

Expanding Horizons at One Acre Fund

McGill Management International Case Competition 2017

Nearly 800 million people in the world suffer from food insecurity.¹ This hunger, or chronic undernourishment, means that a person is not able to acquire enough food to meet the daily minimum dietary energy requirements. Undernourishment is the primary contributor to physical and mental stunting in children, and is the number one factor in child mortality. Every day that a child fails to eat, that child loses a little bit of his or her future. Amongst the world's extreme poor, one in three children are permanently stunted from a lifetime of not eating enough. When combined with poor access to health care, one in 10 extremely poor children die before they reach the age of five.² Without a doubt, food insecurity presents a significant barrier to unleashing the world's full human potential.

One Acre Fund ("OAF") is a non-profit organization that serves farmers, who they believe are the key to ending poverty and hunger. OAF is constantly looking to deliver more social good through its product and service offerings. Having scaled rapidly in its first ten years of operations, OAF must now decide how to strategically proceed into new or existing markets.

One Acre Fund: The First Decade

Smallholder farmers comprise 75% percent of the world's poorest citizens, including 50 million households in Africa. Sub-Saharan Africa has the highest prevalence of hunger; one in four people are undernourished.³ Farmers represent one of the most neglected groups of poor people on the planet, most of whom live in remote areas and do not have access to basic agricultural tools and training.

In 2005 Andrew Youn, founder and CEO of OAF, visited Western Kenya and witnessed the devastating reality of the "hunger season". This is a period of one to nine months when the crop stockpiles start to run out and meals are cut down to two, one or even none per day. He wondered to himself why these farmers had been left behind, given that the Green Revolution had brought improved farming inputs, tools and technologies to farmers elsewhere in the world, helping to almost eliminate agricultural poverty in these places. Youn was convinced that if we could simply deliver high quality inputs, tools and training, these smallholder farmers could pull themselves out of poverty, feed their families and neighbours, and ultimately eradicate hunger in their communities.

*"Most of the world's poor are farmers. This really gets me excited. All of these people, one profession. Think about how powerful that is. When farmers become more productive, then more than half the world's poor earn more money and climb out of poverty. When they earn more food, they don't just help themselves but they help feed healthy communities and thriving economies."*⁴

¹ Food and Agriculture Organization of the United Nations, "The State of Food Insecurity in the World (2015),"8.

² Youn, Andrew, TED: "3 reasons why we can win the fight against poverty,"

http://www.ted.com/talks/andrew_youn_3_reasons_why_we_can_win_the_fight_against_poverty/transcript?language=en

³ Food and Agriculture Organization of the United Nations, "The State of Food Insecurity in the World (2014),"2, 4, 8.

⁴ Youn, Andrew, TED: "3 reasons why we can win the fight against poverty,"

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Other philanthropists, politicians, and business people share Youn’s convictions. “If you care about the poorest, you care about agriculture,” said Bill Gates on behalf of the Bill & Melinda Gates Foundation.⁵ “There is no reason why Africa should not be feeding itself,” said Barack Obama as he vowed to make food security a priority at the G8 meeting in 2012.⁶

Youn founded OAF in February 2006, serving 38 farm families in Bungoma, Western Kenya. OAF provided these farmers with farm inputs on credit, such as high quality fertilizer and maize seed, agricultural trainings and personalized follow-up conducted by a local Field Officer throughout the season. These families saw their farm profits per acre double in that first planting season. Youn realized that if he could find an effective and efficient way to scale this model, he could make a huge breakthrough in the fight to eradicate extreme poverty and hunger. Through the hard work of dedicated field staff, over the past 10 years OAF’s core program has proliferated from 38 families in one village to 400,000 families in thousands of villages in six countries. **Appendix 1** shows OAF’s client growth in its first decade.

Core Program Model

Today, OAF operates in six countries, all located in sub-Saharan Africa: Kenya, Rwanda, Burundi, Tanzania, Uganda and Malawi. OAF developed its core model by talking with hundreds of farmers to discover what they needed to improve their harvests and livelihoods. While OAF is continuously innovating and tweaking its offerings to adapt to the needs of an evolving clientele, the simplicity and effectiveness of its foundational core program “service bundle” still provides value to the more than 400,000 farm families.



Figure 1: One Acre Fund core countries

The OAF service bundle, which is fundamentally consistent across different country operations includes four main components:

⁵ Bill & Melinda Gates Foundation, “Helping Poor Farmers, Changes Needed to Feed 1 Billion Hungry,” <http://www.gatesfoundation.org/Media-Center/Press-Releases/2012/02/Helping-Poor-Farmers-Changes-Needed-to-Feed-1-Billion-Hungry>

⁶ Gharib, Malaka, “Big win for agriculture: President Obama outlines new plan for global food security”, <https://www.one.org/us/2012/05/18/big-win-for-agriculture-president-obama-outlines-new-plan-for-global-food-security/>

1. **Financing:** Provide inputs on credit and facilitate flexible repayment. The average loan size for one farm family is US\$72, although this varies by country, ranging from US\$31 to US\$117.
2. **Rural Input Distribution:** Deliver high quality seed and fertilizer within walking distance of each farm family. OAF serves more than 2,000 rural distribution points across the countries in which it operates.
3. **Agricultural Training:** Lead frequent in-field trainings and individualized farmer follow-up from planting through harvest.
4. **Post-Harvest Facilitation:** Introduce tools and trainings to help farmers store and sell their harvests in an effective and efficient manner, to maximize profit on yield.

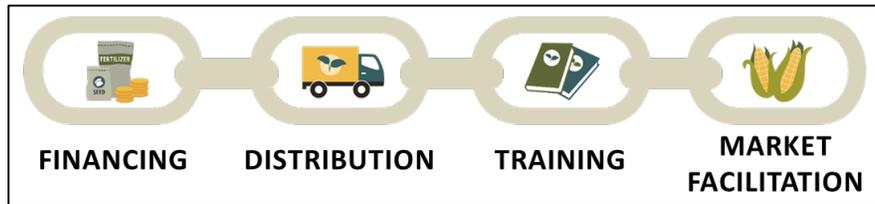


Figure 2: One Acre Fund core model services

All services are provided directly to each farmer by a Field Officer (“FO”) who serves one village. FOs act as trainers, advisors, salespeople, loan officers, and trusted community members for OAF farmers. Often, an FO is a model farmer for his or her community member and may have participated as an OAF farmer in the past. Much of the success of the core model depends on this individual, who is entrusted with building a personal relationship with his or her clients in the field.

The FO’s daily responsibilities depend on the seasonality of the farm calendar:

- **Enrollment:** FOs recruit farmers to participate in OAF’s program through a variety of strategies. For example, an FO may mobilize group leaders or strong farmers to recruit new clients to the program. An FO might go door to door explaining the benefits of participating. An FO might hold marketing meetings in advance of the contract signing period to demonstrate and explain the products and services, using testimonials from existing clients. The most effective form of marketing is the positive harvest results of an OAF farmer that can be seen by the entire community. Farmers, in groups of 5-15, sign a contract indicating the products they would like to receive on credit in the upcoming season.
- **Planting:** When the rain comes, FOs focus on helping clients plant using best practices on which they are trained by OAF. At the distribution point, there are often planting trainings and demonstrations for the most popular crops. An FO will also frequently visit farmers in their fields to assist with planting and to give advice on planting distances, use of rows, intercropping, fertilizer application, etc.
- **Regular follow-up:** During the growing and harvest season, the FO maintains his or her relationship with farmers by holding meetings at least two times per month. At these meetings, the FO delivers agricultural training, provide relevant information, answers questions, and facilitates repayment. Outside of the regular meetings, the FO also makes individual farmer visits to support his or her clients, as necessary.
- **Repayment collection:** FOs facilitate repayment throughout the season for clients, who can make payments as small as US\$0.10 on any payment schedule they choose, provided they meet the final repayment deadline. In a few OAF countries, repayment is done through mobile money, a cashless technology leveraging mobile phones. In most OAF countries, FOs collect cash, which they then

deposit into OAF's bank account, and return copies of payment receipts to the office for data entry and matching to the correct client's account.

- **Reporting:** Throughout the entire season, FOs are responsible for tracking key indicators that help OAF country leadership monitor performance and program health. For example, FOs might track the number of clients who attended a planting training or the percentage of clients who plan to enroll in the next season. FOs report this information once a week at a district meeting, where they come together with their Field Manager (one per 6-8 FOs), Field Director (one per 40-60 FOs), and other support staff. These district offices report information to country headquarters over the Internet or phone.

OAF currently employs more than 2,000 FOs across its six primary countries of operations. Depending on the density of farmers enrolled in a village, an FO can serve up to 300 clients, although the average in OAF's core countries is around 200. The client/FO ratio largely depends on proximity of farmers, ease of moving within the village, program popularity, and FO marketing performance. Typically this ratio increases as a country program matures and finds effective levers to achieve efficient staffing.

In addition to its six core countries, OAF has active pilots in Zambia and Myanmar, serving 1,700 and 300 farm families, respectively. OAF is also scouting potential future expansion locations in India and Nigeria.

Field Challenges

FOs have an extremely demanding job. They walk, sometimes extremely far distances, each day to visit their clients. They have competing priorities of taking care of their families, working in their fields, and completing all required tasks for OAF. The smallholder farmers in the areas that OAF operates are typically risk averse and vulnerable to financial shocks. As such, they can be resistant to enroll or to take more inputs with OAF given the risk of taking on credit. Furthermore, clients' uncertain cash flow can make repayment collection very challenging.

Managing a remote and disparate workforce at scale can be difficult for OAF head office staff. When a decision or change is made at headquarters, often that message needs to be disbursed through hundreds of FOs, largely orally or through formalized trainings. Leadership is constantly looking for the most effective way to motivate FOs to perform well and stay with OAF for many years.

Alternative Models

OAF also considers and experiments with models that do not follow the traditional core approach. Examples of non-core approaches include:

- **Tanzania rural retail:** OAF-owned brick-and-mortar shops which can provide a more flexible ordering and pick-up process for farmers who do not require credit nor FO field follow-up.
- **Tanzania solar-home systems:** OAF is seeking to become a first-mover in an increasingly competitive solar-powered home lighting market by offering a dedicated purchasing opportunities to clients completely separate from its agricultural products.
- **Rwanda agro dealers:** OAF acts as a wholesaler and distributor of high-quality fertilizer and seed to the already existing network of agro dealers. OAF capitalizes on its supply chain and economies of scale to provide on-time deliveries to shop-owners with a flexible credit option.

These innovative service models and others exist to reach different customer segments, adapt to challenging political climates, or deliver a different type of product or service. They can also help OAF introduce interventions at a much larger scale by tapping into existing networks which already serve thousands of farmers. However, these interventions generally create less impact per farmer versus the core model.

As OAF continues to grow, it strives to tailor its service offerings to the needs of each region it operates in. However, it is challenging to find the appropriate balance between the increased complexity that comes with program customization and the efficiency wins of operational standardization.

Impact & Scale

OAF’s unique yet simple combination of financing, input access, and training leads to more than US\$100 of impact per farm family on average per year. OAF defines its impact as the incremental income retained by farmers after repaying OAF. This is the single most important selection criterion used by OAF when deciding whether to pursue a new product, service or farming methodology. OAF compares the income earned from a specific intervention to what the same farmer would have earned without the intervention to determine the incremental benefit of such intervention. For example, if a farmer is able to harvest 28 kilograms of maize by planting in rows, an OAF planting recommendation, versus 22 kilograms had they planted in the traditional method, the positive impact of the intervention for that farmer is the dollar value of 6 kilograms of maize, assuming there is no additional cost to planting in rows. The Innovations team creates a hypothesis, or model, to help propose potentially impactful interventions. An illustrative example of an impact model for farming climbing beans in OAF’s program is set out in **Figure 3**.

10 ares of land (100 ares = 1 hectare)	OAF member (Treatment)	Non-OAF member (Control)
Fertilizer used (kg)	9.3	6.5
Bean seed used (kg)	10.0	13.6
Harvest (kg/10 ares)	178.0	124.0
Farmer revenue (USD)	83	53
Input & other costs (USD)	20	16
Profit (USD)	63	37
Increased profit (USD)	26	
Increased profit (%)	71%	

Figure 3: Climbing beans impact model, illustrative only

Measuring Results

OAF validates the impact hypothesis by measuring actual results every season in all countries of operation. During harvest time, the Monitoring and Evaluation (“M&E”) team conducts in-field harvest surveys to measure harvests of program (treatment) farmers and comparing such harvests to those of non-program (control) farmers. The M&E team includes all costs and revenues (potential or real, since many farmers simply consume their harvest rather than sell) and determines the profit of each farmer. The difference in profit is OAF’s impact. **Figure 4** shows that the impact level can differ by country over time, due to many factors including land size, crop mix, and adoption of good agricultural practices.

		\$ GAIN IN FARM INCOME		% GAIN IN FARM INCOME	
		2014	2015	2014	2015
KENYA		\$170	\$211	40%	48%
RWANDA		\$70	\$54	53%	53%
BURUNDI		\$67	\$99	99%	111%
TANZANIA		\$78	\$87	20%	14%
WEIGHTED PROGRAM AVERAGE		\$116	\$137	52%	55%

Figure 4: Impact by country, 2014 & 2015

Quality of Life surveys conducted by the M&E team also help OAF to gauge improvements in farm families’ lives beyond profit alone and over a longer time horizon. For example, the Household Dietary Diversity Score (“HDDS”) is obtained by asking a variety of simple questions about food intake at the household level. This score is used as a proxy measure of household food security and diversity. In 2015, OAF found that farmers who had been in the OAF program for 2+ seasons had 18% better food security than newly enrolled farmers. OAF’s Quality of Life survey also measures indicators such as education spending and proportion of sick individuals who sought medical care. Until now, OAF does not include these quality of life indicators in its impact calculation that focuses primarily on farmer income. However, OAF wonders if there’s a way to include these metrics when assessing its results.

Case Study: Rwanda

Margaret Vernon, global impact director and general partner, has worked with OAF for over 9 years. When Vernon started her work in Rwanda, a small hilly country where close to 80 percent of the population engages in farming as an economic activity⁷, the program served 364 farm families in one district. The main crops farmed by smallholders in Rwanda are maize and beans, and as such, OAF focused primarily on building a core program offering of improved seed and fertilizer for these crops which were highly impactful on farmers’ small land sizes. The average total impact per core program member, considering all products and services offered, in Rwanda was US\$73 in 2016. This was due to US\$58 of impact from agricultural products and US\$15 of impact from add-on products such as solar lamps.

The Impact Box

While Vernon and her team look for products and services that have a high per-adopter impact, they also prioritize opportunities that can be realized on a large scale. For example, an energy-efficient cook stove with impact of US\$18 per adopter was introduced in Rwanda in 2015. However, when offered to 160,000 farmers, only 3% ordered the product. Although the stove’s impact was high, adoption was very low. On the other hand, when bush bean seed with impact of US\$15 per adopter was offered to the same group of farmers, approximately 12% ordered the product. The total impact of the bush bean seed (US\$288,000) therefore exceeded that of the cook stove (US\$86,400). Typically, from initial prototyping to full-program

⁷ <https://africabusinessapp.com/tackling-climate-change-to-save-agriculture-in-rwanda-cbab6c102b2f#12gx9dq10>

rollout, a new product will undergo three years of testing by the Innovations team; however, depending on the product or service type, this can vary from one to five plus years.

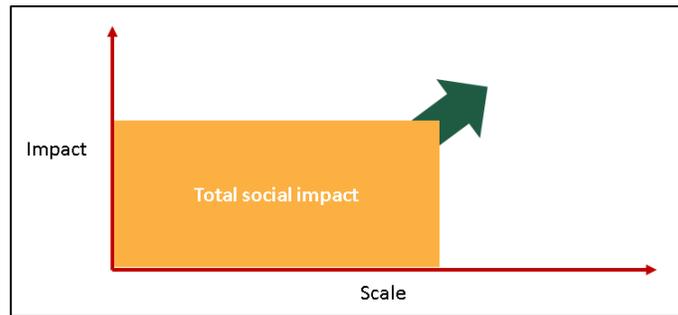


Figure 5: Impact box

OAF considers the impact box, set out in **Figure 5**, when comparing interventions within one program or when comparing total country programs to each other. For comparison between potential products or services, impact is typically defined as incremental income per adopter while scale refers to the number of adopters. When OAF thinks about this at the country level, it considers incremental income per client (impact) and number of clients (scale), which uses an implicit adoption rate for all clients or adopters of the program. For example, the Rwanda core program total impact in 2016 was US\$12M, computed by multiplying impact by scale (\$73 impact/farmer * 164,500 farmers). Rwanda scaled exponentially from the time Vernon joined with 364 clients to serve more than 160,000 farm families in 2016, and is OAF’s second largest operating country after Kenya. **Appendix 2** shows OAF client growth by country.

Financial Sustainability

OAF receives funding through grants and concessional loans, which helps cover costs not covered by farmer revenues (i.e., loan repayments). However, these types of donations are limited in nature, and OAF cannot assume that such donations will keep growing with the program in the coming years. As a double bottom-line social enterprise, OAF endeavours to become 100% financially sustainable by covering all operating costs with earned revenues. However, OAF’s programming currently operates at a net deficit (expenses exceed revenues) when looking at its operations before donations. A summary of the 2015 company financial statements is set out in **Appendix 3**.

Profit generating companies use the well-known efficiency metric return on investment to determine the profit they can generate per dollar invested into a project. Similarly, OAF aims to make efficient use of its limited financial resources to produce as much social good as possible. As such, OAF uses social return on investment (“SROI”) as a way to unify impact, scale, and sustainability into a single metric.

$$SROI = \frac{\text{Total Impact}}{\text{Net Deficit}}$$

For example, Rwanda’s core program SROI was 2.4 in 2016, driven by US\$9.2M total impact and a US\$3.9M net deficit (excess of costs over revenues). Put another way, farmers reap an impact of \$US2.4 for every US\$1 invested into the Rwanda core program.

SROI measures effectiveness at an organizational level, a country level, or even on a specific project level. This helps OAF and its supporters understand if its impact generation is getting more efficient over time.

SROI projections also help senior management evaluate which projects or new countries to invest in. Of course, it is more difficult to achieve a high SROI in a “young” country due to start-up costs and untapped economies of scale. Typically OAF would expect a new country to take 3-5 years to become 80% financially sustainable and reach a healthy SROI of 2 to 4 while serving 25,000 clients. **Appendix 4** demonstrates an OAF country’s “healthy path” to growth vis-à-vis SROI.

New Country Expansion

In the early years, OAF’s expansion to new countries was done on an ad hoc basis. For example, Vernon acted as a country scout in Burundi, where she started OAF’s operations in 2011. Vernon explains her philosophy at the time:

“Burundi was just the next logical place to scout – it’s incredibly similar to Rwanda, agriculturally speaking, so we didn’t need to change our program much. Land size, primary crops, climate, fertilizer usage, even the Kirundi language is almost the same as Kinyarwanda. This is in contrast to other neighboring countries like Tanzania and Uganda, which, despite being so close, actually have very different operational needs.”

Vernon first embarked on a solo-scouting mission, during which she collected data and met with government ministries and other potential partners. A few months later, Vernon left with two other staff members from Rwanda and started a Burundi pilot with 410 farmers and 4 FOs; this is larger than the typical pilot of 100-300 farmers. Despite the low measured impact of the pilot, everything else about the program worked: demand was high, Rwanda’s agricultural model worked, staff were dedicated and capable, and the government was supportive. The small pilot team quickly realized that the low impact resulted from low client adoption of OAF’s planting guidance, which has now improved slowly and steadily over time through constant prioritization by the Burundi field staff. Five years after the initial pilot, the Burundi program serves 48,000 farmers, and has a per farmer impact of US\$100.

In recent years, the evaluation methodology for expansion opportunities has been formalized with a New Country Expansion (“NCE”) team headed by Michael Hudson, New Countries Expansion Director and general partner. He explains the importance of this work:

“The choices we make with expansion have tremendous implications for the organization. By 2030, we estimate 50 percent of OAF’s total customers will come from countries that we currently have not scouted or piloted. Although the initial steps we take are very small, the consequence of bad strategy or execution today is the missed opportunity to serve millions of farmers down the road.”

The NCE team categorizes its work into five main phases as set out below.

Phase	Name	Objective
0	Scoping	Identify the country that offers the max impact opportunity.
I	Analysis	Generate impact hypotheses for various regions in the country. Prepare scout to carry out an effective scouting mission.
II	Scouting	Gather qualitative evidence, compile business plan. Deliver farmers survey and assess willingness to pay by using a randomized control trial (RCT).
III	Pilot	Prove that pilot is a viable country of operation by achieving a “Social Return on Investment” (discussed below) of at least 1 in its first three years
IV	Scale-up	Facilitate the graduation of pilots into new program countries

Figure 6: NCE phased approach

Scoping

In the past, OAF was looking for countries that fit exactly the core model – high rainfall, high population density, a yield gap between realized and possible harvests, low fertilizer adoption and documented hunger. Now, the NCE team uses a more nuanced approach, first considering rural poverty using the Global Multidimensional Poverty Index (“MPI”) to map overall need, considering the potential target market as the number of farmers who cultivate less than five hectares. In addition, the business and political operating environment are considered before advancing to the analysis phase. Hudson explains the recent shift in thinking:

“In the early years of expansion, we found that we were able to scan for markets that ‘fit’ our exiting model – markets where direct replication was possible. As we continue to push into new regions, we are finding that, although there are many opportunities for impact, we must think more creatively about our model. A common approach we take is to try to identify the primary limitation that farmers face, and then track it to a single service that OAF might be able to offer, rather than assuming that we would need to offer our entire core program.”

NCE defines markets by the “tiers” of farmers that OAF could serve: chronically hungry, calorie sufficient but food insecure, and pre-commercial, as explained in greater detail in **Appendix 5**. In order to serve more farmers and increase total impact, OAF is beginning to explore less familiar markets. **Appendix 6** provides key indicators, such as MPI and market size, by country that would be used by the NCE team during Phases 0 and 1.

In addition to balancing risk and impact, OAF faces a moral question of whether to expand somewhere that is likely to produce a higher impact or somewhere that has a greater overall need. For example, Nigeria presents a great opportunity for total impact and revenue generation; however, these farm families are not chronically food insecure, unlike the farm families in Burkina Faso. Burkina Faso’s market size and potential for total impact is lower than that of Nigeria, even though the farmers in Burkina Faso face a heightened need for OAF’s program offerings.

Analysis

At the analysis phase, NCE looks to identify impact hypotheses – or potential models for impact in the new region selected in the scoping phase. Impact hypotheses come from analysis of high-level data on the countries of interest. For example, NCE might compare improved maize seed adoption between Kenya (a benchmark OAF country) and Cameroon and discover that it is much lower in the latter. This could lead to an impact hypothesis that increased adoption of improved maize seed in Cameroon could have a positive impact. Similar to the impact model discussed above, the impact hypothesis is NCE’s method to quantify potential impact in an expansion area.

A few examples of impact hypotheses that NCE has already modelled, and is currently scouting:

- **Livestock in Assam, India.** Large livestock population and potential for nutritional impact through artificial insemination and vaccine services. Unknown but probably difficult operating environment.
- **High quality seeds & fertilizer in Orissa, India.** OAF already has expertise in cereals. Rice is the main crop in Orissa (73%). Rice yield/hectare is 1.6 tons, compared to 3.7 tons across the country. Fertilizer usage is 38% less in Orissa as compared to the country average. Improved seed adoption is at 11% as compared to 26% across the country. Good impact opportunity.

- **Extension services in Nigeria.** Provides an impactful service currently unavailable to many which can be implemented with a low-touch model (i.e. training of existing extension agents). Operating environment might be difficult due to security and political concerns. A low-touch model upfront would allow OAF to develop required contacts, workforce and familiarity with operating environment, which would pave the way to offering more products/services in the long-term.

Scouting

Once a new country has shown potential through its impact hypotheses, a country scout will conduct qualitative and quantitative research including focus groups, farmer interviews, and a comprehensive survey. These activities are geared towards writing multiple business plans, which include different products, services or delivery channels. The scout would likely favour one or two business plans as the most viable and ultimately propose the most feasible option(s) to advance to the pilot phase. The start-up costs associated with Phases 0, I and II vary depending on country, but can be assumed to be approximately US\$250,000 per country per year, though the time spent scouting is the main driver and can vary significantly from country to country.

During scouting, the work done in Phase 0 and Phase I can sometimes be disproved. For example, realistic security and safety information is difficult to obtain and often does not match its initial assessment. It is also difficult to strike the right balance between research, scouting and piloting. OAF believes that piloting is the best way to prove an impact hypothesis. However, if prioritized over scouting, it can make for resource and time inefficiency.

Pilot

OAF will then hire a pilot lead with responsibilities including:

- **Team:** Hire 3-8 initial trial staff, train staff on technical and interpersonal skills
- **Client recruiting:** Recruit initial 100-300 farm families, client surveys and focus groups
- **External networking:** Engage local government, purchase seed, fertilizer, and other farm inputs from local vendors, make contact with local horticultural support
- **Administration:** Legal registration, office and housing identification, initial equipment purchases
- **Systems:** Create finance and accounting processes and controls

The goal of the pilot is to validate the country as an impactful area of operation for OAF. M&E conducts its evaluation to compute the actual impact realized in the pilot. Typically, a pilot includes 100 farmers in its first year, 1,000 farmers in its second year, and up to 10,000 farmers in its third year. Typically, the deficit per farmer (or net investment after deducting farmer revenues) gets smaller in each successive year. For example, in Myanmar's second pilot year, it had a deficit per farmer of US\$110, driven by cost per farmer of US\$200 and revenue per farmer of US\$90. As such, Myanmar was only 45% financially sustainable in year two of its pilot.

Failure

Sometimes scouting and piloting do not succeed in implementing the core OAF program. For example, from 2011-2013, OAF scouted and piloted a program in the Upper East and Cape Coast regions of Ghana. Despite farmer yield increases of greater than 40% in these first years, there were insurmountable challenges which ultimately led the field team to cancel the Ghana pilot. OAF suffered reputational and credibility losses in the area, in addition to financial losses from closing down the Ghana pilot. Furthermore, OAF might be biased toward not trying something similar in the future, even if it is worth pursuing.

The biggest challenges in Ghana were:

- Cape Coast was too close to Accra, the capital, making it difficult to retain field staff
- Upper East region was drought-prone, and maize, OAF's main crop offering, was risky in this climate
- Product offering did not suit the crops that farmers were growing in those regions, as clients were not interested in grains and cereals
- Small market size presented a low potential for client growth
- OAF model served subsistence farmers, while pilot farmers were mostly part-time farmers
- Transport for field staff was unavailable or inefficient, making weekly farmer visits difficult

The NCE team will leverage lessons from these and other past failures when making recommendations for the next OAF expansion.

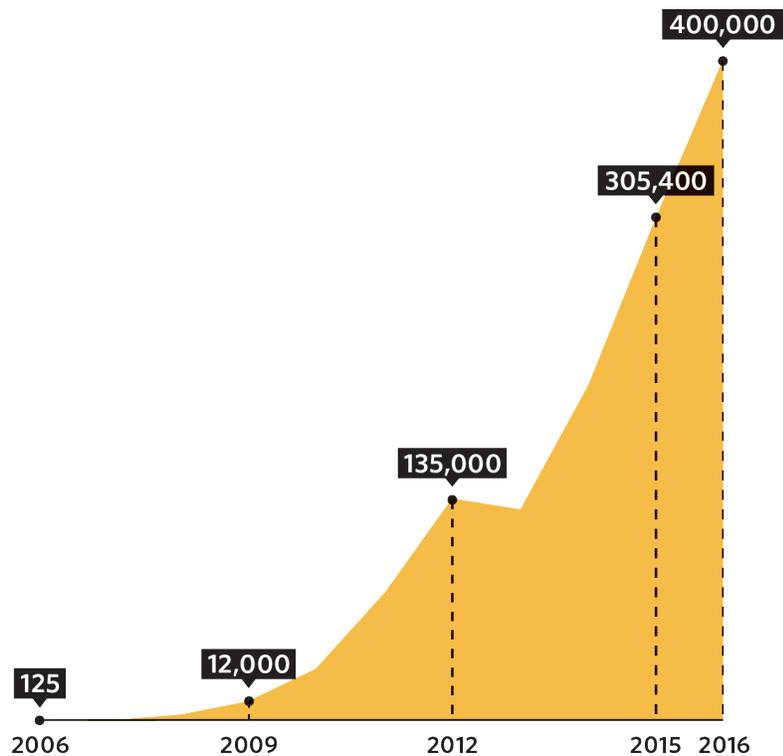
The Future

Youn, Vernon, and Hudson will gather in Rwanda for the next General Partners meeting in March. They have important, complex decisions to make – how can they invest to maximize scale, impact and financial sustainability to produce the maximum social good with the limited resources at their disposal? Their choices may affect thousands, if not millions, of the world's hardest working people.

Where should OAF expand to in the next 5 years and what products or services should they pursue there? What is the best program model for OAF as it expands? How will OAF as a whole achieve financial sustainability while maximizing impact and scale? Explain why your proposal is the best strategic option for OAF as it enters its second decade.

Appendices

Appendix 1. Total Client Growth in Core Program, 2006-2016



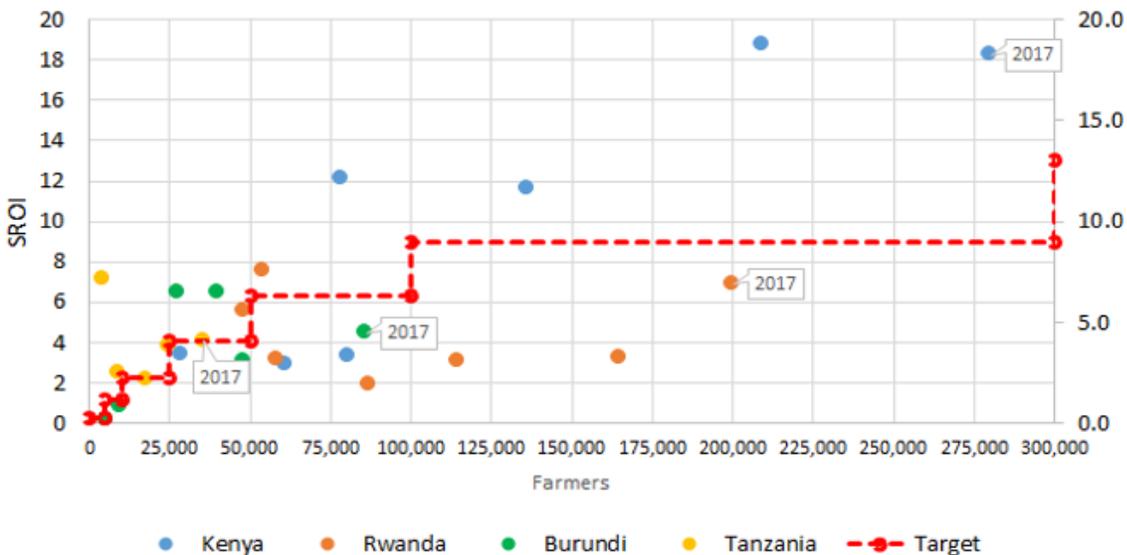
Appendix 2. Client Growth in Core Program by Country, 2008-2016

	Kenya	Rwanda	Burundi	Tanzania	Malawi	Uganda
2006	125	N/A	N/A	N/A	N/A	N/A
2007	500	100	N/A	N/A	N/A	N/A
2008	1,900	2,200	N/A	N/A	N/A	N/A
2009	5,500	6,500	N/A	N/A	N/A	N/A
2010	13,154	18,686	N/A	N/A	N/A	N/A
2011	28,000	48,711	1,400	N/A	N/A	N/A
2012	75,000	53,000	6,000	1,000	N/A	N/A
2013	60,500	54,000	9,600	4,300	72	N/A
2014	80,400	86,650	27,400	9,148	939	150
2015	136,500	111,300	40,200	17,400	2,700	1,050
2016	198,050	164,500	48,200	21,000	7,200	3,680

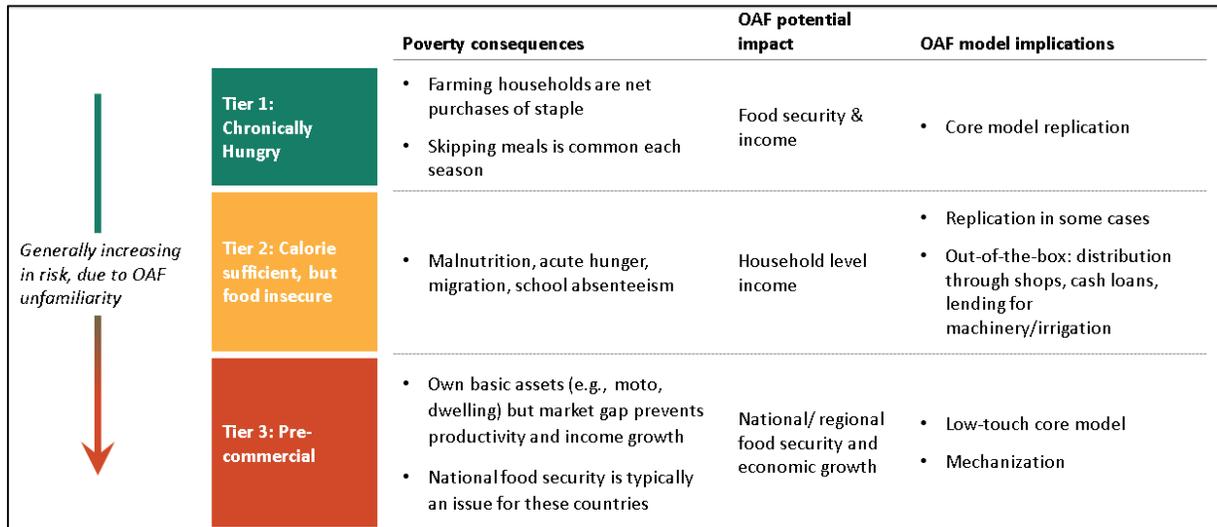
Appendix 3. Excerpts from 2015 Financial Statements

Core Program	USD '000s
Farmer revenue less allowance for doubtful accounts	22,589
Inputs (seed, fertilizer, solar lamps, etc.)	(15,546)
Associated costs (crop insurance, transport, storage, AFDA)	(2,009)
Field operations costs (primarily salaries)	(7,426)
Program support costs (overhead, marketing, management)	(5,807)
Core Program – net deficit	(8,199)
Alternative Programs	
Farm input sales to agro dealers	6,877
Farm input costs	(5,510)
Associated costs, staff support, etc.	(1,234)
Farm input sales – net income	133
Other partnership implementation	(2,453)
Alternative Programs – net deficit	(2,320)
Total Revenue: Core + Alternative	
	29,466
Total Expenses: Core + Alternative	
	(37,532)
% sustainability of revenue-generating field operations	78.5%
Research & development (incl. NCE: 2,642)	
	(9,847)
Shared services & other costs	
	(10,201)
Cash donations – grants	
	39,651
Total revenue	69,117
Total expenses	(60,033)
Net income	9,084

Appendix 4. The “Healthy Path” to OAF Country Growth – SROI vs. Farmers Served



Appendix 5. Market Tiers of Farmers



Appendix 6. Selected Key Information Considered in Scoping & Analysis Phases

Country	Rural Population (MM) ¹	Primary crops	Rural MPI ^{**2}	OAF Market Tier
Ethiopia	79.7	cereals, maize, sorghum	0.637	1
Burkina Faso	5.3	sorghum, millet, cowpea	0.621	1
Guinea	7.8	rice, maize, fonio	0.591	3
Mali	9.8	millet, sorghum, rice	0.530	1
D.R. of the Congo	41.0	cassava, maize, rice	0.486	1
Burundi*	9.5	beans, cassava, maize	0.481	1
Mozambique	18.4	maize, cassava, beans	0.48	1
Senegal	8.4	millet, groundnuts, sorghum	0.455	3
Cote d'Ivoire	9.8	yams, rice, cassava	0.429	3
Nigeria	87.7	sorghum, maize, cassava	0.416	3
Uganda*	33.7	maize, beans, sweet potatoes	0.408	1
Cameroon	10.7	maize, sorghum, groundnuts	0.393	3
Benin	6.1	maize, seed cotton, cassava	0.386	3
Tanzania*	35.8	maize, cassava, groundnuts	0.385	1
Zambia	9.2	maize, seed cotton, cassava	0.380	2
India	862.5	rice, wheat, millet	0.357	2/3
Haiti	4.4	cassava, plantains, bananas	0.341	1
Malawi*	14.5	maize, beans, seed cotton	0.293	1
Rwanda*	8.8	beans, maize, cassava	0.289	1
Kenya*	34.8	maize, beans, sorghum	0.245	1
Nepal	23.1	rice, wheat, millet	0.147	2
Myanmar	35.7	rice, maize, pulses	n/a	2
Angola	12.8	cassava, seed cotton, beans	n/a	1

*Current OAF core country

**Higher means more poor

¹Geohive. "Urban/rural division of countries for the years 2015 and 2025," http://www.geohive.com/earth/pop_urban.aspx

²Alkire, S. and Robles, G. (2016). "Multidimensional Poverty Index Winter 2016: Brief methodological note and results." Oxford Poverty and Human Development Initiative, University of Oxford, OPHI Briefing 44.