







Consolata Sirengo, Kenya

Summary of Results

Total program: 2015 was a year of continued strong impact for our programs. The table below shows the total impact per farmer of our core agricultural program as well as “add-on products” such as solar lights and trees. Across all of our country programs, our farmers made an additional **\$112** in agricultural profit compared to similarly situated farmers in their same agro-ecological zones. They also made, on average, another **\$25** in profit from our add-on products.¹ Together, this represents an additional **\$137** in profit and **55%** in increased profit (from those activities) relative to non-One Acre Fund farmers.





	Ag Impact \$/Farmer	Add-ons \$/Farmer	TOTAL Impact \$/Farmer	Total % inc. in income
Kenya 	\$165.7	\$ 45.16	\$210.9	48%
Rwanda 	\$42.8	\$11.31	\$54.1	53%
Burundi 	\$95.1	\$3.65	\$98.8	111%
Tanzania 	\$72.3	\$13.5	\$86.7	14%
WHOLE PROGRAM	\$111.84	\$25.36	\$137.2	55%

Agriculture program: Looking at our agricultural program, we see that the extra **\$112** translates into a **35%** increase in agricultural profit for a typical One Acre Fund farmer across all countries. This “impact per farmer” metric looks at *all* land our farmers plant, including the land they do not use One Acre Fund inputs on, and compares this to a similar non-program farmer, (selected in a way that minimizes selection bias).

Return on Investment (ROI) puts us in the farmer’s shoes. On average, One Acre Fund farmers made a **300%** return on their investment in us. This means for every incremental \$1 they spent as a result of being in our program (compared to control) they earned an additional \$3.00 in profit (even after netting out their program payments). This varies widely by country, however, as some countries (*e.g.*, Burundi) have relatively less expensive programs and, therefore, a higher relative return.

¹ Add-on impact reflects the *average* farmer in our program. If an add-on product adds an estimated \$50 of impact per adopter but only 20% of farmers adopt the product, then the average impact per farmer = \$50 * 20% = \$10.

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	Ag Impact \$/Farmer	% Increase per Farmer	ROI per Farmer
Kenya 	\$166	43%	303%
Rwanda 	\$43	20%	249%
Burundi 	\$95	50%	605%
Tanzania 	\$73	10%	70%
WHOLE PROGRAM	\$111.84	35%	300%

Methodology in Brief

To generate our impact data, we survey thousands of One Acre Fund farmers and compare that data with similarly situated comparison farmers who live in the same area and thus face similar agro-ecological conditions. To minimize differences between program and comparison farmers, we get recommendations from One Acre Fund farmers on their friends and neighbors who are “interested” in joining our program, where possible. In 2015, we also matched comparison farmers and One Acre Fund on characteristics such as gender, wealth, household size and education when we had large enough samples. This allowed us to obtain the strongest comparison possible across as wide a geographic sample as possible.

We conduct two surveys to inform our impact estimate. In the first survey, we collect comprehensive farming input data on everything from fertilizer and seed cost to labor days expended. We also obtain an estimate of a farmer’s land size dedicated to One Acre Fund inputs and the land size overall. In the second survey, we randomly select two small plots of land and harvest and weigh each crop. For most crops we take a “wet” weight of freshly harvested crops and then “dry” weight (after maize is shucked and dried, for example), which is the weight most relevant to both selling and consuming the grain. In 2015, we took over 16,000 harvest weights. We then monetize this harvest based on prevailing local selling prices in order to estimate farm revenue. From these two rounds of data collection, we have all the data we need to calculate total farmer profit (revenue – costs) of our farmers and compare it to similar farmers.

Add-on Impact. To understand the impact of our add-on products, such as solar lights and trees, we collect data from One Acre Fund farmers and neighbors to estimate the change in impact. For solar lights, for example, we track monthly spending on kerosene, flashlight batteries, cell phone charging and other related expenditures to understand the amount of savings a solar lamp provides. As much as possible, we randomize the opportunity to adopt a new product so that we can most rigorously assess the impact. (See [this paper on randomized controlled trials](#) for more information). For long-term products, like trees, in which the pay-off is years in the future, we discount future benefits. We then

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divide the net present benefit over the lifeAme of the product to smooth out impact in a way in which bej er approximates a farmers' experience of impact.

Kenya Impact 2015

Country context: The Kenya program, launched in 2006, is One Acre Fund's oldest program. We primarily support farmers in growing maize and beans over one long season, with credit for both improved seed and fertilizer and frequent training. We offer a range of additional add-on products such as solar lights, vegetable seeds, improved crop storage bags, cook stoves and sanitary pads. Kenya has a robust innovation laboratory with a large pipeline of new agricultural and other products, such as poultry, new organic soil major interventions and maize harvest buy-backs. In 2015, we served 136,000 farmers over the "long rains" growing seasons.



Robai Wanyonyi, Kenya

Impact results and trends: We added an additional **\$166** in agricultural profit on average over the season we worked with farmers in Kenya. Add-on products (e.g., trees, kale, and solar lamps) add another **\$45** to our average impact. Given high energy expenditures, solar lights are a terrific investment in Kenya and we had a very high adoption rate of nearly half of all our farmers buying a solar lamp. All together this represents a **48%** improvement in profits relative to a comparison group.

Between 2014 and 2015, dollar impact increased by **\$41** per farmer. This was attributable to several factors. We saw a much greater maize impact in 2015. In 2014 One Acre Fund farmers grew 20% more maize than comparison farmers, whereas in 2015 One Acre Fund farmers grew 40% more maize. We also altered our training to include more detailed intercropping (growing maize and beans together) instructions, helping boost yields. Overall yields were lower in the regions we serve relative to 2014, but it might be that proper planning techniques and use of inputs are even more impactful in a tougher agronomic environment. Finally, we continued to see strong adoption of high return add-on products, like solar lights and trees.

Rwanda Impact 2015

Country context: The Rwanda program, launched in 2007, is One Acre Fund's second oldest program. We serve farmers across a broad area of the country providing fertilizer on credit and frequent trainings

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over 2 growing seasons. Farmers most commonly grow maize, climbing beans, bush beans, potatoes, and rice. We offer a range of additional add-on products such as solar lights, cookstoves, and trees. In 2015 we served over 106,000 households. In the first season of the year (“Season A”), we delivered inputs to 72,600 farmers and added 21,500 new farmers in the second season of the year (“Season B”). We also served 11,500 clients who chose to purchase only a solar light.

In addition to our core program, we support Rwandan farmers nationwide through government partnerships that help bring agricultural extension training to every village in Rwanda and to bring fertilizer to a large network of agro-dealer seller

Impact results and trends: We added an additional **\$43** in agricultural profit on average over the two growing seasons from our core program. Add-on products such as trees and solar lights add another **\$11** to our average impact. Impact from these products is not as high as in Kenya given the relatively lower energy costs (so smaller energy savings from solar lights), and the fact that fewer trees are distributed. Altogether, even this modest amount represents a **53%** improvement in profits relative to a comparison group.



Edward Rimenyande, Rwanda

It is increasingly difficult for us to achieve high dollar impacts for One Acre Fund farmers relative to comparison farmers in Rwanda because nonparticipating farmers have improved access to training through farmer promoters and inputs through agro-dealers. While this represents a measurement challenge (we have a role in the programs which reach comparison farmers), we view this overall as great news for farmers nationwide.

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Burundi Impact 2015

Country context: Burundi, launched in 2011, is One Acre Fund’s third country program. We support farmers in growing maize, beans and potatoes over 2 seasons with credit for fertilizer and training. The government subsidizes fertilizer costs, so many farmers use fertilizer for core crops, coffee and tea. Our primary programmatic advantage is therefore our intensive training, which helps farmers gain better yields without spending much more on inputs than their neighbors (sometimes they even spend less due to efficient application). We also offer solar lights,



Alain Bangirinama and Dalia Ndiruvugyo, Burundi

2015 Annual Impact: Country M&E Report

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trees, and hybrid maize seed. In 2015, we served 27,000 clients in the first season of the year (“Season A”) and 28,000 clients in the second season (“Season B”)

Impact results and trends: We added **\$95** in agricultural profit on average over the two seasons. This was a large improvement relative to 2014 with large impacts for maize and potatoes relative to comparison farmers. We suspect that One Acre Fund farmers were better able to cope with the irregular rains than their neighbors. Add-on products (trees and solar lamps) add another **\$4** per farmer on average. Impacts from add-on products are relatively small as Burundians spend less on energy than other countries, so it takes them longer to realize the returns from investing in a solar lamp, and adoption of these products is relatively low. Still, together this represents a **111%** improvement in profits relative to a comparison group. We tend to see high **percent** improvements in Burundi because the base profit for farmers there is so modest, so each dollar improvement represents a significant improvement in a farmer’s income.

Tanzania Impact 2015

Country context: Tanzania, launched in 2013, was One Acre Fund’s newest program in 2015. We support farmers in growing maize over one long season, with credit for both improved seed and fertilizer and frequent training. Average farm size in Tanzania is greater than in our other countries and oxen use is more common, which forces us to think more creatively about our planning training. In 2015, we served 9,100 clients, doubling our size from the year before.



Monica Ngaga, Tanzania

Impact results and trends: We added another **\$73** in agricultural profit on average over the season we worked with farmers in Tanzania. Add-on products, such as solar lights add another **\$14** to our average impact. Solar lights have a relatively high per adopter impact because energy costs, and therefore savings, are higher. We quadrupled the number of solar light adopters in 2015 with one in three enrolled farmers purchasing a solar light. Altogether this represents a **14%** improvement in profits relative to a comparison group. The **percent** increase is relatively lower than in our other countries, as our Tanzanian farmers farm much more land, so the proportion of One Acre Fund program land on their whole farm is smaller.