

NURU ETHIOPIA

2020 IMPACT REPORT



RAY MARSHALL CENTER FOR THE STUDY OF HUMAN RESOURCES

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EXECUTIVE SUMMARY

In 2020, Nuru Ethiopia offered interventions in cooperative, rural livelihoods and healthcare programming with 7,447 participant households in Gamo and Gofa Zones of Southern Nations, Nationalities, and Peoples' Region of Ethiopia. The intervention activities achieved the following outcomes:

- Nuru Ethiopia-supported farmer organization businesses achieved an average SCOPEinsight score of 4 out of 5 demonstrating competitiveness at national, regional, and global levels for agricultural farmer organization businesses.
- 80 percent of Nuru Ethiopia-supported farmer organizations achieved net profit from their business operations in 2020, exceeding the target of 70 percent.
- By participating in the diversified livelihood interventions, Nuru farmers were able to generate \$233 USD of extra income compared to the comparison group farmers producing maize only.
- Nuru Ethiopia farmers increased crop yields by 77 percent compared to their 2016 baseline and a comparison group. This achievement is more than double the targeted yield increase benchmark of 32 percent.
- The Nuru Ethiopia Healthcare Program achieved a 21 percent reduction in under-five mortality due to the healthy behavior adoption rates.

Nuru interventions have led to higher agricultural incomes for Nuru farmer households and reductions in under-five mortality while building a foundation of sustainable cooperative businesses. In 2020, communities and farmers in southern Ethiopia experienced the onset of the COVID-19 pandemic, a national state of emergency, continued desert locust swarms, and the outbreak of violent conflict in Ethiopia's northern Tigray region. Moreover, the COVID-19 pandemic and locust outbreaks corresponded with the beginning of the short rain production season in March and April of 2020, which punctuated the negative impact on planting timeliness and subsequently on crop yields for maize. However, the firm foundation of livelihood diversification, healthy behaviors, and farmer organization impacts will ensure that meaningful choices are available to farmers in the future through their member-owned businesses. Rigorous methods including comparison groups and benchmarking-based analysis demonstrated that Nuru Ethiopia achieved attributable impact in 2020 despite the multiple challenges present in the year.

FARMER ORGANIZATIONS

INTRODUCTION

Farmer organization businesses are a cornerstone of sustainability in the Nuru Model. In 2020, NE worked with 32 farmer organizations represented by 31 primary cooperatives and one cooperative union. NE provided capacity development, seed capital, commercialization assistance, and other critical business support services to these farmer organization businesses. To successfully exit, replicate and scale to new communities and zones in Ethiopia, Nuru must evaluate the capacity of emerging farmer organizations. Nuru must determine whether it can sustain the meaningful choices it brings its farmer members. This first impact report section covers farmer organization performance. Subsequent report sections speak to the impact of NE's work in Rural Livelihoods and Healthcare.

METHODOLOGY

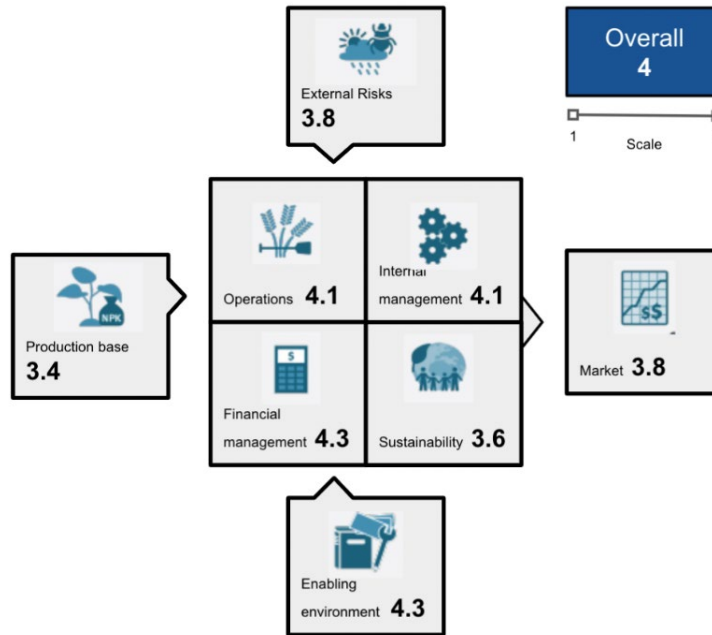
The NE Cooperative and M&E teams partner with SCOPEinsight to generate internationally benchmarked assessments that measure the operational and professional efficiency of NE-supported farmer organization businesses. SCOPEinsight basic assessments measure operational and professional efficiency against eight dimensions (Figure 1) and over 90 indicators. These dimensions and indicators are scored on a scale of 1 to 5 points with a final aggregate score provided for international benchmarking. The consistency and comparability of SCOPEinsight assessments help to limit bias and allow NE to develop a shared business language across different contexts. The SCOPEinsight assessment is linked to a database with over 4,000 comparable farmer organizations operating across over 40 countries.

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. The final profitability metric represents the percentage of farmer organizations that achieved net profits during the most recent fiscal year of operation on a July to June calendar.

RESULTS AND DISCUSSION

NE-supported farmer organizations averaged a SCOPEinsight score of 4 out of 5, which was above the benchmark for agricultural businesses, which averaged 3.3. Moreover, **80 percent of NE-supported farmer organizations achieved net profit from their business operations in 2020**, which exceeded the target of 70 percent of businesses profitable in a given year.

Figure 1. SCOPEinsight average scoring matrix 2020



CONCLUSION AND RECOMMENDATIONS

In 2020, NE-supported farmer organizations met and exceeded their benchmark levels of performance for business competencies and profitability. This performance is remarkable given the context of the COVID-19 pandemic, which shuttered businesses across Ethiopia. A key factor influencing the viability of rural agricultural businesses during a challenging year like 2020 was adapting business operations to enable the continued provision of services. Farmer organizations continued providing farm inputs on loans, marketing services, and even training and extension provision, albeit through modified and socially distanced methods. Large convenings and general assemblies were suspended and replaced by smaller meetings and dissemination of key messages via mass communication.

Key challenges remain for farmer organization performance and resilience to future shocks. Markets, regionally, nationally, and globally, continue to experience abnormal fluctuations and disruptions due to the COVID-19 pandemic. Effective and democratic cooperative governance will continue to test the limits of social distancing and, over the longer term, will require strategies for reaching and interacting with the broad base of membership. These and other challenges remain as NE strives to sustain and expand gains in farmer organization performance and profitability.

RURAL LIVELIHOODS

INTRODUCTION

The Nuru Ethiopia Rural Livelihoods (RL) Program aims to build the capacities, assets, and income of farmer households (farmer organization members) 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. Agricultural extension, rural livelihoods 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 support institutions. Livelihoods field officers focus on agricultural training and extension with farmers. The cooperative field officers are responsible for coaching and training primary cooperative management teams and leading financial inclusion activities with women cooperative members.

The Nuru Monitoring and Evaluation (M&E) team supports this work by conducting an annual assessment (Table 1) towards the evaluation question: What is the impact of the Nuru Ethiopia RL Program?

Table 1. Rural Livelihoods survey timeline and sample size

Study Group	Sample Size: Agriculture	Sample Size: Financial inclusion	Sample Size: Livelihood diversification	# of enumerators	Data collection dates
Nuru	414	696	696	19	8-19 March 2021
Comparison	512	178	178	19	8-19 March 2021

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, in the Southern Nations, Nationalities, and Peoples’ Region (SNNPR). The study design captures the attributable impact by comparing the results of the intervention and comparison groups. 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 to estimate program impact.

Crop Equivalent Yield

Nuru farmers have access to mixed seed packages for their crop loan packages, including maize and haricot beans. For purposes of comparability across Nuru farmers and against the baseline, 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, M&E 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 to apply standardized plant spacing, calculating the cropped area based on the planting rate of seeds per area was determined to be an equivalently precise method to pacing.

Crop Equivalent Yield Income

For cropping activities, revenue is calculated by multiplying the CEY by the average farm gate price. The costs are calculated using the cost of farm inputs from local suppliers that include improved seeds and fertilizers optimized for maize production. The net profit or loss is calculated by subtracting the costs from revenue.

Livelihood Diversification Income

Livelihood diversification programming facilitates training and loans for the cultivation of fodder and care of small ruminants (goats or sheep) intended to be resold at market. Impact for livelihood diversification activities is assessed based on income, which accounts for costs including the loan for the purchase of two goats or sheep along with other animal care-related expenses (medications and feed), and the revenue generated from the sale of the same two small ruminants. These data points are used to calculate the profit or extra income generated from the program activity.

Cash Crops

NE delivers training, extension, and loan packages for the production of mung beans and groundnuts as cash crops. The performance of this activity is assessed with an overall combined

household income model that accounts for costs of production and estimates revenue from measures of productivity and sales prices for mung bean and groundnuts.

Combined Household Livelihood Income

NE programming offers diversified and complementary income generating activities, including row crops like maize and beans, cash crops like mung bean and groundnut, and small ruminant production. To estimate the impact on household income, there is an accounting of revenue, costs, and profits based on program and market data from Gamo and Gofa Zones of SNNPR.

MONITORING

In addition to yearly impact evaluations focused on agricultural yield and profits, the NE M&E team collects 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 the NE team with quarterly information for real-time data-driven decision-making. In 2020, the monitoring data show that the NE RL Program hit its target enrollment in farmers, as well as women household members participating in the livelihood diversification intervention.

Table 2. Rural Livelihoods Program monitoring data

Indicator	Performance	Target	Actual
Number of farmers		7,000	7,447
Number of Livelihood Diversification loans issued		1,750	1,713

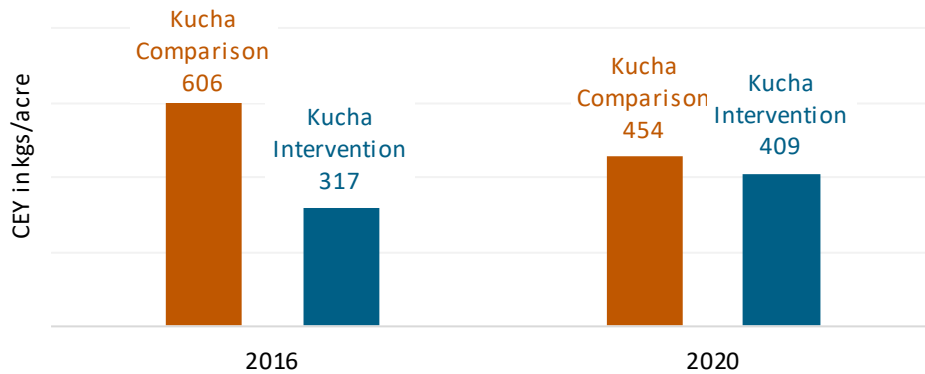
RESULTS AND DISCUSSION

Agricultural Yield

At baseline in 2016, Nuru farmers had an average CEY that was half that of the comparison group (317 kgs/acre vs. 606 kgs per acre). Over the past five years, Nuru farmers have experienced a 29 percent increase in their yield, compared to a 25 percent decrease in yield for the comparison group. Difference-in-difference methods find that in 2020, Nuru Ethiopia farmers increased crop yields by 77

percent (i.e. an impact of 244 kgs/acre) compared to their 2016 baseline and a comparison group.¹ NE's target was a 32 percent yield increase.

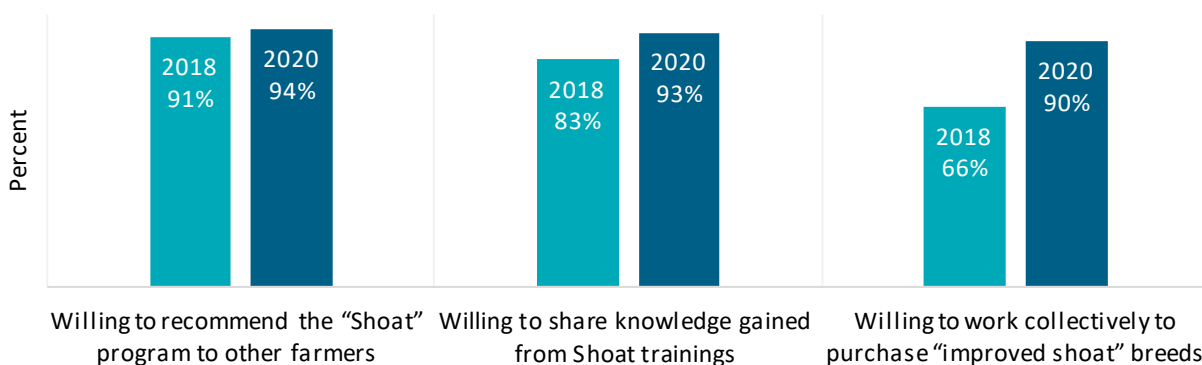
Figure 2. Trends in yields over time



Livelihood Diversification

The NE Livelihood Diversification (LD) loan product is integrated with best management practice training and extension for goat and sheep (shoat) fattening. Nuru women savers qualify for a loan equivalent to two or more goats or sheep, and may participate in three rounds of fattening and sale if they repay their previous loans 100 percent and meet savings requirements. The goal of these activities is to increase the resilience and economic empowerment of women in Nuru farmer households that are over-dependent on rain-fed crops like maize, beans, and teff for their household income.

Figure 3. Customer satisfaction among Nuru farmers, 2018-2020



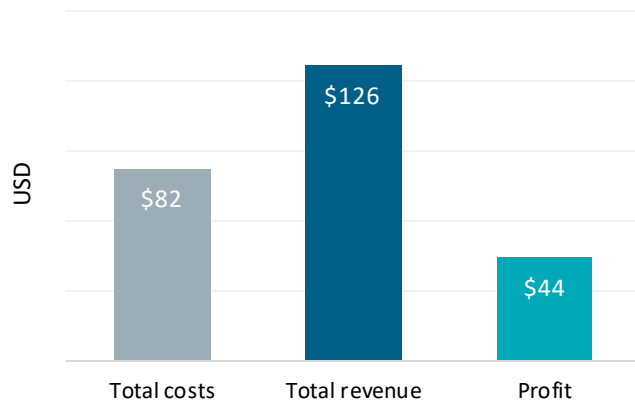
¹ The percentage increase in yield is calculated by dividing the difference-in-difference impact estimate of 244 kgs/acre by the baseline intervention yield of 317 kgs/acres

The vast majority of the participants that qualified for the LD loan in 2020 would recommend the program activities to their neighbors (94 percent), which is indicative of high satisfaction with the LD activities (Figure 3). More than 90 percent of participants are also willing to share the knowledge they have gained from the program. Notably, the share of participants willing to work collectively to purchase improved livestock breeds has increased from 66 percent in 2018 to 90 percent in 2020. This is an indication that women are willing to invest in this activity to improve productivity, fattening efficiency and income.

Livelihood Diversification Income

In 2020, women generated an average of \$44 USD of profit from the fattening and sale of two shoats (Figure 4). The costs are inclusive of the purchase price of the animal and average costs for additional medications and feeds. In 2018, participating women only generated \$12 USD from the fattening and sale of two shoats. Therefore, women experienced a 266 percent increase in the income derived from shoat fattening activities from 2018 to 2020.

Figure 4. LD income model 2020 (USD)

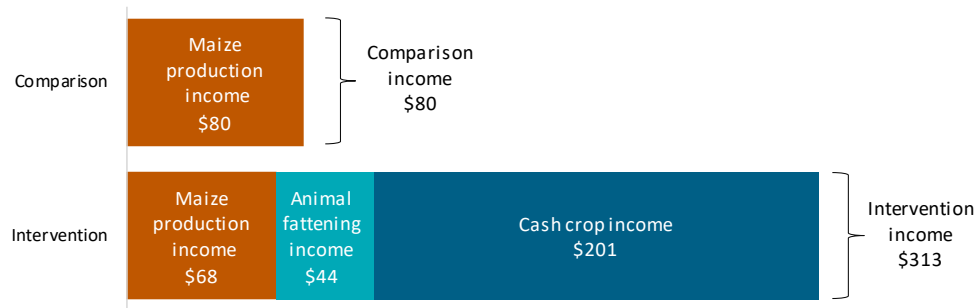


Combined Income Model

Improving on-farm and household income is a key feature of the NE Rural Livelihoods Program. Households that participate in the three primary program activities, maize and bean production, cash crop production (i.e. mung beans and groundnuts), and shoat fattening, have an opportunity to generate extra income from those activities. This is the first year that Nuru has combined the extra income (profit) generated from all three activities. In short, participation in these three activities generated \$313 USD (Figure 5) of extra income for households. Importantly, the income generated from

the cash crops was a significant driver of extra income due to higher local, regional, and international market prices for these crops. For example, a kilogram of maize sold at the market attracted \$0.23 USD in 2020, while a kilogram of mung bean and groundnut sold for an average of \$0.94 USD. **By participating in the diversified livelihood interventions Nuru farmers were able to generate \$233 USD of extra income compared to the comparison group farmers producing maize only.**

Figure 5. Combined livelihood income model



CONCLUSION AND RECOMMENDATIONS

Nuru Ethiopia was able to offer households and farmer organization members strong support throughout 2020. The efforts of the Nuru Ethiopia RL team to implement and scale cash crop activities, deliver maize and bean extension services, and support women in fattening and selling shoats were greatly complicated in 2020 by the onset of the COVID-19 pandemic, locust swarms, and managing through a state of emergency related to a national conflict. Moreover, the COVID-19 pandemic and locust outbreaks corresponded with the onset of the short rain production season in March and April of 2020. The ability of Nuru Ethiopia to safely adapt to COVID-19 and these other challenges ensured farmers and their farmer organizations were able to actively benefit from new income sources. Unfortunately, agricultural yields suffered decreases due to these disruptions.

Regardless, Nuru farmers were able to realize an increase in agricultural income and greater resilience through diversified livelihoods. The meaningful choices provided by Nuru Ethiopia resulted in the following positive results for Nuru farmers:

- Nuru Ethiopia farmers increased crop yields by 77 percent compared to their 2016 baseline and a comparison group.
- By participating in the diversified livelihood interventions Nuru farmers were able to generate \$233 USD of extra income compared to the comparison group farmers producing maize only.

HEALTHCARE

INTRODUCTION

With the intent of improving maternal and child health, the NE Healthcare (HC) Program works with Nuru farmer households to promote the adoption of eight healthy behaviors. The chosen healthy behaviors have been proven by technical research to decrease unnecessary disease and death, particularly for mothers and young children. The Nuru HC Program utilizes evidence from the World Health Organization, which identifies the need to focus on maternal and child health (MCH).² USAID's best practices on how to efficiently and effectively improve MCH through behavior change also guides the HC Program implementation.³

In a typical year, NE delivers healthcare services via tailored interpersonal communication and care groups formalized within the cooperatives. The tailored interpersonal communication approach employs observation and in-depth discussions to understand the specific needs of each household and where they fall in the stages of the change continuum (pre-contemplation, contemplation, preparation, action, and maintenance phases). Elected volunteer leaders are trained to provide Nuru family households with information about maternal and child healthy behaviors and ways to put them into practice. In 2020 during the COVID-19 pandemic, this type of face-to-face and group-based interaction was not possible in the same way due to social distancing protocols. The emphasis during 2020 was to continue with messaging on healthy behaviors and to maintain the partnership with the government, whose community health workers were continuing the work of promoting healthy behaviors at the community level. Additional activities included improving access to water as well as partnering with the government to construct maternal waiting homes and nutrition counseling corners in health facilities.

The Nuru M&E team supports this work by conducting an annual assessment (Table 4) towards the evaluation question: *What is the impact of the Nuru Ethiopia Healthcare Program on Nuru farmer households?*

² WHO. Children: reducing mortality. Updated October 2017. Retrieved 2018 June 25 from <http://www.who.int/mediacentre/factsheets/fs178/en/index.html>

³ USAID: Acting on the Call: Ending Preventable Child and Maternal Deaths, June 2014; Technical Approaches to Proven Interventions by USAID, Ensuring Healthy Behaviors p107-110. Retrieved 2017 January 17 from https://www.usaid.gov/sites/default/files/documents/1864/USAID_ActingOnTheCall_2014.pdf

Table 3. Healthcare survey timeline and sample size

Study Group	Sample Size: Healthcare	# of enumerators	Data collection dates
Nuru	696	19	8-19 March 2021
Comparison	178	19	8-19 March 2021

METHODOLOGY

Lives Saved Tool

The NE HC program’s traditional scorecards track healthy behavior change over time. To assess the impact of that behavior change, Nuru applied LiST. LiST is modeling software designed to estimate the impact of maternal and child health (MCH) interventions on mortality in low and middle-income countries.⁴ The tool aggregates the effectiveness of each NE HC indicator based on peer-reviewed literature and the software’s mathematical algorithm. After inputting NE’s indicators, the tool calculates an estimated percent reduction in under-five mortality.

Table 4. Healthcare Program indicators mapped to LiST inputs

NE HC Indicators	LiST Inputs
HHs washing hands at appropriate times	Handwashing with soap
HHs sleeping under LLINs	ITN/IRS HHs protected from malaria
Active pregnant women on track with 4 ANC visits	Iron supplementation in pregnancy
	Multiple micronutrient supplementation in pregnancy
Deliveries in a health facility	Skilled birth attendance & health facility delivery
	Health facility delivery
Newborns immediately breastfed	Breastfeeding <1 month
Women exclusive breastfeeding	Breastfeeding 1-5 months
Children 6-23 months on appropriate complementary feeding	Complementary feeding - education only

⁴ <https://www.livessavedtool.org/>

MONITORING

In addition to yearly impact evaluations focused on key healthcare outcomes, the NE HC team collects monitoring data throughout the year. While evaluations focus on a sample of households, program teams monitor the entire Nuru population. The monitoring data provides the NE team with quarterly data for real-time data-driven decision-making. Key takeaways from the monitoring data are:

- HC met targets in the following areas: women participating in the intervention, women attending at least 4 ANC visits per quarter, deliveries in a clinic, and health workers trained.

Table 5. Healthcare Program monitoring data

Indicator	Performance	Target	Actual
Number women participating in healthcare intervention		3,435	4,831
Percent of women who are on track to attend at least 4 antenatal care visits		75%	92%
Percent of deliveries in a clinic		65%	82%
Number of community health workers trained		102	103

RESULTS AND DISCUSSION

Lives Saved Tool

In 2020, the LiST tool calculated that NE’s impact on behavior change resulted in a 21 percent reduction in under-five child mortality. The main driver of this reduction is the delivery in health facility behavior. A useful feature of LiST is that it allows for comparisons between organizations working on maternal and child health (MCH) interventions. An analysis of a peer-reviewed journal article by Perry et al (2015)⁵ about the effectiveness of the care group method demonstrated that the average care group MCH intervention saw a 30 percent reduction in under-five mortality, while the average non-care group MCH intervention saw a 13 percent reduction in under-five mortality. NE’s impact of a 21 percent reduction in under-five child mortality is within the range of optimal performance against the benchmark.

However, NE’s impact of a 21 percent reduction in under-five child mortality is a decrease from the previous performance level of 28 percent reduction observed in 2018. We speculate that the

⁵ Perry, H., Morrow, M., Davis, T., Borger, S., Weiss, J., DeCoster, M., Ricca, J., & Ernst, P. (2015). Care groups II: a summary of the child survival outcomes achieved using volunteer community health workers in resource-constrained settings. *Global Health: Science and Practice*, 3(3), 370-381.

emergence of COVID-19 may partially account for this variance in two key ways. In the first place, COVID-19 in Ethiopia altered the modality of NE's interventions as well as the performance of the health sector professionals. NE implemented activities based on care groups – meetings of women participants and healthcare workers. During COVID-19 and the Government of Ethiopia State of Emergency proclamation, meetings of multiple individuals were banned. This meant that the promotion of healthy behaviors was much more constrained than in previous years. Second, at certain points during the pandemic, particularly early on when the mode of transmission was unknown, Ethiopian health facilities were closed to normal entry and movement was sporadically restricted. These circumstances may explain lower amounts of deliveries in a health facility. For instance, in Q1 and Q2 the percentage of deliveries in a health facility were 100 percent and 98 percent respectively. In contrast, in Q3 and Q4 of 2020 the percentage of deliveries in a health facility dropped to 72 percent and 58 percent, respectively. With health facilities closed due to COVID-19, some women were left with no option to deliver in a health facility. During, and despite, these circumstances, NE HC continued to offer life-saving health behavior change interventions and to make an impact in 2020.

CONCLUSION AND RECOMMENDATIONS

Nuru Ethiopia's Healthcare Program contributed to achieving a 21 percent reduction in under-five child mortality as observed in the impact population against the population of SNNPR at large. COVID-19 disrupted many of the aspects of normal service delivery for the NE activities. While the pandemic saw increased public attention towards some healthy behaviors such as handwashing, to a great degree there was much more limited access to routine health services, including public health and access to facilities for deliveries. These changes led to decreased adoption of healthy behaviors and decreased impact in 2020 as compared to previous years, although there was still a significant and substantial contribution of NE's efforts to creating the impact of decreasing under-five child mortality.

DISCUSSION & CONCLUSION

The COVID-19 pandemic disrupted all facets of life in Ethiopia. The Government of Ethiopia implemented a sweeping State of Emergency proclamation in April 2020 that widely restricted many forms of movement and gathering. These restrictions were enacted and enforced down to the level of remote and rural areas of the country.

In light of these restrictions, Nuru Ethiopia adapted the modality of delivering programs. Whereas group meetings and field-based outreach were previously the norms, NE began to implement activities through remote communication and limited interaction. NE continued to rely on partnerships with the government and with farmer organizations to enable and build on service delivery to farmer households. The result was achieving impact in cooperatives, livelihood, and healthcare activities.

- The NE-supported cooperatives averaged an average SCOPEinsight score of 4 out of 5 demonstrating competitiveness at national, regional, and global levels for agricultural farmer organization businesses.
- 80 percent of NE-supported cooperatives achieved net profit from their business operations in 2020, exceeding the target of 70 percent.
- By participating in the diversified livelihood interventions, Nuru farmers were able to generate \$233 USD of extra income compared to the comparison group farmers producing maize only.
- Nuru Ethiopia farmers increased crop yields by 77 percent compared to their 2016 baseline and a comparison group. This achievement is more than double the targeted yield increase benchmark of 32 percent.
- The NE Healthcare Program achieved a 21% reduction in under-five mortality due to the healthy behavior adoption rates.