

NURU ETHIOPIA 2019 IMPACT REPORT



RAY MARSHALL CENTER FOR THE STUDY OF HUMAN RESOURCES
SEPTEMBER 2020

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EXECUTIVE SUMMARY

In 2019, Nuru Ethiopia offered interventions in rural livelihoods, healthcare, and cooperative programming with over 6,000 participant households in Gamo and Gofa Zones of SNNPR, Ethiopia. The intervention activities achieved the following outcomes:

- Nuru Ethiopia farmers increased crop yields by 65 percent compared to their 2016 baseline and a comparison group. This achievement is more than double the targeted yield increase benchmark of 32 percent.
- Nuru Ethiopia farmers increased income from row crop activities by 97 percent compared to their 2016 baseline and a comparison group. NE's target was a 30 percent income increase.
- The NE-supported cooperatives averaged an average SCOPEinsight score of 3.1 out of 5 demonstrating competitiveness at national, regional, and global levels for agricultural farmer organization businesses.
- 67 percent of NE-supported cooperatives achieved net profit from their business operations in 2019, which was only slightly below a target of 70 percent.
- The COVID-19 global pandemic in 2020 disrupted a portion of the planned data collection for this analysis. In particular, progress on reducing under-five child mortality was not assessed in 2019. The latest report available is 2018 progress on this indicator, where Nuru Ethiopia achieved a 28% reduction in under-five child mortality.

Nuru interventions have led to higher yields and agricultural income for Nuru farmers while building a foundation of sustainable cooperative businesses in partnership with farmer members. The productive 2019 season will help Nuru farmers be more secure and stable during challenging times in 2020 when farmers are dealing with negative impacts of COVID-19, locust outbreaks, and the National State of Emergency Declaration. Lastly, the firm foundation of farmer organization impact will ensure these meaningful choices are available to farmers in the future through member-owned businesses. These viable enterprises represent the community members and give voice to their social development needs as they shift over the long-term.

INTRODUCTION

In 2013, Nuru Ethiopia (NE) set out to provide meaningful choices that empower communities to lift themselves out of poverty in a sustainable way. The NE development model seeks to address four key areas of need: 1) food insecurity, 2) inability to cope with economic shocks, and 3) unnecessary disease and death. In 2016, the Agriculture and Financial Inclusion programs were combined to make the Rural Livelihoods (RL) Program.

The NE RL Program aims to build the capacities, assets, and income of farmer households to achieve diversified livelihoods and to cope with shocks. To accomplish this aim, NE supports activities that impact crop yield, livestock, food security, and household income, as well as increasing access to and use of formal financial services and improving financial literacy. Agricultural Extension and Rural Livelihoods (AERL) field officers and Cooperative field officers provide technical training, extension services, and cooperative support structures through formal partnerships with the Government of Ethiopia's primary cooperative institutions. AERL field officers historically focus only on agricultural training and extension with farmers for maize and haricot bean production, which is the focus of this 2019 impact report. In 2018, the AERL team began piloting a cash crop pilot with mung bean and groundnuts due to their significantly higher market prices and agroecological suitability. In future impact reports, yield and income findings from these higher-value crops will be integrated into the methodology and findings.¹ The cooperative field officers are responsible for coaching and training primary cooperative management teams and leading financial inclusion activities with women cooperative members.

To track program impact, the NE Monitoring and Evaluation (M&E) team collects yearly evaluation data to support all data-driven decision making. In 2016, Nuru International partnered with the Ray Marshall Center (RMC), an applied research and policy institute at The University of Texas at Austin, to better understand program outcomes and impacts. This report documents the analysis of the agricultural yield and income follow-up data collected in 2020 for the impact evaluation of Nuru International's programming in Ethiopia.

¹ M&E findings for the mung bean and groundnut 2019 pilot and 2020 program scaling can be provided by Nuru International upon request.

METHODOLOGY

In 2016, NE conducted a baseline study of its first cohort of farmer households (intervention group) and non-intervention households (comparison group) across seven kebeles within Kucha Woreda, Gamo Zone, Southern Nations, Nationalities, and Peoples' Region (SNNPR). The study design intends to capture attributable impact by comparing the results of the intervention to a non-intervention comparison. Each year, the NE M&E team hires and trains a team of temporary enumerators to collect impact data. RMC uses a difference-in-differences (DID) approach to compare the impact data for the intervention and comparison groups at baseline and follow-up and to estimate program impact.

Crop Equivalent Yield

For purposes of comparability, Nuru employs a single composite indicator of crop performance: Crop Equivalent Yield (CEY). The CEY calculation converts the performance of select crops into one standard unit of maize kilograms per acre. This is done using the farm gate prices per kilogram of haricot beans and maize. Finally, the NE M&E team transforms all crops into maize via the price ratios of haricot beans versus maize. **One way to interpret this calculation is to ask: If farmers only grew maize this season, how much maize would they have produced?**

Since crop yield is measured as production amount per land area, measuring the land size is a critical part of the yield calculation. Land size is measured using the pacing field methodology for the non-intervention comparison group. For the intervention group, loan package details are used to calculate land sizes based on seed provided and seed spacing. Since Nuru farmers are trained on and apply a standard planting spacing, calculating the cropped area based on the planting rate of seeds per area was determined to be an equivalently precise method to pacing.

Agricultural Profits

Revenue, costs, and profits are calculated based on the prevailing market prices for maize and haricot bean seed, fertilizer, and other production inputs in Gamo and Gofa Zones of SNNPR. Revenue is calculated by multiplying the average crop equivalent yield by the average farm gate price for maize. The intervention and comparison groups have particular methods to establish the costs they incurred in farming their particular plots. The cost for Nuru farmers is the loan price for the improved farm inputs (seed and fertilizer) provided by Nuru cooperatives. The cost for the comparison group, on the other hand, is calculated using the cost of farm inputs from local suppliers and takes into account farm input

adoption rates gathered from survey responses. With the support of Nuru extension services, Nuru farmers deploy all improved inputs, while not all comparison farmers use improved seed and fertilizer. Under ideal growing conditions, increased investment in improved inputs should lead to increased productivity. Finally, net profit or loss is calculated by subtracting the costs from revenue.

Farmer Organization Impact: Sustainability and Profitability

The NE Cooperative and M&E teams partner with [SCOPEinsight](#) to generate internationally benchmarked assessments that measure the operational and professional efficiency of NE-supported farmer organization cooperative businesses. SCOPEinsight basic assessments measure operational and professional efficiency against 8 dimensions and over 80 indicators. These dimensions and indicators are scored on a scale of 0 to 5 points with a final aggregate score provided for international benchmarking. To assess profitability NE relies upon the businesses' financial statements and collaborates with local third-party accounting firms in Arba Minch city that specialize in cooperative accounting in Ethiopia. The final profitability metric represents the percentage of cooperatives that achieved net profits during the most recent fiscal year of operation on a July to July calendar.

Under-Five Child Mortality

The outbreak in COVID-19 in 2020 resulted in Ethiopia declaring a State of Emergency proclamation. This curtailed a portion of data collection on healthcare-related indicators. This impact assessment would normally have included a calculation of healthcare program impact on reducing under-five child mortality. This year, the calculation of this metric was not possible due to difficulty in the collection of the associated data. It is observed that in 2018 Nuru Ethiopia achieved a 28% reduction in under-five mortality due to healthy behavior adoption rates. The full report documenting this impact is available at the following web link: <https://raymarshallcenter.org/files/2019/08/2018-NE-Impact-Report.pdf>

RESULTS

MONITORING DATA

In addition to yearly impact evaluations focused on agricultural yield and profits, the NE M&E, RL, and Healthcare (HC) teams collect monitoring data throughout the year. While evaluations focus on a sample of farmers, program teams monitor the entire Nuru farmer population. The monitoring data provides NE country teams with quarterly data for real-time data-driven decision making. Key takeaways:

- Rural Livelihoods achieved or surpassed targets in the following areas: Number of Nuru farmers, number of Nuru savers, number of livelihood diversification loans issued this year.
- Rural Livelihoods fell slightly short of the target for on-time loan repayment.
- Healthcare team achieved or exceeded all monitoring targets.
 - NE aims to strengthen existing government systems by directly training government community health workers. These trainings build sustainability, readiness to hand over, and behavior change and quality of care in the local system.

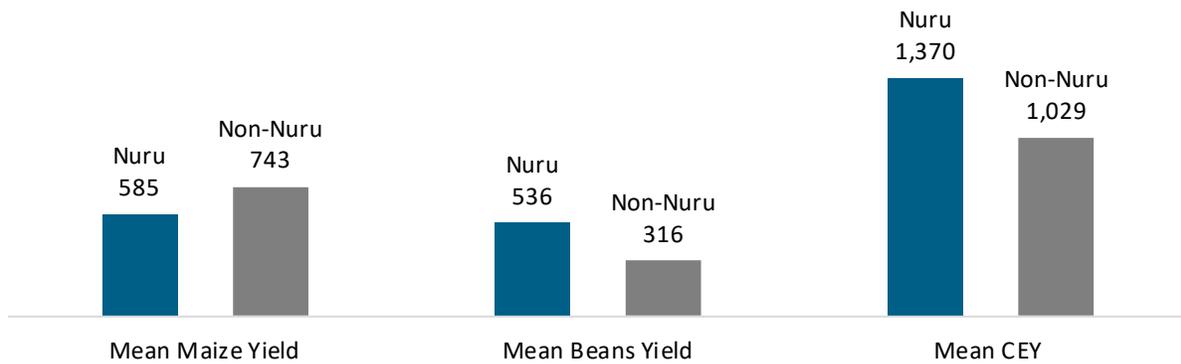
Table 1. Monitoring data

Program	Indicator	Performance	Target	Actual
Rural Livelihoods	Number of farmers		6,000	6,004
	Number of Savers		3,000	2,994
	Number of Livelihood Diversification loans issued		1,000	1,196
	Livelihood Diversification loan repayment rate (on-time)		97%	72%
Healthcare	Number women participating in cooperative care groups		3,729	2,970
	Percent of women who are on track to attend at least 4 antenatal care visits per quarter		75%	100%
	Percent of deliveries in a clinic per quarter		65%	97%
	Number of community health workers trained		64	64

AGRICULTURAL YIELD

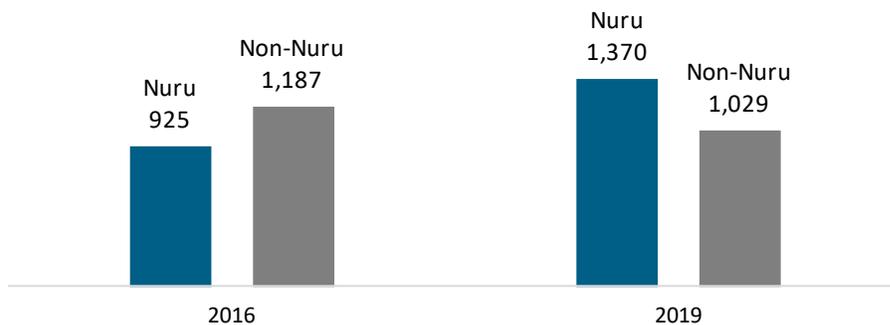
In 2019, Nuru Ethiopia farmers had an average CEY of 1,370 kgs/acre compared to an average CEY of 1,029 kgs/acre for the comparison group. While Nuru farmers had a lower average yield for maize than comparison farmers (585 kgs/acre vs. 743 kgs/acre), their average yield for haricot beans was much higher (536 kgs/acre vs. 316 kgs/acre).

Figure 1. 2019 yields (kgs/acre) by cohort



At baseline in 2016, Nuru farmers had an average CEY that was 22 percent lower than the comparison group (925 kgs/acre vs. 1,187 kgs per acre). Over the past four years, Nuru farmers have experienced a 71 percent increase in their yield, compared to a 13 percent decrease in yield for the comparison group. At the most recent follow-up, Nuru farmers had an average CEY that was 33 percent higher than the comparison group (1,370 kgs/acre vs. 1,029 kgs per acre). Difference-in-difference methods find that in 2019, Nuru Ethiopia farmers increased crop yields by 65 percent compared to their 2016 baseline and a comparison group. NE's target was a 32 percent yield increase.

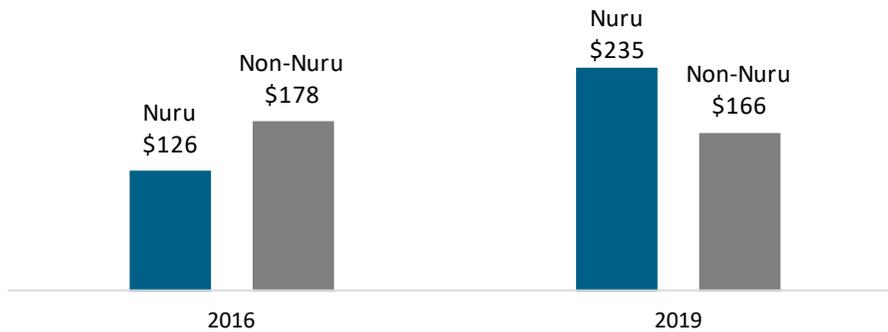
Figure 2. Trends in yields over time



AGRICULTURAL INCOME

At baseline in 2016, Nuru farmers had an average net income that was 42 percent lower than the comparison group (\$126 vs. \$178). Over the past four years, Nuru farmers have experienced a 87 percent increase in their net income, compared to a 7 percent decrease in net income for the comparison group. As a result, at the most recent follow-up, Nuru farmers had an average net income that was 29 percent higher than the comparison group (\$235 vs. \$166). Difference-in-difference methods find that in 2019, Nuru farmers increased income from row crop activities by 97 percent compared to their 2016 baseline and a comparison group.² NE's target was a 30 percent income increase.

Figure 3. Trends in agricultural income over time



FARMER ORGANIZATION IMPACT

In 2019, NE conducted SCOPEinsight basic and financial assessments for 9 farmer organization cooperative businesses. The NE-supported cooperatives averaged a score of 3.1 out of 5, which was highly competitive compared to a global average of 3.3 in the SCOPEinsight database for agricultural farmer organization businesses. Moreover, 67 percent of NE-supported cooperatives achieved net profit from their business operations in 2019, which was only slightly below a target of 70 percent. NE will continue to conduct SCOPEinsight basic and financial assessments with the 31 cooperatives they support in 2020 and 2021.

² The formula used for % difference-in-difference was: $[(\text{treatment mean at follow-up} - \text{treatment mean at baseline}) - (\text{comparison mean at follow-up} - \text{comparison mean at baseline})] / (\text{treatment mean at baseline})$.

DISCUSSION

Nuru interventions have led to higher yields and agricultural income for Nuru farmers while building a foundation of sustainable cooperative businesses in partnership with farmer members. The productive 2019 season will help Nuru farmers be more secure and stable during challenging times in 2020 when farmers are dealing with negative impacts of COVID-19, locust outbreaks, and the National State of Emergency Declaration. Lastly, the firm foundation of farmer organization impact will ensure these meaningful choices are available to farmers in the future through member-owned businesses. These viable enterprises represent the community members and give voice to their social development needs as they shift over the long-term.