

Executive Summary

In 2016, the Nuru Ethiopia (NE) Education Program achieved impact in progress toward literacy and across the core components of reading. This report marks the end of the first year of Nuru Ethiopia's Education Program after designing the model in 2015. The core pieces of the model: teacher training, school libraries, and community reading activities come from Save the Children's Literacy Boost program. Nuru partnered with Save the Children to implement the Literacy Boost model in 2015. Over the course of the 2015-2016 school year Nuru worked with almost 3,200 children and trained 87 teachers in 11 schools and provided out of school reading opportunities to Nuru farmer children at 7 Nuru cooperatives.

For the 2016 impact evaluation, a sample of 482 Nuru farmer children and 370 children from a non-Nuru comparison area were assessed using the Uwezo and Early Grades Reading Assessment (EGRA) literacy measurement tools. This report utilizes a difference in difference methodology to compare the growth of Nuru farmer children and non-Nuru farmer children on literacy indicators from the baseline in 2015 to the follow-up timepoint in 2016 after one year of Nuru's intervention.

Key findings of the 2016 impact report include:

- On the Uwezo assessment, 9% more Nuru farmer children improved at least one reading level from 2015 to 2016 than the children from the comparison area.
- Over the course of one year of Nuru's education intervention, Nuru farmer children grew by 40% more on progress towards literacy metrics of the Uwezo assessment than non-Nuru Children. Additionally, Nuru children had higher gains in reading skills at each grade level from Grades 2-4.
- EGRA sub-tasks were assessed for the first time and Nuru farmer children outperformed non-Nuru children on letter identification, familiar word reading, and oral reading fluency. On average, Nuru children identified one-third more letters, 2.5 times as many words, and read more than double the correct words per minute than Non-Nuru Children.

This is the first timepoint post-baseline to assess Nuru Ethiopia's Education Program's impact. The next follow-up will occur in mid-2017 to continue to track progress of children of Nuru farmers vs non-Nuru farmer children.

Introduction

The Nuru Ethiopia (NE) Education Program aims to increase child literacy levels to second grade reading levels among Nuru farmer children in early primary school (Grades 1-4). Grade 2 level literacy is generally defined where children can fluently read and comprehend basic text.

The core components of the Nuru Ethiopia Education model are:

- Teacher training on the best practices in teaching literacy in the schools located in Nuru farmer cooperative areas.
- The establishment of school libraries in the schools where teacher training is conducted along with follow-up observations and feedback to teachers and administrators.
- Training for district and school officials on leadership and management techniques.
- The establishment of book banks, or mini-libraries, at Nuru farmer cooperatives where children of cooperative members can practice reading outside of school walls.
- The co-construction of sex-segregated latrines to increase girls attendance in school.

This model is based on Save the Children’s Literacy Boost¹ model. The overall focus and goal is to improve the reading skills of students in Nuru target areas, specifically focused on the five core components of literacy: letter identification, phonemic awareness, fluency, vocabulary and comprehension.

Monitoring

In addition to yearly impact evaluations, the NE Education team collects monitoring data throughout the year. While evaluations focus on a sample of farmers, program teams monitor the entire Nuru farmer population. For the 2015-2016 school year, Nuru offered services to 11 primary schools and 7 Nuru farmer cooperatives, serving almost 3,200 children in grades 1-4. Nuru met monitoring targets, establishing libraries at each of the 11 schools and sex-segregated latrines at 10 schools. Additionally, Nuru established book banks and ran reading camps at each of the 7 Nuru farmer cooperatives it targeted. Attendance of Nuru farmer children at reading camps exceeded the target of 50% with 57% of Nuru farmer children attending reading camps by the end of 2016.

Objective

This report serves as the first follow-up time point to the initial baseline assessment. Nuru conducted a baseline literacy assessment of its initial service areas in Ethiopia in 2015. The follow-up assessment was conducted in 2016 after approximately one year of Education Program services. The following presentation of individual level data intends to provide an update on the literacy progress of Nuru farmer children as compared to a non-Nuru sample of children over the first year of the Education Program in Ethiopia. Subsequent follow-up assessments will be taken in future years to track the longitudinal growth of students over time.

Nuru M&E supports this work by conducting an annual assessment towards the evaluation question: *What is the impact of Nuru Ethiopia’s Education Program on progress toward literacy and the core components of reading?*²

¹ http://www.savethechildren.org/site/c.8rKLIXMGlpI4E/b.7084483/k.8F5A/Literacy_Boost.htm

² The evaluation survey is available upon request

Methodology

Nuru Ethiopia M&E conducted the initial baseline assessment of literacy in Ethiopia in August 2015. One year later, the M&E team returned to assess the same children in August 2016 to assess their growth over the first year of Nuru’s intervention. August was chosen as a time when children were out of school for “summer” break between school years. The baseline and follow-up assessments were carried out at the household level with an intent to follow-up with all households of Nuru cooperative members that had children who had completed grades 1-4. Nuru has a comparison group of households where no-Nuru services are being delivered to compare children’s literacy growth from those households to households receiving Nuru’s interventions.

The findings presented in this report highlight those children who initially completed Grades 1-4 in August of 2015 and then followed up the ones who completed Grades 2-4 in 2016. Those children who were in grade 5 during the 2015-2016 school year were excluded due to being outside of the target group of first cycle primary school grades, which is grades 1-4. The numbers of children assessed in Nuru and Non-Nuru households is depicted in Table 1.

These groups of children will be tracked from year to year on the literacy domains from the EGRA listed in the next section. The growth of the children on literacy domains in Nuru areas vs the children in non-Nuru areas will be captured each year and compared to each other. The difference in literacy growth rates will be assessed as Nuru’s impact. This is often referred to as a difference in difference approach and allows for the comparison of results when groups start at different places.

Table 1: Survey timeline and sample sizes

Sample	# of Children	# of Enumerators	Dates of Training	Dates of data collection	Data entry and quality control
Nuru	482	35	July 2016	Aug 2016	Aug 2016
Comparison	370				

Uwezo

The Uwezo Literacy Assessment was developed by a regional initiative between Kenya, Tanzania and Uganda called Uwezo, which strives to improve the competencies in numeracy

and literacy among primary school aged children.³ NE M&E originally chose this tool to use for the baseline assessment because of its previous use by Nuru in Kenya and its ability to measure literacy in a quick and easy way.

In August 2016, at follow-up, the Uwezo assessment was once again used to assess the growth of children on two main indicators:

1. Progress toward literacy, a composite measure scaled 0-5, which reflects the average literacy level of students according to the Uwezo assessments, where 0 = None, 1 = Letter, 2 = Word, 3 = Paragraph, 4 = Story and 5 = Literate, and
2. The percentage of children who moved up a level on the Uwezo from one year to the next.

EGRA

As a part of the evaluation strategy starting in 2016, NE M&E began using the Early Grade Reading Assessment (EGRA) for measuring literacy. [The Early Grades Reading Assessment \(EGRA\)](#) is currently the most commonly used early grades (classes 1-4) literacy assessment in the world. EGRA was developed in 2006-2007 by early grade reading experts at RTI and USAID in consultation with reading scholars at universities from a host of other organizations around the world. EGRA has been used by over 30 organizations in over 70 countries and translated into 120 languages.

Typically EGRA has six main components, but this baseline highlights three components that were selected for their comparability to Nuru's past assessment, Uwezo, and for time purposes. In future years, Nuru may include more EGRA components, in addition to these three. The three main components of literacy assessed were: Letter Name Identification, Familiar Word Reading, and Oral Reading Fluency. From those domains, three main indicators were used to assess baseline results. Those indicators are:

- Percentage of letters correctly identified in one minute
- Percentage of words correctly read in one minute
- Number of correct words per minute (cwpm) read in a short story

For the first two domains, children were given lists of letters and words and asked to identify or read as many as they could. Enumerators timed them while recording their results and stopped them after one minute was complete. For the third indicator, children were given a story and asked to read it all of the way through. Enumerators recorded how many words children read correctly in one minute, but children were allowed to finish the story if it took them longer than one minute. Only words read correctly in the first minute were recorded for analysis.

In future evaluations, NE M&E will use the EGRA assessment due to its wide use in the education sector, ability to compare results to other organizations and countries, and ability to provide more precise estimates of literacy levels. The Uwezo assessment will likely be phased out to prevent administering two separate assessments at once.

³ Primary school aged children are between 6 and 16 years old in this context. For more information on Uwezo, please visit www.uwezo.net.

Finally, as in any longitudinal study over the course of several years, retention of participants is a challenge, especially when dealing with children. Factors that cause attrition are many ranging from children and families moving, not showing up for the follow-up, having work or other duties, etc. From an implementation perspective, due to logistical challenges, the out of school reading component of Nuru's Education Program did not start until April 2016, so the follow-up assessment only captures the effects of about 4 months of that activity instead of a full year. While Nuru's Education Program has both in and out of school components, it is not possible to isolate the specific impacts of either the in-school or out of school portions of the intervention.

Results

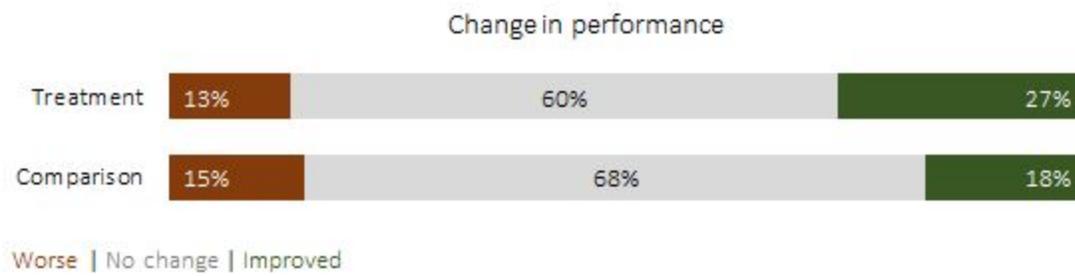
The results portion of this report is broken down into two sections: 1) The results of the Uwezo assessment which depict growth of students from 2015-2016 and 2) The results of the EGRA assessment for 2016.

Results: Uwezo 2015-2016

The results of the Uwezo assessment are often broken down into levels: Nothing, Letter, Word, Paragraph, Story and Literate. Students are characterized by the highest level they were proficient at on the Uwezo exam. For example: If the student is able to read the two short paragraphs of the Uwezo assessment fluently with minimal errors, but not able to read the full story given to them after that, they will be marked as having attained the paragraph level. At baseline in 2015, the highest level attained on the Uwezo was recorded for both Nuru and Non-Nuru students. For the 2016 follow-up assessment, the highest level attained on the Uwezo for each of the same students with the goal of understanding how many students moved up a level, stayed the same, or performed worse than in 2015 (See Figure 1).

Figure 1 shows the percentage of students in the "Treatment" or Nuru-service areas versus the children in the non-Nuru comparison areas. Overall, approximately 27% of the children in Nuru service areas increased at least one level on the Uwezo assessment, while only 18% of children in the comparison areas increased one level. The difference of 9% is reflected as impact of the Nuru Education Program over the first year. While the majority of students, 60%, stay at the same level in Nuru areas, a small percentage, 13%, of children perform worse and their literacy levels drop from 2015 to 2016. However, the percentage of students who did not grow, 68%, and dropped a level 15%, in the comparison areas were higher than in Nuru areas, suggesting Nuru's Education Program had a positive impact on student growth.

Figure 1: Change in Literacy Levels 2015-2016



To attempt to understand why students would drop in literacy levels from one year to the next, NE M&E did some investigation on potential causes. Some hypotheses are:

- Lack of parental involvement, especially during summer months out of school when assessment was taken.
- As children get older, parents/family likely to give them more household work which in turn may have resulted in being absent from school more.
- The weather fluctuation in recent years affected many families economically and this forces families to become unable to properly feed their young children which may affect the performance and school attendance.

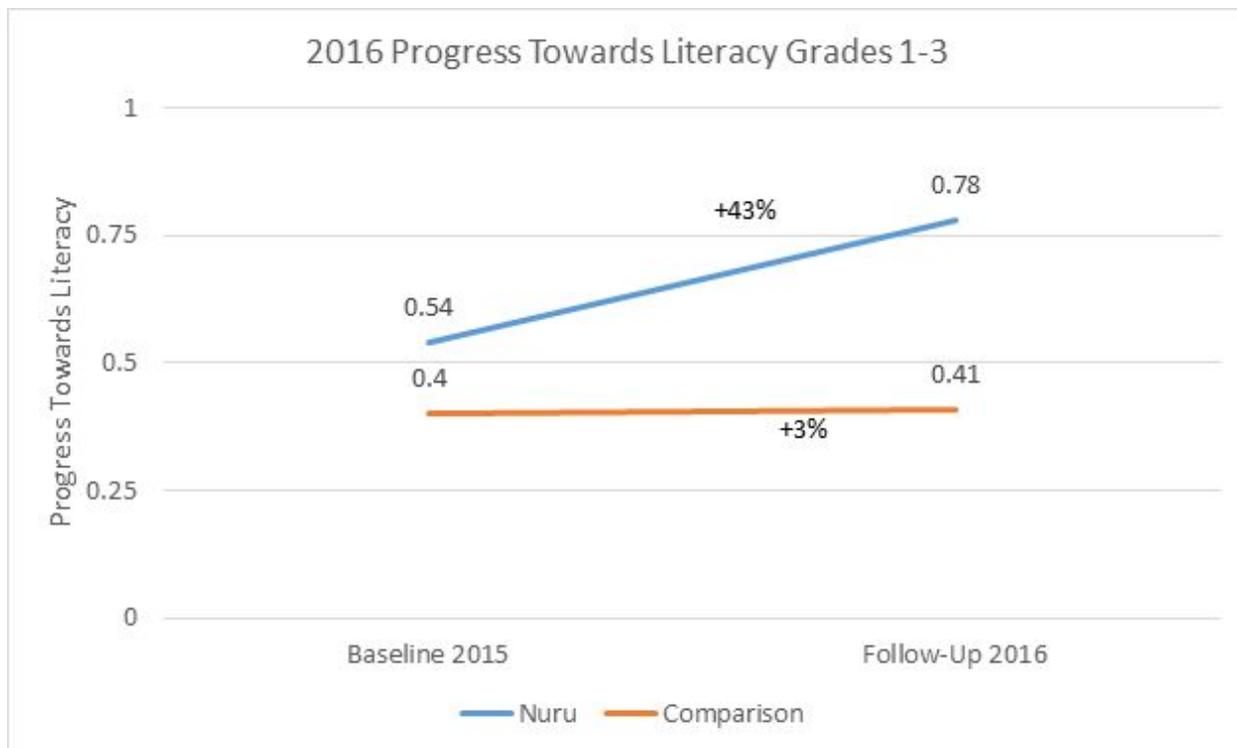
Nuru Ethiopia will try to track some of these factors more carefully over the coming year and next assessment time point.

In addition to how many students improve their literacy levels, Nuru also looked at the average literacy level students achieved. At baseline in 2015, children in Nuru areas averaged approximately 0.54 on a scale of 0-5, while non-Nuru students averaged 0.40 (Figure 2). In practical terms, this meant that students in both groups were averaging below the “Letter” level on the Uwezo assessment, not being able to identify 4 of 8 letters presented. At follow-up in 2016, Nuru students averaged 0.78 compared to only 0.41 for comparison students. When comparing growth rates from 2015-2016, Nuru students outgained Non-Nuru students by 40%. Non-Nuru students remained relatively stagnant, gaining only 3%, where Nuru students increased their levels by 43%. Still, on average, students who completed grades 2-4 in 2016 were averaging below the letter level for both groups.

Nuru expected that more children would reach the word level after a year of intervention based on instruction targeted towards identifying letters and sounds. However, with a large initial percentage of children not being able to even identify letters, progress is still occurring despite children having to balance learning to read in Gamogna, Amharic, and English. Gamogna and English have the same character base for letters, but Amharic has a completely different character base. Amharic is a subject that is taught in schools in lower grades, but students are expected to learn other subjects and how to read in their native language of Gamogna. Nuru’s

instructional techniques carry over to Amharic and English teaching, but children are still faced with learning three languages in two character bases, which can slow progress initially.

Figure 2: 2016 Progress Towards Literacy All Grades (1-3)



Literacy Scores: 0 = None, 1 = Letter, 2 = Word, 3 = Paragraph, 4 = Story, 5 = Full Literacy

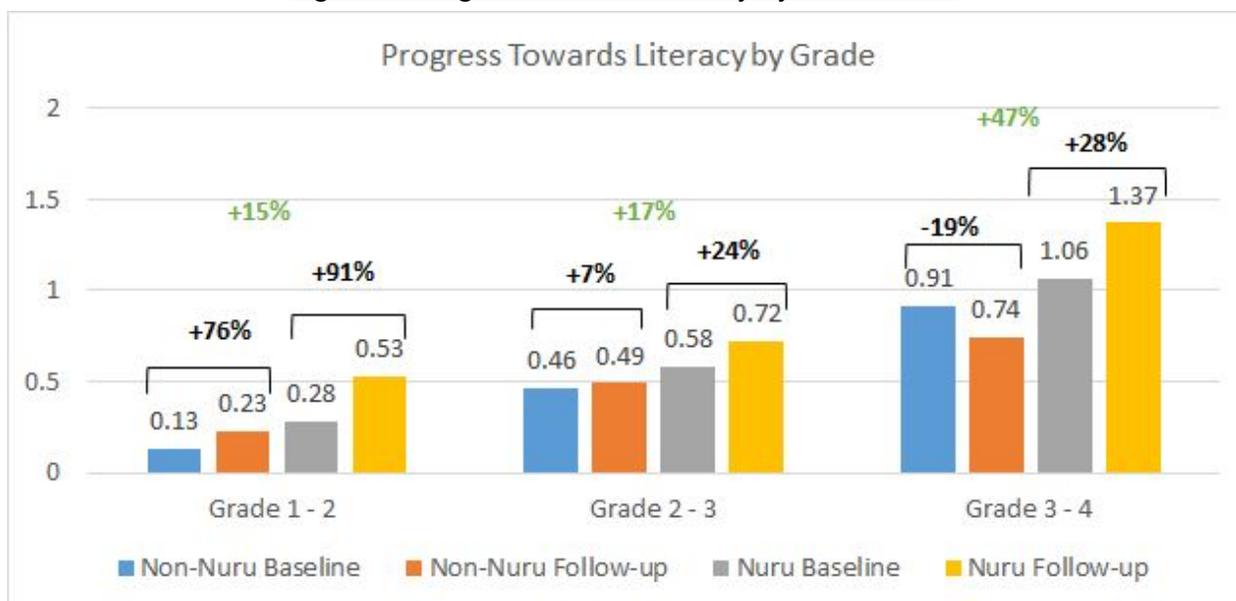
While overall literacy levels are still low, children in the Nuru areas are increasing literacy levels over time. This was Nuru’s first year of implementing the Literacy Boost model. Teacher trainings were delivered for the first time by Nuru staff. Training modules were translated into Gamogna (the local language) for the first time ever, as this program had not been offered in Gamogna speaking areas by Save the Children. Additionally, reading camps at Nuru farmer cooperatives had only been up and running for 3-4 months prior to the follow-up assessment due to timing when books were able to be purchased. At the next time point in 2017, Nuru will be able to capture results from a full year of out of school reading activities in addition to refined teacher trainings and expect to see many more children with the ability to identify basic words.

Despite not having many reading camps prior to assessment, there was a moderate positive correlation of 0.55 between attendance at reading camps and higher literacy levels on the Uwezo assessment. From monitoring data, approximately 57% of Nuru farmer children from the target age range were attending reading camps at the end of 2016. Increasing this percentage of children attending reading camps will be a high priority area for 2017.

Finally, from a gender equity perspective, both girls and boys in Nuru’s areas experienced significant reading gains on average. While there is not enough evidence to determine a causal link with reading scores, Nuru introduced gender responsive pedagogy in its teacher trainings to ensure equity in attention by teachers to both girls and boys.

When the aggregate results are broken down by grade level, students in Nuru areas outperform students in non-Nuru areas at each set of grades (Figure 3). Students in Nuru areas who moved from grade 1 to 2 from 2015 to 2016 increased 15% more than the comparison area students. Similarly, those students who moved from grade 2 to 3 had gains 17% higher than the comparison group. Finally, when looking at students who moved from grade 3 to 4 over 2015-2016, students in the comparison group actually decreased levels by 19% whereas students in Nuru areas increased by 28% for a difference of 47% growth in literacy. These gains are positive, despite being moderate in size, in the context of rural Ethiopia where children started with almost no literacy skills. In addition, gains held despite children were assessed outside of school, several months after the school year ended, which typically results in some children being out of practice or forgetting skills.

Figure 3: Progress Towards Literacy by Grade Level



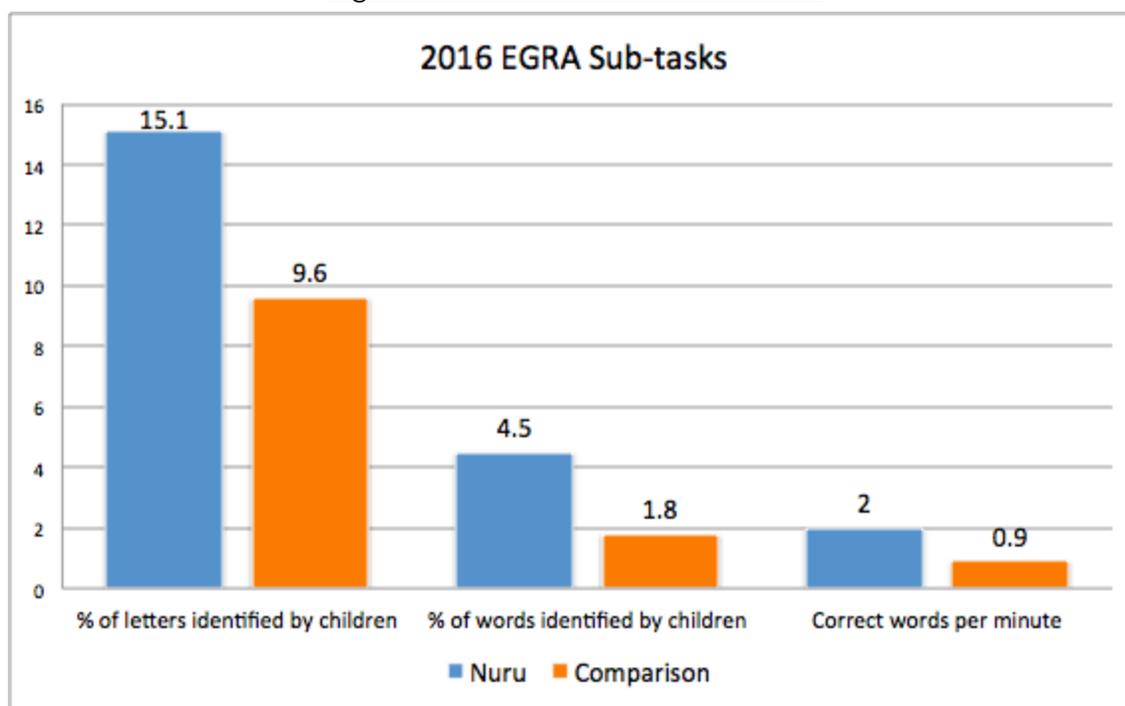
Literacy Scores: 0 = None, 1 = Letter, 2 = Word, 3 = Paragraph, 4 = Story, 5 = Full Literacy

Larger gains occurring in the lower grades is to be expected as students have more room to grow and are not as set in their ways in terms of learning. Nuru intends to follow the learners who completed Grade 2 in 2016 through to their completion of grade 4 to see the full program’s impact on their reading skills through the early primary school years.

Results: EGRA 2016

As noted in the methodology section, 2016 was the first year that subtasks of the Early Grade Reading Assessment (EGRA) were administered by Nuru in Ethiopia. The EGRA results serve as a starting place for Nuru due to not having baseline information from 2015 to compare starting places for children in Nuru and non-Nuru areas. Nevertheless, children from Nuru areas scored higher than children from non-Nuru areas on all three EGRA subtasks administered (See Figure 4). On average, Nuru children identified one-third more letters, 2.5 times as many words, and read more than double the correct words per minute than Non-Nuru Children. It is important to note that many children were not able to attempt the reading passage, so the high number of zero scores brought the average correct words per minute down. This is consistent with what the Uwezo results show that many children are still struggling to read letters and words.

Figure 4: 2016 EGRA Sub-task Results



When looking at the results by grade level, Nuru children in the youngest grades have the greatest differences in magnitude of gains compared to the comparison group children, so it will be imperative to continue to track their results over time to see how those students make progress towards fluency and comprehension of text.

Conclusion and Recommendations

The Nuru Ethiopia Education Program achieved its goals, helping to increase students' literacy levels on both the average progress towards literacy and core reading skills. Students showed progress towards using reading as a skill to learn new things. Literacy is a critical skill in achieving economic advancement and opens up opportunities in the future to prevent the cycle of intergenerational poverty.

- After one year of Nuru's intervention, 9% more Nuru farmer children improved a reading level on the Uwezo than the comparison children.
- Nuru children grew by 43% on progress towards literacy metrics of the Uwezo assessment compared to only a 3% gain by non-Nuru Children, a difference of 40%. Additionally, Nuru children had higher gains in reading skills at each grade level from Grades 2-4.
- EGRA sub-tasks were assessed for the first time and Nuru farmer children outperformed non-Nuru children on letter identification, familiar word reading, and oral reading fluency. On average, Nuru children identified one-third more letters, 2.5 times as many words, and read more than double the correct words per minute than Non-Nuru Children.

While there is still much room for growth, with the majority of Nuru children only reading at the letter level, Nuru's literacy intervention does appear to be making positive impact. The next follow-up assessment will be taken in August 2017 to assess the impact of Nuru's Education Program.

After an extensive review process in 2017 where the results of this report were analyzed and brought together with monitoring data, the following recommendations are being explored for the program moving forward:

1. Include Kindergarten teachers in the teacher training sessions each month at schools to help establish some of the foundational skills such as letter identification at an early age that over half of children from our sample were still lacking after one year of intervention.
2. Make adjustments to the reading camp program to ensure maximum children's attendance, which was 57% at the end of 2017, and quality of instruction outside of school.
3. Add behavior change communication components to parent meetings through cooperative activities with women such as healthcare care groups and saver meetings to continue to emphasize the importance of children attending school and reading outside of school walls.
4. Consider helping create reading rooms for schools to ensure greater use of books during school time.