	Assumptions	Disaggregation
Environmental Protection	Environmental, Economic	3.3	# of distributed tree seedlings that survived from last year	Not available (yet)	Annual	New Data (In House Data)		Training and services will improve the livelihood	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) [TCG, 2022]
Social Inclusion	Social	3.4	# of people hired from local communities	In-House Data	Annual	In-House Data (see Source of information)		All registered farmers are hired from local or	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) [TCG, 2022]
Social Inclusion	Social	3.5	# of farmers that completed a training (related to social inclusion)	"Trained?" in Training Data D; "Form farmer received training" in Registered Farmers T; (in "The Coffee Gardens - 2020/21 Training Dashboard")	Annual	New Data (In House Data)		Training and services will improve the livelihoods of smaller, poorer farmers more in the long term than only a small increase in coffee prices. (see Impact Report 21-22) All trainings stimulate social inclusion because they increase group participation and community involvement.	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) [TCG, 2022]
Financial Inclusion	Economic, Social	3.6	# of farmers that completed a training (related to financial inclusion)	"Trained?" in Training Data D; "Form farmer received training" in Registered Farmers T; (in "The Coffee Gardens - 2020/21 Training Dashboard")	Annual	New Data (In House Data)		Training and services will improve the livelihoods of smaller, poorer farmers more in the long term than only a small increase in coffee prices. (see Impact Report 21-22) All trainings stimulate social inclusion because they increase group participation and community involvement.	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) [TCG, 2022]
Financial Inclusion	Economic, Social	3.7	# of farmers who use personal farm record book	Not available (yet)	Annual	New Data (Annual Survey)	Measure their personal farm record rather than the one from TCG to capture their financial independence.	Well managed farms with farmers who main	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) [TCG, 2022]
Economic Empowerment	Economic	3.8	% of price difference offered by TCG compared to competitors	Not available (yet)	Annual	New Data (Observation/Test)	We suggest you compare the prices with a handful of competitors with similar business characteristics (e.g. in terms of kind and quantity of coffee produced). As we lack the on-the-ground knowledge we suggest you make this selection internally.	Overall market prices are difficult to measure so instead the p/kg offered by TCG last year will be used.	
Economic Empowerment	Economic	3.9	# of farmers who received an income of x/unit per year	Not available (yet)	Annual	New Data (Observation/Test)			Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) [TCG, 2022]
Economic Empowerment	Economic	3.10	% of farmers receiving bonuses	Not available (yet)	Annual	New Data (Observation/Test)			Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) [TCG, 2022]
Economic Empowerment	Economic	3.11	Bonus size as a % offered by competitors	Not available (yet)	Annual	New Data (Observation/Test)	The competitor would be based on the same methodology as for the % increase in p/kg delivered.		
Economic Empowerment	Economic	3.12	# of farmers who are included in TCG's credit program	In-House Data	Annual	New Data (Annual Survey)	We have left this indicator in as a measure of financial inclusion and economic empowerment, whereas 1.1 measures farmer loyalty.	Training and services will improve the livelihoods of smaller, poorer farmers more in the long term than only a small increase in coffee prices. (see Impact Report 21-22)	Sex, household by type of head (male or female), youth, farmer production (>1000 kg supply per year) [TCG, 2022]

Interventions

Appendix 6: Vulnerability Index

Where are the gaps?

- 1 What are the Source of Vulnerability?
- 2 What are the Potential Interventions?
- 3 Indicator for Vulnerability



Measurement of Indicators:

- Indicator Value Increased (+1)
- Indicator Value Remained the Same (0)
- Indicator Value Decreased (-1)

$$\Delta v = \frac{n_1}{n_1 + n_2} (A_1 + A_2 + A_3 + A_4) - \frac{n_2}{n_1 + n_2} (B_1 + B_2 + B_3 + B_4 + B_5)$$

Where $n_1 = n(A)$
 $n_2 = n(B)$
 $A(A_1, A_2, \dots, A_{n_1})$ denotes changes in the risks
 $B(B_1, B_2, \dots, B_{n_2})$ denotes changes in the responses
 And Δv denotes change in vulnerability compared to last year

Vulnerability Index						
Indicator	Description of risk/response	TCG data available?	If yes, indicator code	If yes, indicator description	If no, indicator suggestion	If no, suggested data source
Risk (A1)	Climate Change	No, to be collected by TCG			Average maximum temperature the 7 months prior to harvesting	Local weather station
Risk (A2)	Price shocks	Yes	Coffee purchase log, price/kg	% change in coffee price per kg		
Risk (A3)	Lack of Access to Land	No, to be collected by TCG			% suitable land per capita	FAO's GAEZ assessments (FAO, p. 13); Sironko district census data (Sironko.org)
Risk (A4)	Lack of Access to Safe Credit	No, to be collected by TCG			% loans to individuals as share of total (bank) loans	Financial Access database (see Financial Access Report, p. 26).
Risk (A5)	Lack of Income-Generating, Non-Agricultural Activities	No, to be collected by TCG			# of income-generating, non-agricultural sources of income	See the related questions on the Full Questionnaire sheet.
Response (B1)	Quality of Savings	No, to be collected by TCG			# of farmers involved in savings programme	See the related question on the Full Questionnaire sheet.
Response (B2)	TCG's Credit Program	No, to be collected by TCG			# of farmers involved in loans programme	See the related questions on the Full Questionnaire sheet.
Response (B3)	Offer of above average coffee rates	Yes	Sum(Farmer ID, Active)	# of active farmers		Assuming that each farmer that is actively involved with TCG receives standard coffee rates.
Response (B4)	Good Agronomic Practices	Yes	AVG(form.Pruning, form.stumping, form.fertility_and_water_management, form.weed_control, form.desuckering, form.pest_and_disease_management, form.agricultural_use)	# of farmers with 'good' as average score for GAP assessment		Data on performance individual elements of GAP available. Advice is to construct an indicator for the average score (0 for not done, 1 for fair, 2 for good).
Response (B5)	Climate Resilience Initiatives	No, to be collected by TCG			# of farmers with 'good' as average score for Climate Resilience assessment.	TCG should identify relevant climate resilience initiatives to train the farmers on. We suggest trainings in e.g. heat-resilient crops, climate buffering (Schmidt & Bunn, 2021), water management, soil quality management, disaster preparation, land erosion training, and effective use of shade trees.

7 months is suggested in the paper but depends on the growing of the specific coffee bean. If possible, disaggregate by altitude Sachs et al. (2019, p. 32).

Should keep in mind that in Uganda, land generally passes to sons.

Access to safe credit at the farmer level almost impossible to measure, which is why we use the World Bank approach for measuring distributions of loans per individual at the bank-level.

See the related questions on the Full Questionnaire sheet.

See the related question on the Full Questionnaire sheet.

Assuming that each farmer that is actively involved with TCG receives standard coffee rates.

Data on performance individual elements of GAP available. Advice is to construct an indicator for the average score (0 for not done, 1 for fair, 2 for good).

Suggested questions for farmers following the climate resilience trainings: Do you integrate shade trees within your coffee gardens? Do you integrate shade trees and ground cover around your garden in ways to create a climate buffer that help prevent damage from wind and heavy rainfall? Do you integrate nitrogen-fixing shade trees and plants within your coffee gardens? Do you help promote biodiversity within your gardens through intercropping multiple types of local plants and trees that support local ecosystems within your garden? Do you plant trees and plants that are noncompetitive for nutrients? Do you use any fertilizers? If so, are they natural? Have you begun to adapt your garden to new climatic changes, such as temperature increases and increases in variability and intensity of weather? Have you taken trainings or do you have plans for potential natural disasters? Would you benefit from increased trainings on adaptation and disaster preparation? Have you taken trainings on water management? Would you benefit from increased trainings on water management? (Sachs et al., 2019, p. 32)

Appendix 7: Full Questionnaire

Full Questionnaire								
Theme	Indicator	Vulnerability Index / M&E Framework Questions	Frequency of Data Collection	Data Delivery Tool	Question	Response Options	Condition	Remarks
Metadata	Metadata	Neither	Annual Survey	Annual Survey	Date of Data Collection	Open		
	Metadata	Neither	Annual Survey	Annual Survey	Name of Data Entrant	Open		
	Metadata	Neither	Annual Survey	Annual Survey	Farmer Name	Selected automatically in CommCare from list		
Data Protection	Consent	Neither	Annual Survey	Annual Survey	Does the farmer consent to give data to TCG? This data may be shared with our partners so that we can provide better training and support?	Yes No	If no, questionnaire ends	
	Indicator 2.1: # of female farmers with personal gardens	M&E Framework Question	Annual Survey	Annual Survey	Do you have your own garden? Is the coffee you supply us from your own garden? This includes rented plots	Yes - I own and manage my own gardens No - they are owned by a family member I share with family (husband, siblings, children) Yes No	Female farmers only If previous answer <= Yes questionnaire ends	avoid double counting of households
Demographic Data	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	Is the person who owns the gardens also a registered farmer?	Yes No	Female farmers only	
	Indicator 2.2: # of female farmers who self-identify as the head of their household	M&E Framework Question	Annual Survey	Annual Survey	Are you the head of your household?	Yes No	Female farmers only	
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	Number of Males under 18 in the household	Open		
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	Number of Males between 18 and 35 in the household	Open		
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	Number of Males between over 35 in the household	Open		
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	Number of Females under 18 in the household	Open		
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	Number of Females between 18 and 35 in the household	Open		
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	Number of Females between over 35 in the household	Open		
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	What is the farmer's seasonal goal for the next season (kg of cherry)?	1-100 kg 100 - 250 kg 250 kg - 500 kg 500 kg - 1,000 kg 1,000 kg - 2,500 kg 2,500 kg - 5,000 kg More than 5,000 kg	choose one We can use this in the subsequent year to compare deliveries to TCG vs seasonal goal to calculate loyalty	
	Indicator 1.2: Disaggregation question (this can help to break down data on % of farmers that provided coffee in previous years)	M&E Framework Question	Annual Survey	Annual Survey	What proportion of the farmer's coffee did they supply to TCG last season?	Less than 1/4 Between 1/4 and 1/2 Between 1/2 and 3/4 Almost all	choose one	
Socio-Economic	Lack of income-generating, non-agricultural activities (A5)	Vulnerability Index	Annual Survey	Annual Survey	What is the farmer's primary source of income?	Coffee cherries Milk Purchasing coffee Livestock Crops Fruit & Vegetable Labour (from TCG) Labour (TCG) Renting out land Renting in land Trading/Brokerage Boda Boda Other	Choose one	
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	If other, then what?	Open	If previous answer = Other	
	Lack of income-generating, non-agricultural activities (A5)	Vulnerability Index	Annual Survey	Annual Survey	What are the farmer's different sources of income?	Purchasing coffee Milk Eggs Livestock Crops Fruit & Vegetable Selling wood/char Labour (from TCG) Labour (TCG) Renting out land Renting in land Trading/Brokerage Boda Boda Other	Choose many	
	Indicator 3.7: # of farmers who use personal farm record book	M&E Framework Question	Annual Survey	Annual Survey	Do you record your farming income? (This does not include the TCG coffee sales record book)	Yes No Unsure	If the farmer has selected no to personally recording their farming income	
	No relevant indicator - demographic data	M&E Framework Question	Annual Survey	Annual Survey	If no, do you want to?	Yes No Unsure	If the farmer has children under 18	
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	Are your school age children all attending school?	Yes No Unsure		
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	If no, why not?	No school fees Needed for house work Other reasons	If previous answer = No or Some	
	Indicator 2.3: % of farmers in VSLAs	M&E Framework Question	Annual Survey	Annual Survey	If other, then what?	Open	If previous answer = Other reason	
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	What is the name of the VSLA?	Yes No Other	If previous answer = yes choose one	
	Quality of Savings (B1)	Vulnerability Index Question	Annual Survey	Annual Survey	How do you save money?	Savings group Mobile Money Bank account - Bank Bank account - MFI Other None, saving at home	choose many	
Financial Inclusion	TCG's Credit Program (B2)	Vulnerability Index Question	Annual Survey	Annual Survey	If other, then what?	Yes No	Have you taken out any loans in the past one year?	

TCG's Credit Program (B2)	Vulnerability Index Question	Annual Survey	Annual Survey	Annual Survey	Annual Survey	Where from?	Family members/close friends of farmer/ business people The Coffee Garden Microfinance institution Banks institution Other coffee buyers/companies	If previous answer = Yes	Choose many?
No relevant indicator - demographic data	Neither	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	Which garden are we visiting?	Major garden Other garden	select one		
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	What is the productivity level of the coffee trees?	Young - immature Productive Overcrowded - needs pruning and desuckering Not productive - needs soil fertility and water management Minimal production due to age - needs stumping Not productive - recently stumped	select many		
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	What is the general health of the coffee trees?	Very healthy Mostly healthy Slightly affected with pest and disease Heavily affected with pest and disease	select one		
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	Which pests and diseases does the farmer typically experience?	CBB CRD Coffee rust Stem borer Other	select many		
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer done pruning?	Good Fair Poor Not Done	select one	Observation	
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer done stumping?	Good Fair Poor Not Done Not done but not needed	select one	Observation	
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer done desuckering?	Good Fair Poor Not Done Not done but not needed	select one	Observation	
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer done sucker selection?	Good Fair Poor Not Done Not done but not needed	select one	Observation	
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer done soil fertility and water management?	Good Fair Poor Not Done	select one	Observation	
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer done weed control?	Good Fair Poor Not Done	select one	Observation	
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer done cover cropping and mulching?	Good Fair Poor Not Done	select one	Observation	
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer done trenching?	Good Fair Poor Not Done	select one	Observation	
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer done hole preparation and planting?	Good Fair Poor Not Done Not done but not needed	select one	Observation	
Indicator 2.14: Frequency of farmer compost usage in gardens	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	Does the farmer use compost in the gardens?	Good Fair Poor Not Done	select one		
Indicator 1.4: % of farmers fulfilling GAP	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	How well has the farmer maintained farm hygiene?	Good Fair Poor Not Done	select one		
Indicator 2.12: % of farmers who practice positive perennium farming in gardens (i.e. the cultivation of trees and shrubs and ensure long-term soil quality and fertility)	M&E Framework Question	Interval Survey	Interval Survey	Observational Test	To what extent is this farmer maximizing the usage of their land (are they using competing crops for soil quality)?	Very well Fairly well Fairly Not Well	select one		
Indicator 2.13: Level of integration of tree species into coffee gardens	M&E Framework Question	Interval Survey	Interval Survey	Observational Test	What types of trees does the farmer have in their garden(s)?	Shade Fruit Medicinal Woodcut Farm growing	select many		
Indicator 2.13: Level of integration of tree species into coffee gardens	M&E Framework Question	Interval Survey	Interval Survey	Observational Test	What species?	List of species, TCG to provide list	Species list will be shown based on previous question		Again, we didn't discuss this in the meeting but might be good to include. Would we want the function of quality savings to also be dependent on the number of savings?
Climate Change (A1)	Vulnerability Index Question	Interval Survey	Interval Survey	GAP Assessment Survey	Do you integrate shade trees and ground cover around your garden in ways to create a climate buffer that help prevent damage from wind and heavy rainfall?	-Yes the garden is well suited to protect against hail, floods, erosion and other natural calamities -The garden is at risk from hail, floods, erosion and other climatic damage	select one	Observation	
Indicator 2.13: Level of integration of tree species into coffee gardens	M&E Framework Question	Interval Survey	Interval Survey	GAP Assessment Survey, Observational Test	What is the level of shade cover?	Low Medium High	select one	Observation	
					How does the farmer compare this garden to their other gardens? Why does the farmer think are the reasons? Have you received tree seedlings from TCG in the past?	This is the best garden This is the worst garden All gardens are the same/similar free text yes No	select one required		

Indicator 3.2: # of distributed tree seedlings that survived from last year	M&E Framework Question	Internal Survey	GAP Assessment Survey, Observation/Test	How many of your tree seedlings distributed by TCG survived?	Integer	If previous question = yes
No relevant indicator - demographic data	Neither	Internal Survey	GAP Assessment Survey, Observation/Test	Need for more trees on your land?	Fruit Fruit growing Shade Medicinal Other None	select many
No relevant indicator - demographic data	Neither	Internal Survey	GAP Assessment Survey, Observation/Test	What types of crops & vegetables does the farmer typically grow in their garden(s)?	List of species, TCG to provide list	select many
Indicator 2.8: % of farmers who are worried about climate change	M&E Framework Question	Interval Survey	GAP Assessment Survey	Are you worried about the effects of climate change? Have you experienced any effects?	Yes No Unsure	If answer to previous question = Yes
Indicator 2.8: % of farmers who are worried about climate change	M&E Framework Question	Interval Survey	GAP Assessment Survey	Which effects?	Open	Yes
Climate Change (A1)	Vulnerability Index Question	Interval Survey	GAP Assessment Survey	Have you taken trainings or do you have plans for potential landslides or flooding?	Yes No	
Climate Change (A1)	Vulnerability Index Question	Interval Survey	GAP Assessment Survey, Observation/Test	Which trainings has the farmer taken in the past?	Agroforestry/Tree planting Permaculture (use of mutually beneficial plants) Organic farming Water management Soil conservation and erosion control Composting	select many
Climate Change (A1)	Vulnerability Index Question	Interval Survey	GAP Assessment Survey	Have you introduced any mitigation steps to become less prone to natural disasters?	Yes No	If previous question = yes
Climate Change (A1)	Vulnerability Index Question	Interval Survey	GAP Assessment Survey	Which ones?	free text	
Climate Change (A1)	Vulnerability Index Question	Interval Survey	GAP Assessment Survey	Would you benefit from increased trainings on adaptation and landslides/flood preparation?	Yes No Unsure	
Climate Change (A1)	Vulnerability Index Question	Interval Survey	GAP Assessment Survey	Do you use any fertilizers?	Yes No	If answer to previous question = Yes
Climate Change (A1)	Vulnerability Index Question	Interval Survey	GAP Assessment Survey	Which fertilizers?	List of fertilizers, TCG to provide list	
Indicator 2.4: % of farmers who say the use PPE and use chemicals	M&E Framework Question	Interval Survey	GAP Assessment Survey	What have you done in the last 6 months to manage pest and disease	Biological Mechanical Chemical - Pesticide Chemical - Fungicide Cultural Management Unsure	select many?
Indicator 2.4: % of farmers who say the use PPE and use chemicals	M&E Framework Question	Interval Survey	GAP Assessment Survey	Which pesticides?	List of pesticides, TCG to provide list	If (one of) the answers to previous question = Chemical
Indicator 2.4: % of farmers who say the use PPE and use chemicals	M&E Framework Question	Interval Survey	GAP Assessment Survey	Which fungicides?	List of fungicides, TCG to provide list	If (one of) the answers to previous question = Chemical
Indicator 2.5: % of farmers handling agrochemicals who have been trained on proper handling of agrochemicals	M&E Framework Question	Interval Survey	GAP Assessment Survey	Have you been trained on how to use these chemicals?	Yes No	If (one of) the answers to question on pest and disease management = Chemical
Indicator 2.6: % of farmers that store chemicals in a safe place away from children and animals	M&E Framework Question	Interval Survey	GAP Assessment Survey	Do you use any personal protection equipment when applying chemicals for your coffee garden?	Yes No	If (one of) the answers to question on pest and disease management = Chemical
Indicator 2.7: % of farmers who do not negatively impact protected areas	M&E Framework Question	Interval Survey	GAP Assessment Survey	Do you store your agrochemicals in a place that is safe from children and animals?	Yes No	If (one of) the answers to question on pest and disease management = Chemical
Indicator 2.5: % of farmers have created a buffer zone of native vegetation of at least 5m between farms and protected areas (garden farming?)	M&E Framework Question	Interval Survey	GAP Assessment Survey, Observation/Test	Do you encroach into protected areas? This includes the Mt Elgon national park, its buffer zone and any water sources (springs, streams and rivers)	Harvest from protected areas Farm in protected areas Gather firewood in protected areas Wash in protected areas None	select many
Indicator 2.15: % of farmers who use environmentally friendly waste disposal and treatment practices	M&E Framework Question	Interval Survey	GAP Assessment Survey, Observation/Test	Do you have a buffer zone of at least 5 meters of native vegetation between your gardens and protected areas?	Yes No Not near to any protected areas	Observation
Indicator 2.15: % of farmers who use environmentally friendly waste disposal and treatment practices	M&E Framework Question	Interval Survey	GAP Assessment Survey	What do you do with garden waste? e.g. leaves, vegetation, food scraps, grass, manure trunks	Feed to animals (F) Compost (F) Pile up (F) Do not collect (NF) Burn (NF) Crush (e.g. baskets) Compost (F) Pile up (F) Spread in gardens before composting (NF) Do not collect (NF) Non-ryegrass (do not pulp) Burn (NF) Bury - designated anaerobic (F) Bury - non-designated area (NF) Ignore (NF) Dump off site (NF) Use as mulch (NF) Straw & Bag (NF) Tilling/Digging but no mulching (NF) Tilling/Digging and mulching (F) Spraying weedicider (NF) Nothing (F)	select many
Indicator 2.15: % of farmers who use environmentally friendly waste disposal and treatment practices	M&E Framework Question	Interval Survey	GAP Assessment Survey	What do you do with coffee pulps?	Feed to animals (F) Compost (F) Pile up (F) Do not collect (NF) Burn (NF) Crush (e.g. baskets) Compost (F) Pile up (F) Spread in gardens before composting (NF) Do not collect (NF) Non-ryegrass (do not pulp) Burn (NF) Bury - designated anaerobic (F) Bury - non-designated area (NF) Ignore (NF) Dump off site (NF) Use as mulch (NF) Straw & Bag (NF) Tilling/Digging but no mulching (NF) Tilling/Digging and mulching (F) Spraying weedicider (NF) Nothing (F)	select many
Indicator 1.4: % of farmers tilling GAP	M&E Framework Question	Interval Survey	GAP Assessment Survey, Observation/Test	How do you prepare your land after harvest?	Yes No Uncertain	select one
Indicator 1.4: % of farmers tilling GAP	M&E Framework Question	Interval Survey	GAP Assessment Survey, Observation/Test	Is the pit latrine located far away from water sources? This includes underground water sources (e.g. boreholes, high water table areas)	Yes No Uncertain	Observation

Future Needs	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	What are the key improvements the farmer would like to make over the coming six months?	Farming practices - GAPIS Farming practices - non-competitive polyculture Farming practices - crop rotation Farming practices - disease control Record keeping Budgeting & Savings VSLA membership Farming business activities Farming business - marketing Less reliance on agrochemicals Other	select many	
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	If other, then what?	Open	If answer to previous question = Other	
	No relevant indicator - demographic data	Neither	Annual Survey	Annual Survey	Would you be willing to pay for expert advisory services?	Yes No Unsure		

Appendix 8: Scorecards

TCG Organization and Farmer Scorecard

Note: Two styles of scoring have been created. "Category Equal Weighting" scoring indicates the points available for each indicator category (where each section is worth 11.1 points, with each indicator in that category having an equal value of points) whereas the "Indicator Equal Weighting" scoring indicates an equal points value for each indicator (and thus each category is worth a varying amount of points).	
Note 2: This scorecard is only based on the indicators in the framework. An alternate version is provided below (starting in row 35) which includes additional data points included in Shak's comments regarding disaggregated data (breakdown of people employed at a female/youth level) and inclusion in groups.	

TCG Organization Scorecard

Indicator Category	Indicators	Number of Indicators	Notes	Points (Category Equal Weighting)	Points per Indicator for Equal Category Weighting	Points (Indicator Equal Weighting)
Improved Yields and Income	1.5, 1.6, 1.7	3	1.6 can be quant	11.1	3.7	8.823529412
Farmer's Loyalty	1.1, 1.2	2		11.1	5.55	5.882352941
Reduced Vulnerability	1.3	1		11.1	11.1	2.941176471
Good Agronomic Practices	1.4	1		11.1	11.1	2.941176471
Social Inclusion	2.1, 2.2, 3.4, 3.5	4		11.1	2.775	11.76470588
Financial Inclusion	3.6, 3.7	2		11.1	5.55	5.882352941
Physical Protection of Farmers	2.4, 2.5, 2.6	3		11.1	3.7	8.823529412
Environmental Protection	2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 3.1, 3.2, 3.3	12		11.1	0.925	35.29411765
Economic Empowerment	2.3, 3.8, 3.9, 3.10, 3.11, 3.12	6		11.1	1.85	17.64705882
Total		34		99.9		100

Farmer Scorecard

Indicator Category	Indicators	Number of Indicators	Notes	Points (Equal Category Weighting)	Points per Indicator for Equal Category Weighting	Points for Category (Indicator Equal Weighting - Men)	Points for Category (Indicator Equal Weighting - Women)
Improved Yields and Income	1.5, 1.6, 1.7	3	For farmers with	11.1	3.7	11.53846154	10.71428571
Farmer's Loyalty	1.1, 1.2	2		11.1	5.55	7.692307692	7.142857143
Reduced Vulnerability	1.3	1		11.1	11.1	3.846153846	3.571428571
Good Agronomic Practices	1.4	1		11.1	11.1	3.846153846	3.571428571
Social Inclusion	3.5 (+2.1, 2.2 for female farmers)	1(3)	1 for men, 3 for women	11.1	11.1 (men) / 3.7 (women)	3.846153846	10.71428571
Financial Inclusion	3.6, 3.7	2		11.1	5.55	7.692307692	7.142857143
Physical Protection of Farmers	2.4, 2.5, 2.6	3		11.1	3.7	11.53846154	10.71428571
Environmental Protection	2.7, 2.8, 2.9, 2.10, 2.13, 2.14, 2.15, 3.1, 3.2, 3.3	10		11.1	1.11	38.46153846	35.71428571
Economic Empowerment	2.3, 3.9, 3.12	3		11.1	3.7	11.53846154	10.71428571
Total		26(28)		100		100	100

ALTERNATE SCORECARDS

Data needed for alternate scorecard beyond M&E Framework:
 - Disaggregated employment data from Indicator 3.4 (women and youth)
 - Membership numbers in TCG run groups
 - Membership numbers in TCG supported groups

TCG Organization Scorecard						
Indicator Category	Indicators	Number of Indicators	Notes	Points (Category Equal Weighting)	Points per Indicator for Equal Category Weighting	Points (Indicator Equal Weighting)
Improved Yields and Income	1.5, 1.6, 1.7	3	1.6 can be quant	11.1	3.7	7.894736842
Farmer's Loyalty	1.1, 1.2	2		11.1	5.55	5.263157895
Reduced Vulnerability	1.3	1		11.1	11.1	2.631578947
Good Agronomic Practices	1.4	1		11.1	11.1	2.631578947
Social Inclusion	2.1, 2.2, 3.4, 3.5, 3.4--women, 3.4--youth, TCG Group Members, TCG-Supported Group Members	8		11.1	1.3875	21.05263158
Financial Inclusion	3.6, 3.7	2		11.1	5.55	5.263157895
Physical Protection of Farmers	2.4, 2.5, 2.6	3		11.1	3.7	7.894736842
Environmental Protection	2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 3.1, 3.2, 3.3	12		11.1	0.925	31.57894737
Economic Empowerment	2.3, 3.8, 3.9, 3.10, 3.11, 3.12	6		11.1	1.85	15.78947368
Total		38		99.9		100

Farmer Scorecard							
Indicator Category	Indicators	Number of Indicators	Notes	Points (Equal Category Weighting)	Points per Indicator for Equal Category Weighting	Points for Category (Indicator Equal Weighting - Men)	Points for Category (Indicator Equal Weighting - Women)
Improved Yields and Income	1.5, 1.6, 1.7	3	For farmers with	11.1	3.7	11.11111111	10.34482759
Farmer's Loyalty	1.1, 1.2	2		11.1	5.55	7.407407407	6.896551724
Reduced Vulnerability	1.3	1		11.1	11.1	3.703703704	3.448275862
Good Agronomic Practices	1.4	1		11.1	11.1	3.703703704	3.448275862
Social Inclusion	3.5, TCG-Related Group Member, (+2.1, 2.2 for female farmers)	2(4)	1 for men, 3 for women	11.1	5.55 (men) / 2.775 (women)	7.407407407	13.79310345
Financial Inclusion	3.6, 3.7	2		11.1	5.55	7.407407407	6.896551724
Physical Protection of Farmers	2.4, 2.5, 2.6	3		11.1	3.7	11.11111111	10.34482759
Environmental Protection	2.7, 2.8, 2.9, 2.10, 2.13, 2.14, 2.15, 3.1, 3.2, 3.3	10		11.1	1.11	37.03703704	34.48275862
Economic Empowerment	2.3, 3.9, 3.12	3		11.1	3.7	11.11111111	10.34482759
Total		27(29)		100		100	100