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Ethiopia Early Grade Reading Assessment

Regional Findings Annex



Ethiopia Early Grade Reading Assessment
Ed Data II Task Number 7 and Ed Data II Task Number 9
October 15, 2010

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Prepared for
USAID/Ethiopia

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Regional Analysis Annex

This annex is an accompanying document to the Ethiopia Early Grade Reading Assessment (EGRA) report. The purpose of the annex is to examine in more detail the reading assessment scores for individual regions. Since language assessments cannot be compared with any validity, this annex presents each region's scores separately. This also allows the regions to examine their reading outcome scores by woreda, to see where the focus should be on reading outcomes.

In addition, we present the words and letters that are most difficult for children in each region to provide some context as to whether and how children struggle in reading their letters and in recognizing words.

1. Tigray Region EGRA Scores

In this section, we present and analyze Tigray region Early Grade Reading Assessment (EGRA) scores. Figure 1 is a map of the Tigray region and its woredas, and Table 1 presents all of the EGRA task scores from across Tigray, disaggregated by gender and grade. In addition, Table 1 indicates the percentages of zero scores for several tasks: word naming fluency, unfamiliar word fluency, oral reading fluency, and reading comprehension. Several items are of interest from this table. First, note that the fidel identification fluency task scores increase from 34.6 fidel per minute (pm) in Grade 2 to 44.2 fidel pm in Grade 3. This shows that children in Tigray are improving their ability to identify letters in Grade 3, which is surprising because the assumption would be that, for the most part, children are comfortable with and capable of knowing the fidel by the end of Grade 2. There is little variation in the phonemic awareness scores; the difference between Grade 2 females (5.8 out of 10) and Grade 3 males (7.9 out of 10) is quite modest. It appears that most children in the sample are able to differentiate the fidels within a word. For word naming fluency, where the children were faced with a set of 50 familiar and commonly used words from the Tigray reading textbook, we find that boys outperform girls (more so in Grade 3), and that there is a large increase from Grade 2 (20.8 words per minute [wpm]) to Grade 3 (32.4 wpm). This makes sense, given that children are more comfortable with a wider range of words by Grade 3. Yet, it should be noted that 20.8 wpm in Grade 2 represents a quite limited capacity to read familiar words. Unfamiliar word fluency scores are surprisingly low (11.6 wpm in Grade 2 and 17.2 wpm in Grade 3) given the identified skill level in fidel identification. Given the consistency in pronouncing Tigrigna words, it would suggest that scores on unfamiliar word fluency (decoding) should be closer to that of word naming fluency. It is possible that children have not had much experience facing new words or training on what to do, systematically, to figure out how to read a new word. Oral reading fluency scores are also low, with children in Grade 3 (24.7 wpm) outscoring those in Grade 2 (15.1). Reading between 15 wpm and 25 wpm will not allow sufficient fluency to be able to comprehend what is read. This is supported by the very low reading comprehension scores in Grade 2 (15.3%) and the modest scores in Grade 3 (29.3%). In Grade 2, this means that three quarters of the population got 1 answer correct out of 5. In Grade 3, this means that the average child got 1.5 answers correct out of 5. The increase between Grades 2 and 3 is large, but for many children, that is too late. It is remarkable how much higher the listening comprehension scores are (55.7% in Grade 2 and 65.2% in Grade 3) than the reading comprehension scores, indicating a problem with reading and comprehending what is read.

Figure 1. Map of Tigray region

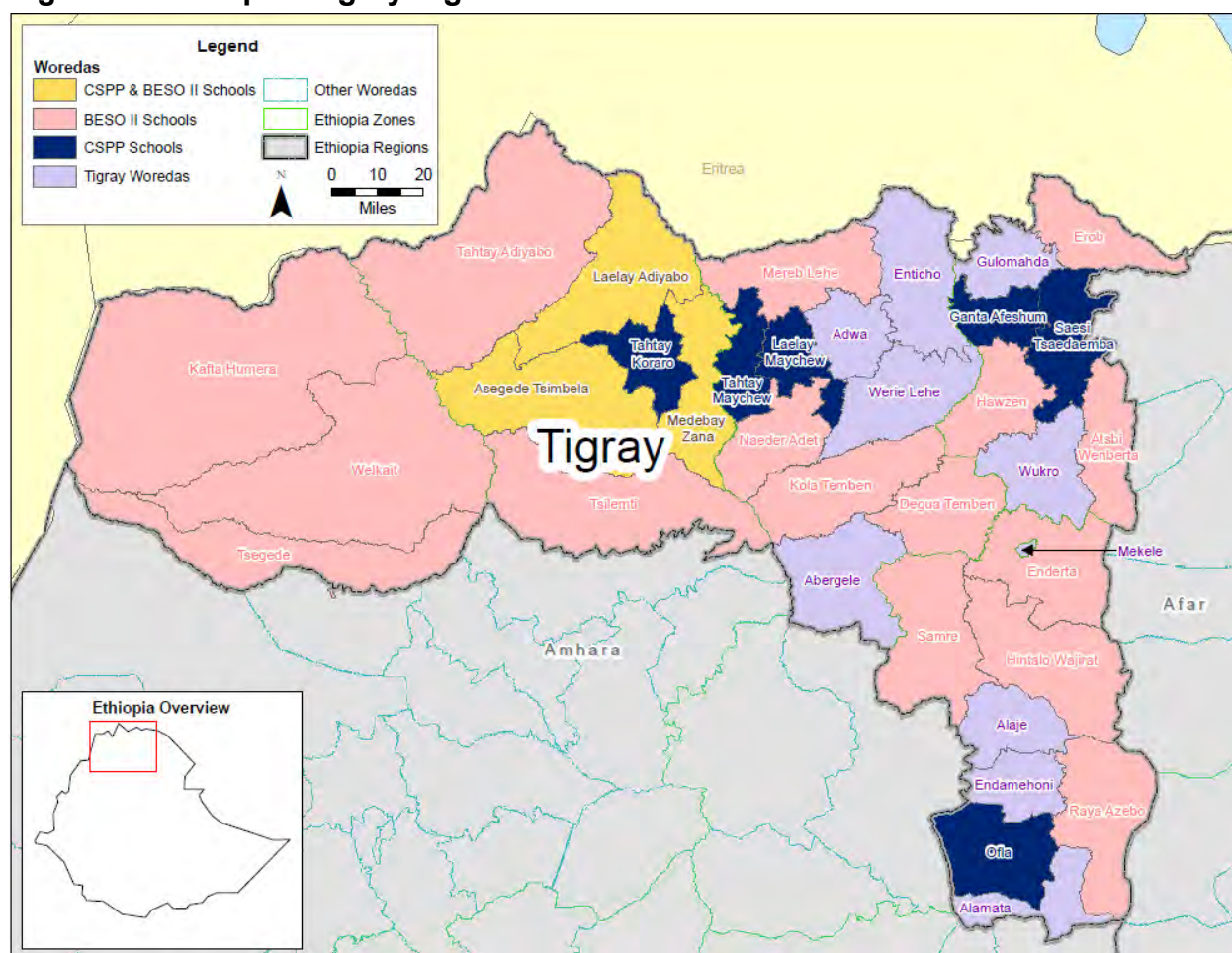


Table 1. EGRA scores in Tigray region

		Tigray EGRA Scores						
Task		Grade 2			Grade 3			Total
		Total	Female	Male	Total	Female	Male	
Tigrigna	Fidel Identification	34.6	34.3	34.9	44.2	40.7	47.6	39.5
	Phonemic Awareness	6.0	5.8	6.2	7.5	7.1	7.9	6.8
	Word Naming Fluency	20.8	19.7	21.9	32.4	29.4	35.4	26.8
	Unfamiliar Word Fluency	11.6	11.4	11.8	17.2	16.2	18.3	14.5
	Oral Reading Fluency	15.1	14.4	15.8	24.7	22.5	26.9	20.0
	Reading Comprehension	15.3	14.2	16.5	29.3	28.1	30.6	22.5
	Listening Comprehension	55.7	55.3	46.1	65.2	63.4	66.9	60.6
Zero Scores (%)	Word Naming Fluency	31.5	30.5	32.5	13.2	16.4	10.1	22.1
	Unfamiliar Word Fluency	33.7	33.8	33.6	21.4	25.1	17.9	27.4
	Oral Reading Fluency	29.7	28.9	30.6	12.7	17.1	8.4	21.0
	Reading Comprehension	56.9	59.9	54.0	30.9	32.3	29.5	43.6

With respect to the zero scores for each task, it appears that there is a relatively consistent one-third of the Grade 2 population who are unable to read words in isolation, decode new words, or read words in a story. In Grade 3, that population drops to around one-seventh, or one-fifth for unfamiliar word fluency. The number of zero scorers for reading comprehension also is

concerning, with more than one half (56.9%) of Grade 2 children and nearly one-third (30.9%) of Grade 3 children unable to understand what they read at all.

This data, in combination, shows that there are several major issues. First, children are not very fluent with their fidel, so there are obvious implications for improving (and speeding up) the teaching of the fidel. Second, many children have a limited ability to connect the fidel that they can identify together into words. Third, most children have modest skills in combining words together coherently so that understanding can ensue. This suggests that teaching the letters, ensuring that children can decode words, and providing training in comprehending what is read are key next steps.

In Figure 2, the range of scores by woreda is presented. This provides strong evidence that there are schools in Tigray that are doing much better in teaching children reading, and some that have a much worse pedagogical provision for reading. This figure presents the percentage of Tigrayan children reading at certain levels by woreda. The blue bar indicates the zero scorers, red the low scorers, green the moderate scorers, and purple the children reading at the benchmark (60 wpm).¹ The woreda with the fewest zero scores was Enda Mokoni, with Mekelle close behind. The woredas with the highest percentage of children reading 60 wpm were Adewa City and Ahferom. The woredas with the highest percentage of children reading less than 30 wpm (blue and red bars) were Saesi Tsaedaemba and T/Abergele. Finally, the woredas with the highest percentage of children reading 30 wpm or above were Enda Mokoni, Mekelle, and Werie Lekhe. Note that 30 wpm still is quite low and that what is needed for fluency and understanding is 60 wpm (approximately), or above.

Figure 2. Tigray woreda percentage scores on oral reading fluency

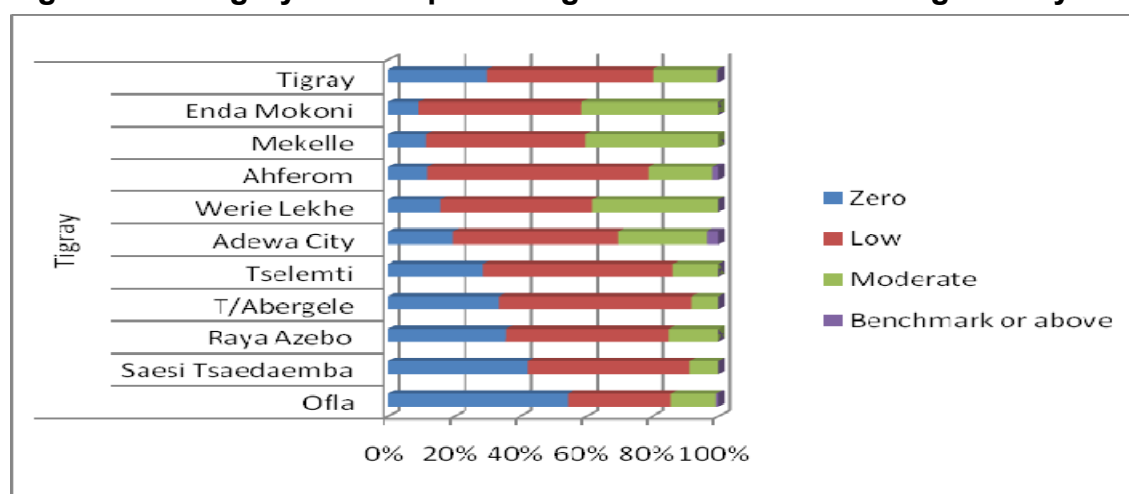


Figure 3 presents the average scores for Grade 2 boys (blue line) and girls (red line) and Grade 3 boys (green line) and girls (purple line) against the benchmarks for each task within Tigray. We used the 90th percentile score for Tigray because while it was less than desirable in some tasks, it is representative of Ethiopia-specific data. This radial plot can inform policymakers as to where

¹ Note that this benchmark can be improved upon consultation with this data and regional reading experts.

the biggest gaps are. Notice the skew toward listening comprehension, such that the percentage scores are highest for all groups on the listening comprehension task. That means that most children in Tigray are relatively strong in their ability to listen to spoken Tigrigna and understand what it means. A dramatic drop occurs between listening and fidel naming, though, with all groups, including Grade 3 boys, less than 60% of the way to Tigrigna benchmarks. Scores are slightly higher for familiar word naming fluency. However, decoding scores are quite low, and oral reading fluency is modest at best. The widest gaps, notably, are at reading comprehension, with Grade 2 children scoring around 30% of the benchmark, and Grade 3 children scoring around 50%. Note that the consistent pattern is for Grade 3 boys to outperform girls, but that Grade 2 scores are much closer between the genders.

Figure 3. Radial plot for Grade 2 and Grade 3 boys and girls against Tigray benchmarks for six EGRA tasks

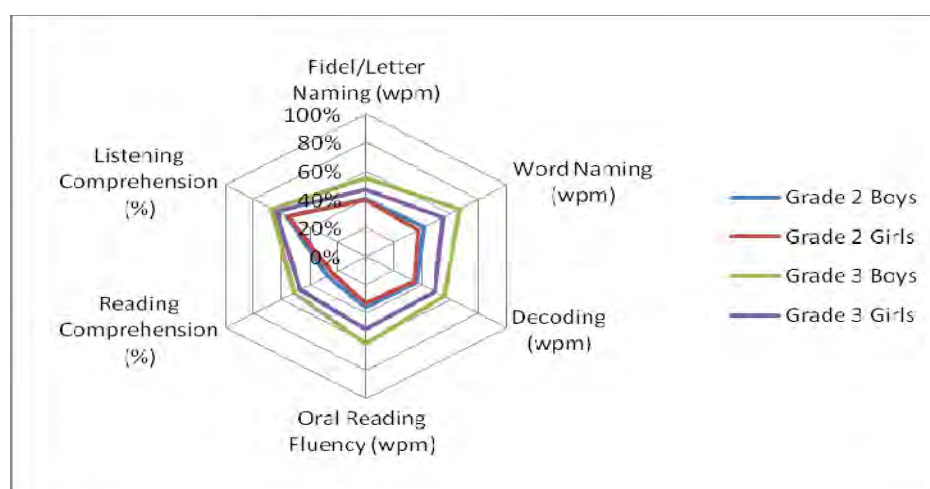
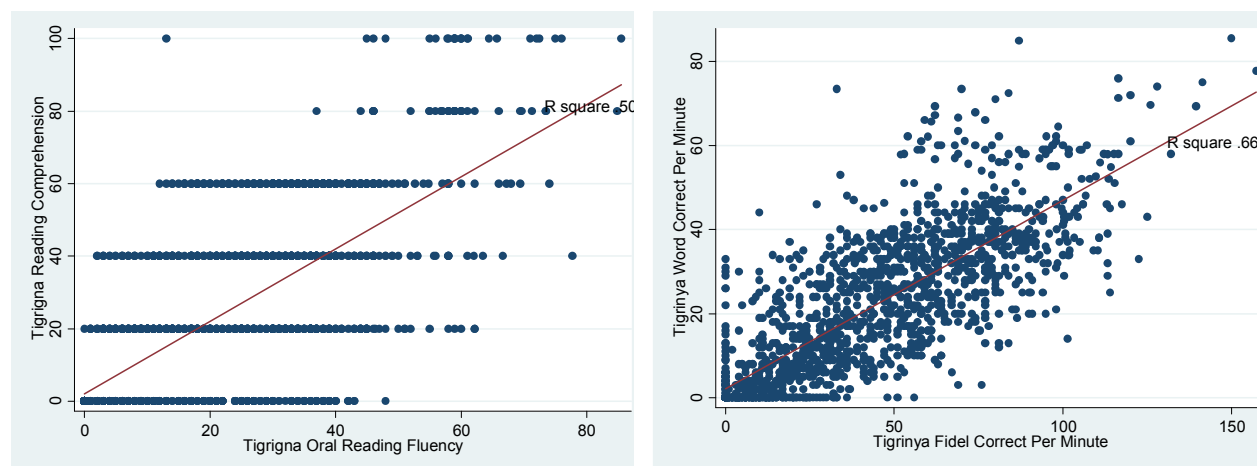


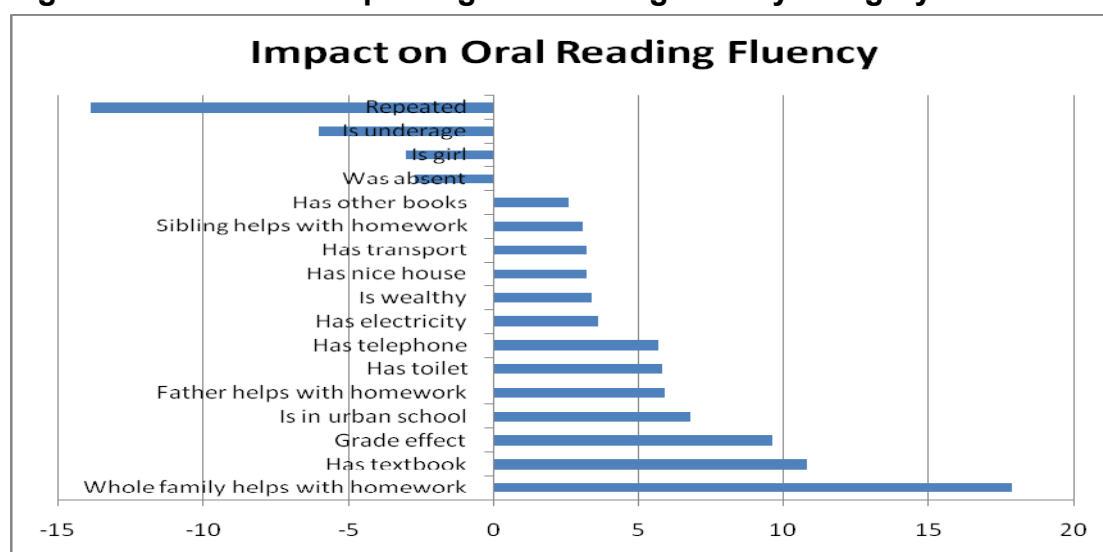
Figure 4 presents the comparison between Tigrigna oral reading fluency (on the X axis) and Tigrigna reading comprehension (on the Y axis). It shows very clearly that the more that children can read, fluency-wise, the higher their reading comprehension scores. This is good news in some ways because it shows that there are many children in Tigray who can read to expected levels, and when they do, they are very likely also to understand what they read. The problem seems simple (in diagnosis)—far too few children are reading at the fluency rates necessary for comprehension. The story is similar for the comparison (on the right) between fidel identification and word reading. If children know the fidel fluently, they can read words fluently. This has clear pedagogical implications—if the fidel is taught, children can read. And if children can read, they can comprehend.

Figure 4. Tigrigna oral reading fluency against reading comprehension (left) and fidel against words (right)



The final portion of the Tigray-specific analysis is an investigation of the factors that are related to the quality of learning outcomes, as measured by oral reading fluency scores. Each of these factors is displayed by the regression coefficient for its relationship with oral reading fluency, specifically for children in Tigray. Figure 5 shows a few interesting things. First, repetition dramatically adversely affects oral reading fluency scores (-13.9 wpm), as does being underage for one's grade (-6.0 wpm). Having other books improves scores (2.6 wpm), as does many of the family background characteristics expected to impact scores. Having the textbook has a very large impact on oral reading fluency scores (10.8 wpm). Put another way, for the smaller percentage of Tigray children without a textbook, their scores are dramatically adversely affected by the lack of provisions. The urban school effect is also quite large (6.8 wpm) and having a family with enough time to support homework is also quite important (17.9 wpm). It is encouraging that many of these factors are within the control of the school and the system, either by providing books, encouraging reading in the home, adhering to the no repeating policy, or supporting parents as they support children in reading.

Figure 5. Factors impacting oral reading fluency in Tigray



2. Amhara Region EGRA Scores

In this section, the Amhara regional scores on the Amharic EGRA assessment are presented. Figure 6 is a woreda-level map of the Amhara region, and Table 2 is a disaggregated table of EGRA scores by task and gender and grade. This table shows that there is a large difference between fidel identification fluency scores between Grade 2 (41.4 pm) and Grade 3 (54.2 pm). In other words, children are still learning the fidel (and fluency with the fidel, in particular) in Grade 3. Boys outperform girls in this comparison (as in all of the other tasks), but the gap is wider for boys in Grade 3, who seem to have differentiated themselves more from girls. This might be when the gender gap in results in Amhara begins to expand, during Grade 3. The phonemic awareness task scores show that children in both grades and of both genders are capable of splitting words up into their component fidel. In fact, this task seems to suffer from a topping-out effect. For familiar word reading, note that the average score is only 20 wpm in Grade 2, and then in Grade 3, the scores increase to 29.4 wpm. Compared to the fidel identification task, this is almost exactly one-half of the score for fidel identification. It might be that if children were more fluent at the fidel level, they would also be more fluent at the word level. When asked to decode new words, the average child could read 12.8 in Grade 2 and 18.3 in Grade 3, which is much less than the word naming fluency. Oral reading fluency levels are closer to word naming fluency levels (19.1 wpm in Grade 2 and 27.9 in Grade 3). Note that there appears not to be a gender gap in Grade 2, but there is a large one in Grade 3 (25.2 wpm for girls and 30.6 wpm for boys). In reading comprehension, arguably the most critical facet of reading, scores were 22.0% for Grade 2 and 35.3% for Grade 3. This is clearly lower than expected, given that listening comprehension scores were above 50% for both Grade 2 and Grade 3. The gap is significant between what an Amhara child can comprehend from listening and what that child can comprehend from reading.

Figure 6. Map of Amhara region

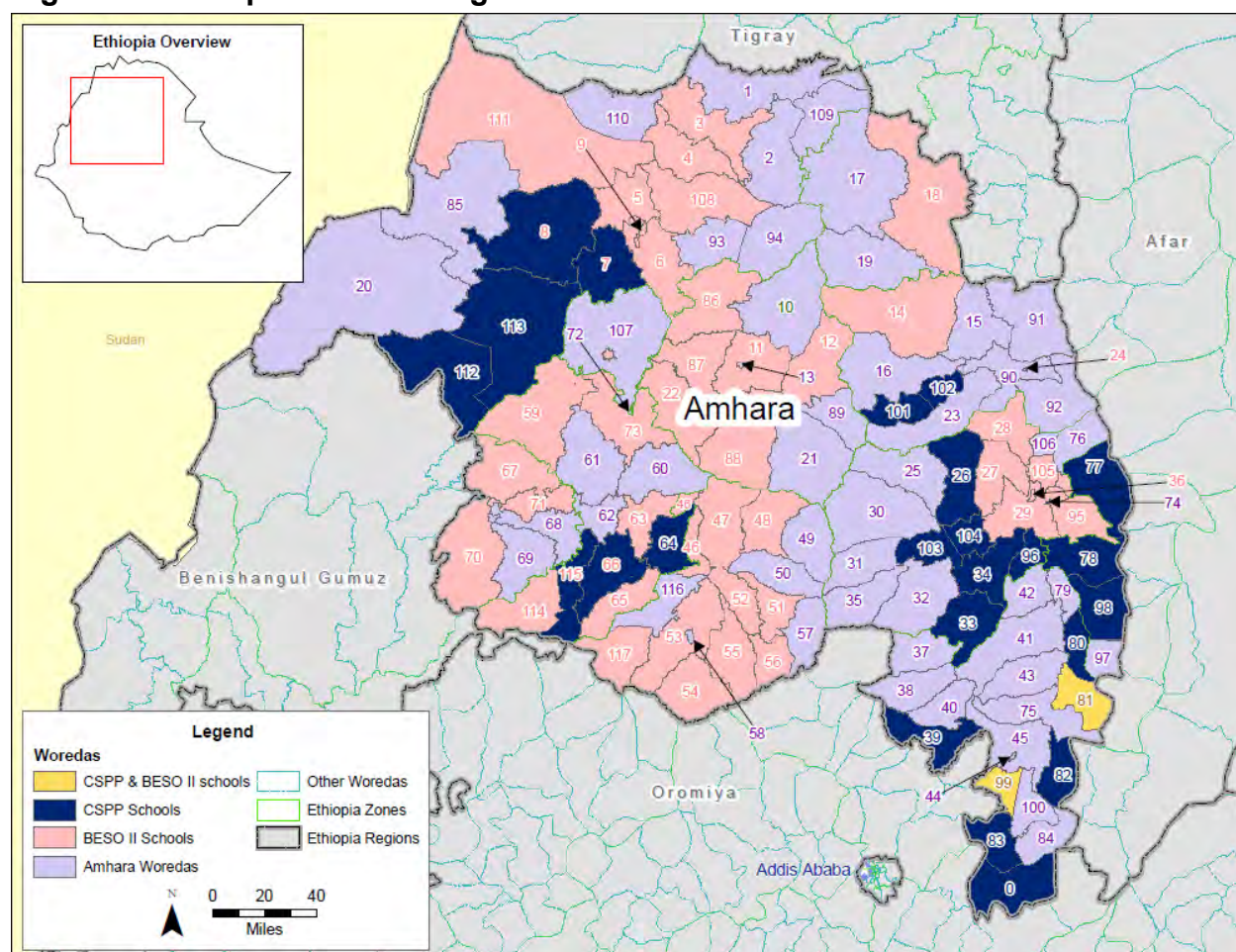


Table 2. EGRA scores in Amhara region

		Amhara EGRA Scores						
Task		Grade 2			Grade 3			Total
		Total	Female	Male	Total	Female	Male	
Amharic	Fidel Identification	41.4	40.6	42.3	54.2	50.2	58.2	47.7
	Phonemic Awareness	7.1	7.2	7.1	7.6	7.4	7.8	7.4
	Word Naming Fluency	20.2	19.5	20.8	29.4	26.9	31.9	24.7
	Unfamiliar Word Fluency	12.8	12.4	13.2	18.3	16.5	20.1	15.5
	Oral Reading Fluency	19.1	19.0	19.3	27.9	25.2	30.6	23.4
	Reading Comprehension	22.0	21.5	22.6	35.3	32.2	38.4	28.5
	Listening Comprehension	53.8	52.4	55.3	56.3	54.5	58.1	55.0
Zero Scores (%)	Word Naming Fluency	26.4	26.2	26.5	16.5	19.5	13.6	21.5
	Unfamiliar Word Fluency	36.2	36.9	35.4	25.1	29.0	21.1	30.7
	Oral Reading Fluency	27.5	26.8	28.1	17.0	19.3	14.7	22.3
	Reading Comprehension	49.0	51.4	46.5	30.4	35.2	25.5	39.9

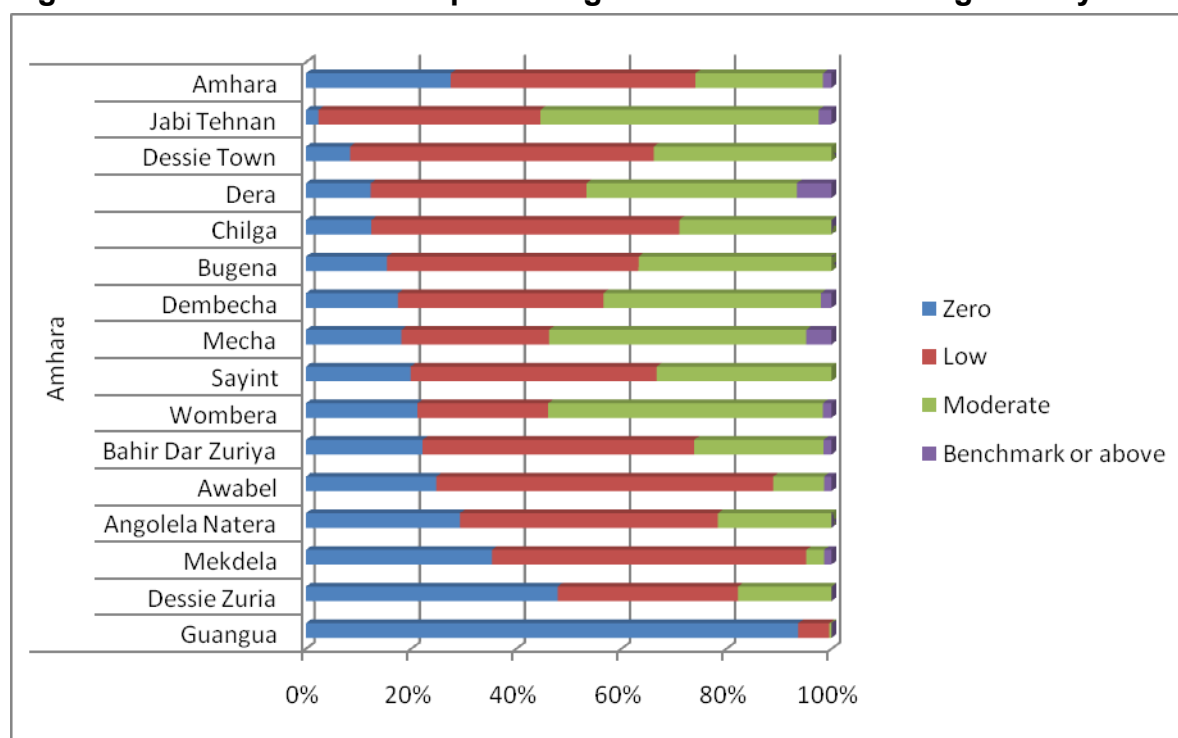
The bottom portion of Table 2 presents the percentage of children who scored zero on each of four reading tasks. It appears that at least 25% of Grade 2 children and nearly 20% of Grade 3 children are incapable of reading words in isolation, decoding new words, or reading words in

stories. The drop in zero scores between Grade 2 and Grade 3 is about 10% for each task, which means that during Grade 3, 10% of children move from complete nonreader to beginning reader. This is a high percentage and suggests that more needs to be done much earlier. With respect to comprehension, the zero scores show that half of Grade 2 children (49.0%) and one third of Grade 3 children (30.4%) do not comprehend what they read at all. This is a much higher result than expected.

In Figure 7, the percentage of children at particular reading levels is presented by woreda. The woreda with the fewest zero scorers (blue bar) is Jabi Tehnan, followed by Dessie Town and Dera. The woreda with the highest zero scorers is Guangua,² followed by Dessie Zuria. It is notable that there is such a wide gap in achievement between Dessie town and Dessie Zuria, and further research is necessary to determine why the gap exists at the size that it does. The largest number of children reaching 60 wpm or more is found in Dera and Mecha woredas, while Guangua, Sayint, Dessie Zuria, Chilga, and Bugena have very low numbers of children at those levels. In general, the percentage of children reading at the expected benchmark, even in the strongest woredas, is minimal. The highest percentages of children reading less than 30 wpm (blue and red bars together) are found in Guangua, Mekdela, and Awabel. The highest percentages of children reading more than 60 wpm (green and purple bars together) are in Wombera, Mecha, and Jabi Tehnan. It is clear, then, that woreda level differences within Amhara are enormous, and there are woredas with much stronger early reading programs than others. It also appears, however, that few woredas are able to produce the fluency levels expected for high levels of comprehension.

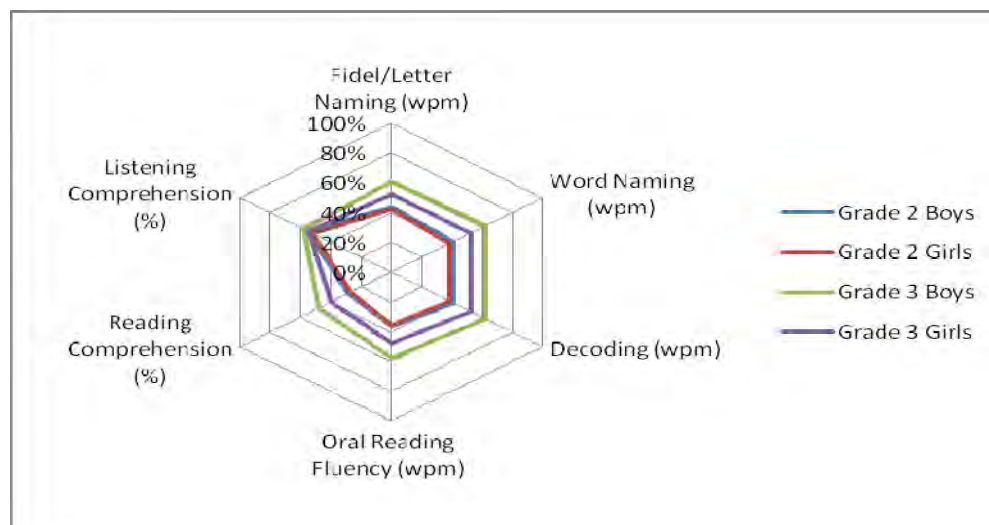
² Note that the likely reason for the low performance of children in Guangua is due to the transition from another language of instruction to Amharic at Grade 2 or 3. Since the language of instruction in these schools was Amharic, these schools were retained, with this explanation given for the low performance.

Figure 7. Amhara woreda percentage scores on oral reading fluency



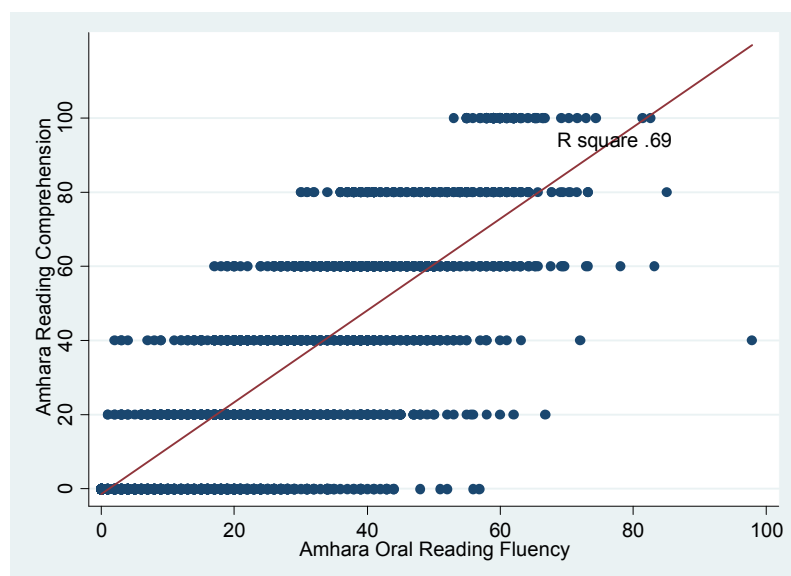
In Figure 8, we present the average scores by gender and grade for each task, compared against benchmarks from the Amhara region. This radial plot shows that the highest scores (and smallest gender and grade gaps) occur in listening comprehension. On the other hand, the lowest scores with the widest gaps occur in reading comprehension. There are not many differences in this metric between fidel naming, word naming, decoding, and oral reading fluency. All of these tasks had low scores, which likely contributes to the very low scores in reading comprehension. In short, much work with the fidel and words is necessary to limit the difference between listening and reading comprehension.

Figure 8. Radial plot for Grade 2 and Grade 3 boys and girls against Amhara benchmarks for six EGRA tasks



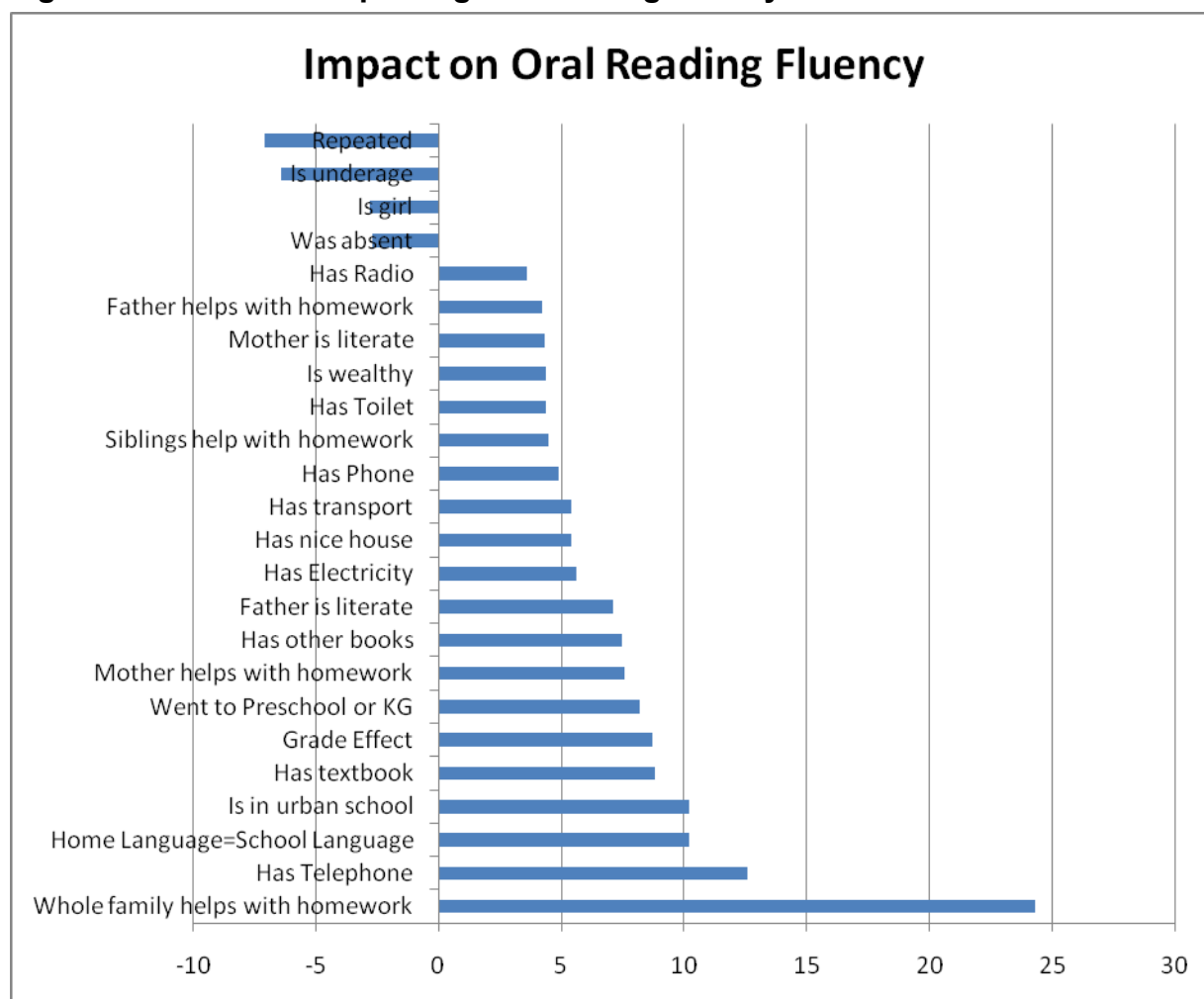
In Figure 9, Amhara oral reading fluency scores are presented against reading comprehension outcomes. While the analysis above shows that reading comprehension scores are low, on average, this figure shows that where oral reading fluency is high (above 60 wpm), reading comprehension scores are also quite high. Children who comprehend at 80% and 100% most often have reading fluency scores of at least 40 wpm up to 100 wpm. This shows that while reading comprehension scores appear quite low, this is large due to the fact that many children do not read fluently enough to allow for comprehension of the texts.

Figure 9. Amhara oral reading fluency against reading comprehension



In this portion of the analysis, the predictive factors at the student, family, and school levels are analyzed to determine what relationship the factors have with oral reading fluency outcome scores. Note that only statistically significant factors are presented here. It appears that repetition has a large impact on achievement (-7.1 wpm), as does being underage for grade (-6.4 wpm). Family factors, such as household wealth, parental literacy, and assistance with homework, all have the expected impact on achievement. In Amhara, having gone to preschool or KG increases oral reading fluency scores by 8.2 wpm, having the textbook increases the scores by 8.8 wpm, learning in the same language that you speak at home is related to a score of 10.2 wpm, and having other books increases the scores by 7.5 wpm. Having a family where the mother, father, and siblings assist with homework is related to a score of 24.3 wpm more on oral reading fluency. For the most part, other than the family background characteristics, these predictive factors are things that can be affected by the school and the educational system.

Figure 10. Factors impacting oral reading fluency in Amhara



3. Oromiya Region EGRA Scores

This section analyzes the scores from EGRA for the Oromiya region. Figure 11 presents a woreda-level map of the region, which would be one of the larger countries in sub-Saharan Africa if it was a stand alone country. Table 3 presents EGRA scores disaggregated by gender and grade. Note the consistent differences between genders, with males always outperforming females (except for listening and reading comprehension for Grade 3). For letter identification, is notable that the scores are slightly higher than what has been presented in other large regional states heretofore that use a Sabeen script. Children in Oromiya are slightly more fluent in letter identification than are children in Amhara or Tigray. Note that there is a large gain between Grades 2 and 3; it appears that some children are still learning the alphabet (or at least fluency with it) during Grade 3. There is a larger difference between Grades 2 and 3 in phonemic awareness skills in Oromiya than there was in the Sabeen script languages above. This appears to be because that skill is easily acquired in Sabeen script languages, while differentiating the first sound in a word is more difficult (and takes longer to master) in Afan Oromo. For word naming fluency, it is remarkable how much more fluent children are with letters than they are with words, reading nearly three times as many letters as words in Grade 3. The children in Oromiya, then, have marked difficulty in combining letters to make words; even amongst words that should already be familiar (i.e., these were the 50 most common occurring words in the Oromiya texts). Skills in unfamiliar word reading are meager, with Grade 2 and Grade 3 averages of 10.7 and 16.4, respectively. Oral reading fluency scores (20.9 wpm in Grade 2 and 33.4 wpm in Grade 3) are higher than might be expected given the low scores in word reading. This might indicate that the story was a bit easier than it should have been for the grade. These scores remain very low, though, and about one-third of the level they should be to ensure comprehension. This is evident when the comprehension scores are analyzed, with the average Grade 2 child only able to answer a bit more than 1 of 5 questions correctly. The average Grade 3 child could answer more than 2 out of 5. This is about one-third (for Grade 2) and one-half (for Grade 3) of the scores on listening comprehension. This means that children would understand much more of what they read if they could read it. Therefore, there seem to be three major gaps in Oromiya. First, children are struggling to identify their letters. Second, they have difficulty combining letters to make words. Third, they do not do well in determining the meaning of the words that they can read, likely because they read too slowly.

Figure 11. Map of Oromiya region

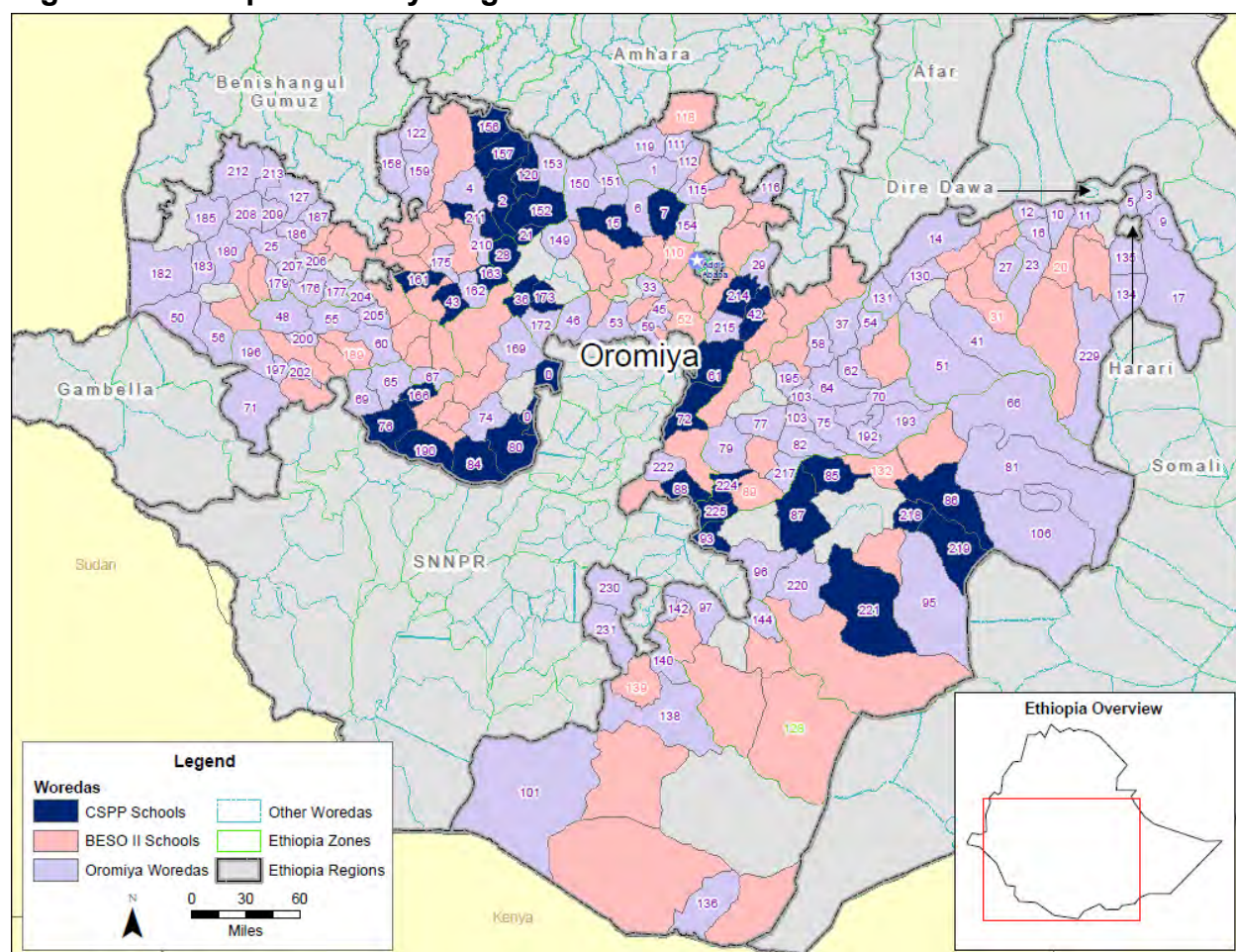


Table 3. EGRA scores in Oromiya region

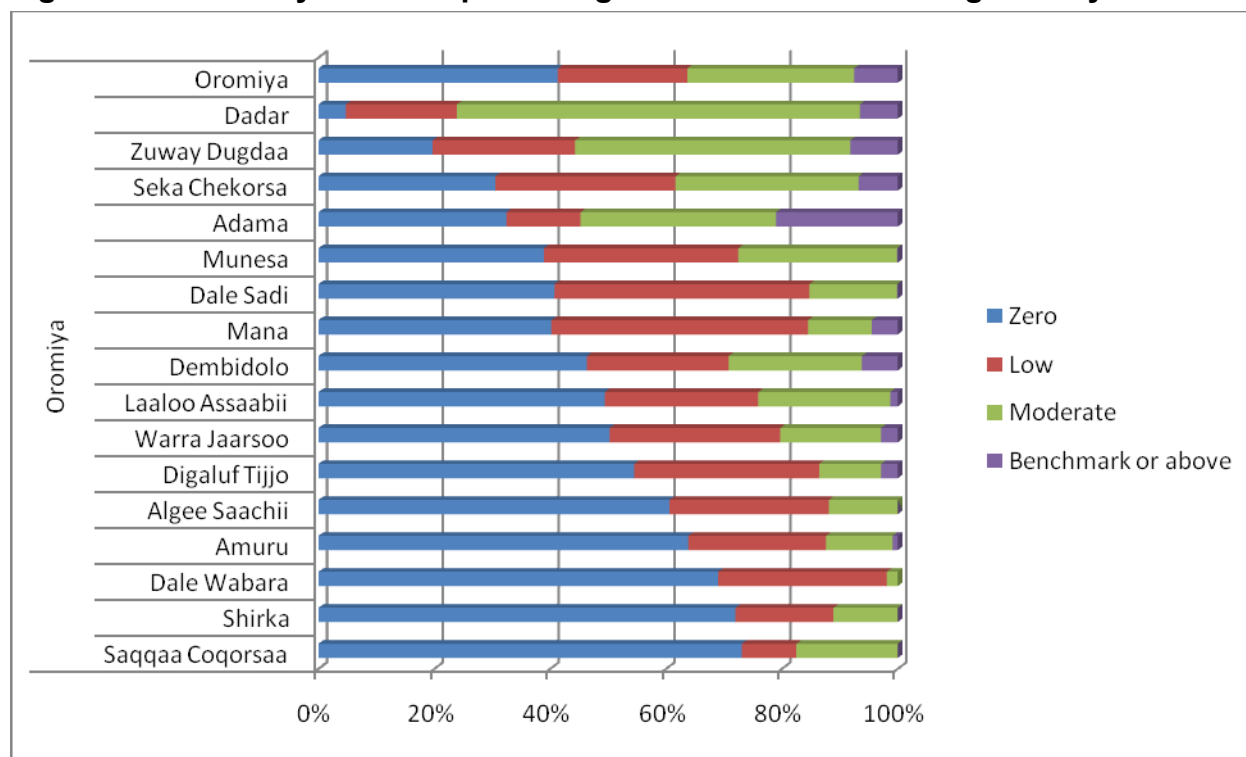
		Oromiya EGRA Scores					
Task		Grade 2			Grade 3		
		Total	Female	Male	Total	Female	Male
Afan Oromo	Letter Identification	44.8	43.7	46.0	59.1	58.0	60.2
	Phonemic Awareness	5.8	5.5	6.2	7.2	7.0	7.4
	Word Naming Fluency	16.7	16.5	17.0	26.4	25.7	27.1
	Unfamiliar Word Fluency	10.7	11.5	9.9	16.4	15.9	16.8
	Oral Reading Fluency	20.9	19.1	23.0	34.4	33.4	35.4
	Reading Comprehension	25.2	24.2	26.3	43.9	44.1	43.7
	Listening Comprehension	77.4	78.6	76.1	87.4	87.5	87.4
Zero Scores (%)	Word Naming Fluency	41.0	43.0	38.6	18.9	22.1	15.6
	Unfamiliar Word Fluency	48.0	47.7	48.3	25.5	26.9	24.0
	Oral Reading Fluency	41.2	43.6	38.4	20.6	23.1	17.9
	Reading Comprehension	47.0	49.5	44.1	24.7	27.7	21.5

The bottom part of Table 3 presents the zero scores for each grade. This is one of the most concerning portions of the Oromiya data analysis. It appears that 2 out of 5 children in Oromiya, at the end of Grade 2, have absolutely no ability to read common words, decode new words, or read words in stories. These same children, unsurprisingly, cannot understand what they did not

read. In Grade 3, that percentage drops by about half. That means that 20% of Oromiya children are barely entering the word stage in Grade 3, which is far too late, based on the Minimum Learning Competencies documents and the syllabus. A significant number of children seem to be in school, but not learning much while they are there.

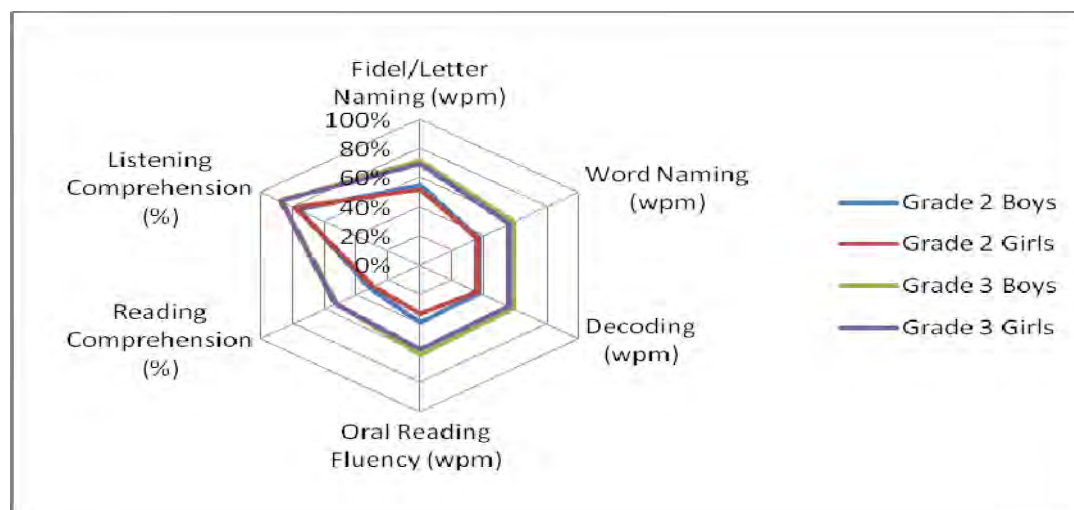
Figure 12 compares oral reading fluency scores by woreda, with particular attention to different levels of oral reading fluency. The woredas where more than 60% of children cannot read a single word (blue bars) are Saqqaa Coqorsaa, Shirka, Dale Wabara, and Amuru. The woredas with the lowest percentage of zero word readers are Dadar and Zuway Dugdaa, with Dadar significantly better. Adama, Zuway Dugdaa, Dadar, Dembidolo, and Seka Chekorsa have the largest percentages of children reading 60 wpm or better (purple bars). Note that only Adama has more than 20% of its readers above the benchmark, and most have very modest percentages. Dadar, Zuway Dugdaa, and Adama all have more than 50% of their children reading at least 30 wpm (green and purple bars together). On the other hand, Shirka, Dale Wabara, Amuru, Algee Saachii, and Digaluf Tijjo all have more than 80% of their children reading less than 30 wpm. This is highly problematic for their children. Adama is of particular interest, since it has 30% of children that are unable to read at all, and more than 20% that can read more than 60 wpm. It seems, therefore, to have a bifurcated population, some that cannot read at all, and others who read quite well. Adama is a unique woreda in that respect.

Figure 12. Oromiya woreda percentage scores on oral reading fluency



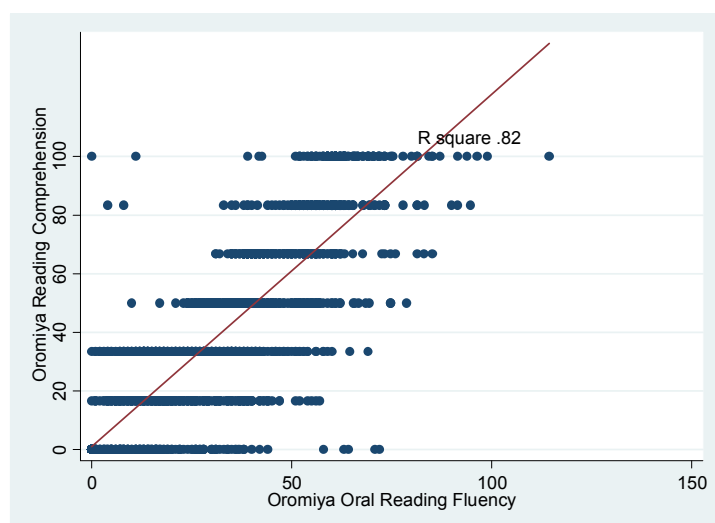
In Figure 13, the comparative performance of Oromiya's children on the subtasks is analyzed. It shows that while there is a grade gap, with Grade 3 outperforming Grade 2, the gender gap is minimal across the tasks. It also shows that children in both Grades 2 and 3 do quite well on the listening comprehension task. This is a stark difference when compared with the other reading tasks (i.e., letters, words, decoding, and oral reading fluency), where the performance of Grade 2 is 40% of the expected level, and for Grade 3, it is only 60%. The scores are lower on reading comprehension than on words, which shows that there is an additional problem of teaching children to understand what they are able to read.

Figure 13. Radial plot for Grade 2 and Grade 3 boys and girls against Oromiya benchmarks for six EGRA tasks



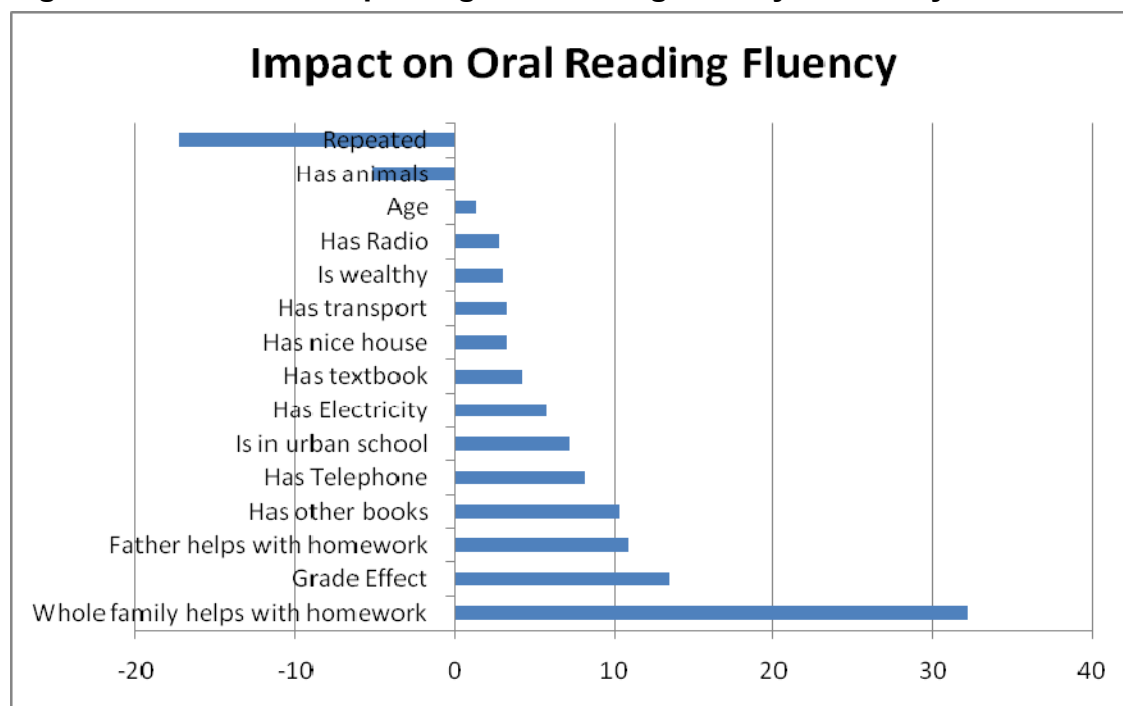
In Figure 14, Oromiya scores on oral reading fluency are compared with those on reading comprehension. The R square score is quite high (.82), which shows that most of the variation in comprehension can be explained by the variation in oral reading fluency. In other words, if one knows how a child does in reading fluency, we can predict with a great deal of accuracy how that child will do on the reading comprehension task. The problem, then, seems to be the low scores on reading fluency. Where children can read fluently (above 50/60 wpm), their reading comprehension scores are consistently 80% to 100%. The problem, simply, is that too few children can read with much fluency at all.

Figure 14. Oromiya oral reading fluency against reading comprehension



In Figure 15, several factors that are statistically significantly correlated with oral reading fluency outcomes are presented. Note that the impact of repeating is quite large (-17.3 wpm). Having animals is also a significant negative factor (-5.2 wpm), which likely is a proxy for urbanicity, which is also a positive predictor (7.2 wpm). Family background has an impact, as does having a textbook (4.3 wpm), having other reading materials (10.3 wpm), having the father help with homework (10.9 wpm), and having the whole family involved in homework (32.2 wpm).

Figure 15. Factors impacting oral reading fluency in Oromiya



4. Somali Region EGRA Scores

Figure 16 presents a woreda map of the Somali region, with a particular focus on the woredas in the EGRA study. Table 4 presents disaggregated EGRA scores for the Somali region.³ Note that boys consistently outperform girls, across all tasks and both grades. When examining the scores, it is immediately clear that the letter identification task was done relatively well, with the average letter fluency score at 45.3 pm in Grade 2 and 53.9 in Grade 3. The gap between Grade 2 and Grade 3 is slightly smaller than what has been found in other regions. Phonemic awareness scores are quite low, with an overall average of 4.4. There is no difference between scores in Grades 2 and 3, which suggests that this is not a skill that is taught in Grade 3. For word reading fluency, the gain between Grade 2 (16.5 wpm) and Grade 3 (19.9 wpm) is modest, meaning that the early gains in Grade 2 are not accelerating in Grade 3. Unlike all of the other regions, children perform better on unfamiliar word reading fluency (18.4 wpm) than on familiar word fluency (17.9). This is likely because the length of the unfamiliar words was shorter than that for familiar words. The oral reading fluency scores are higher than those of words and unfamiliar words (26.3 wpm). Reading comprehension scores were modest (30.4% in Grade 2 and 34.7% in Grade 3), and listening comprehension scores were decent (53.5% in Grade 2 and 51.3% in Grade 3). There seems to be not as large a gap between listening skills and reading skills in the sampled schools in the Somali region.

³ It is important to note that the sampling for Somali region was done differently for both RTI and IQPEP sub-samples due to the difficulty in accessing schools in Somali region during the period of the study (May and June 2010). The findings here, as a result, must be seen as an illustrative case study and cannot be extrapolated back to the entirety of Somali region.

Figure 16. Map of Somali region

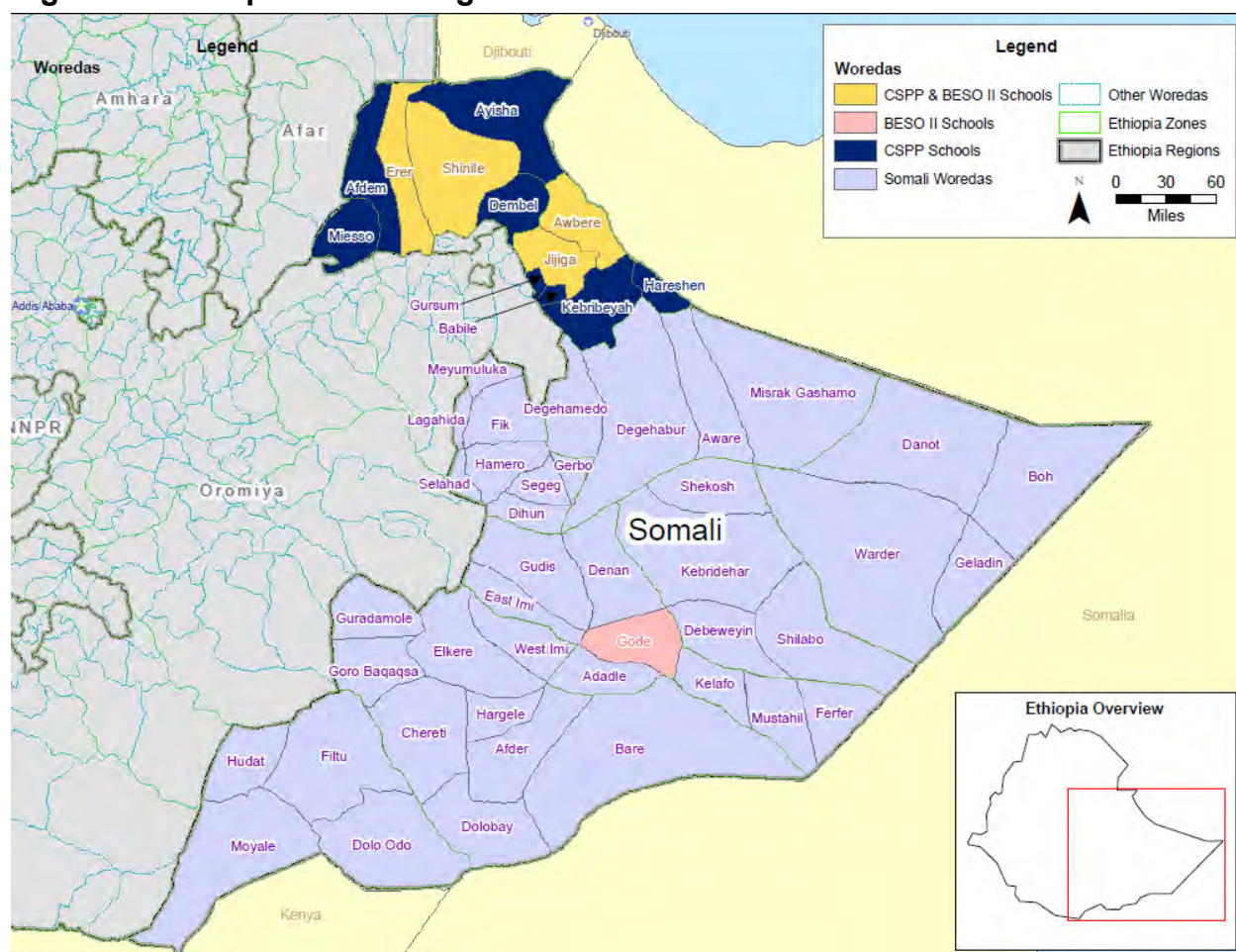


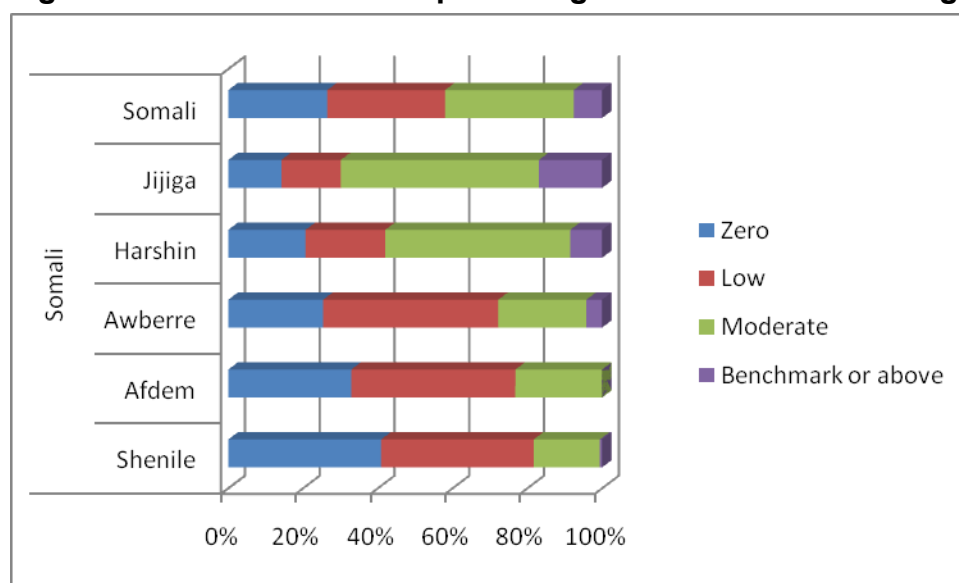
Table 4. EGRA scores in Somali region

		Somali EGRA Scores						
Task		Grade 2			Grade 3			Total
		Total	Female	Male	Total	Female	Male	
Somali	Letter Identification	45.3	41.0	48.6	53.9	48.1	58.9	49.0
	Phonemic Awareness	4.4	3.8	4.9	4.3	3.6	5.0	4.4
	Word Naming Fluency	16.5	16.1	16.8	19.9	17.5	21.9	17.9
	Unfamiliar Word Fluency	16.7	15.9	17.3	20.7	18.1	23.0	18.4
	Oral Reading Fluency	25.8	25.7	25.8	26.9	23.7	29.7	26.3
	Reading Comprehension	30.4	29.4	31.2	34.7	32.5	36.5	32.2
	Listening Comprehension	53.5	55.1	52.3	51.3	49.6	52.8	52.6
Zero Scores (%)	Word Naming Fluency	28.1	26.9	29.0	23.6	25.1	22.3	26.2
	Unfamiliar Word Fluency	27.3	27.6	27.1	20.2	22.2	18.5	24.3
	Oral Reading Fluency	26.5	23.7	28.7	21.4	21.5	21.3	24.3
	Reading Comprehension	33.3	30.1	35.6	28.8	26.7	30.6	31.4

With respect to zero scores, there are more than 25% of Grade 2 students and 20% of Grade 3 students who are total nonreaders in that they cannot read any words in isolation, cannot decode new words, and cannot read words in stories. This is a significant amount of each classroom and does not bode well for that group of children and their ability to further their education. Exactly one-third of Grade 2 children did not comprehend anything that they read, and just over one-quarter did not comprehend anything in Grade 3.

In Figure 17, the levels of oral reading fluency are compared across woredas. We find that the woredas with the highest percentage of zero scores (blue bars) are Afdem and Shenile, and the one with the lowest percentages is Jijiga. Jijiga also has the highest percentage of children reading at the 60 wpm benchmark (purple bar), while Afdem and Shenile have basically zero children at that level. While Jijiga and Harshin both have more than 60% of their children reading 30 wpm or higher (green and purple bars together), Awberre, Afdem, and Shenile each have just over 20% of their children at 30 wpm or higher. This region, then, seems to have a significant amount of woreda-level variation in reading outcomes.

Figure 17. Somali woreda percentage scores on oral reading fluency



In order to understand whether children in Somali are closer or farther from regionally developed benchmarks for particular subtasks of reading, Figure 18 investigates the average scores for boys and girls in Grade 2 and Grade 3 against the 90th percentile score in Somali. Note that the 90th percentile is still not at the expected level based on the Minimum Learning Competencies document or international experience. The interesting thing about this figure is that it shows how wide the gender gap is in Grade 3, with boys (green line) outperforming all other groups. In fact, Grade 3 girls are closer to Grade 2 achievement than they are to Grade 3 achievement. Note that the percentage scores are similar for letters, words, decoding, and oral reading fluency. The lowest percentages are in reading comprehension, and the highest is for listening comprehension, which is a consistent pattern in the Ethiopia EGRA data.

Figure 18. Radial plot for Grade 2 and Grade 3 boys and girls against Somali benchmarks for six EGRA tasks

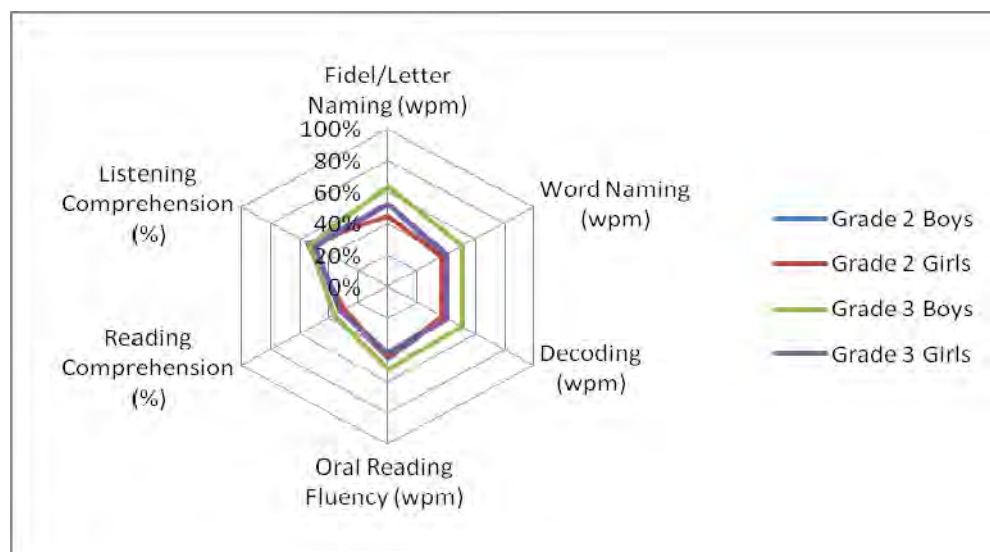
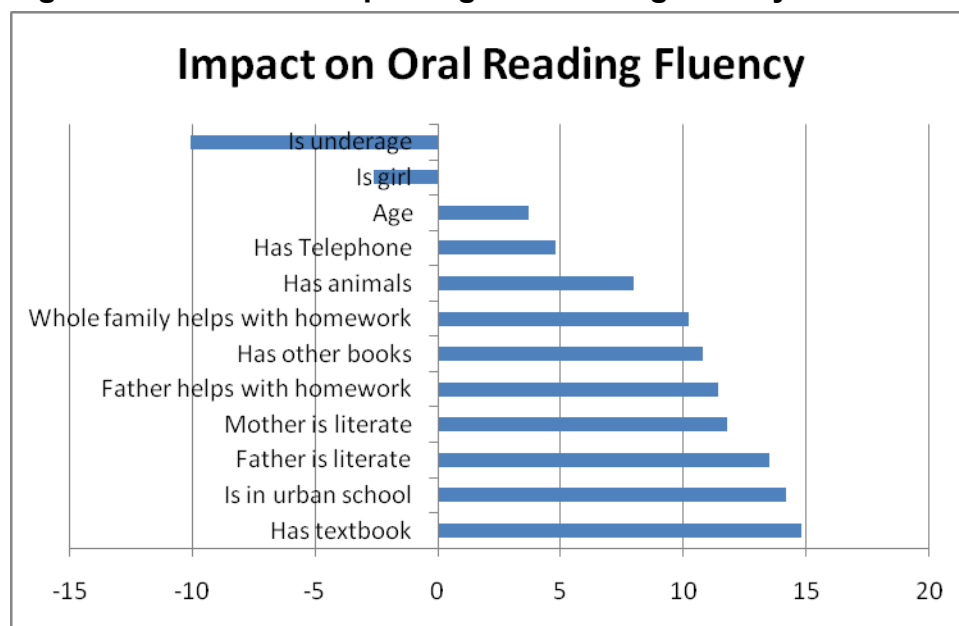


Figure 19 presents the factors that have significant relationships with oral reading fluency outcomes. Note that being underage is particularly problematic in Somali (-10.1 wpm). Unlike Oromiya, having animals is associated with higher reading fluency (8.0 wpm), and having parents who are literate is related with oral reading fluency by 11.4 wpm for fathers and 11.8 wpm for mothers. Having the textbook is absolutely critical and is correlated with 14.8 wpm in the Somali region.

Figure 19. Factors impacting oral reading fluency in Somali



5. Benishangul-Gumuz Region EGRA Scores

In Figure 20, the worded as in the Benishangul-Gumuz region are presented. Then, in Table 5, the disaggregated scores for the various subtasks of the EGRA are presented. Note that in Benishangul-Gumuz, girls consistently outscore boys, though the differences are not statistically significant. On the fidel identification task for the Amharic assessment given in Benishangul-Gumuz, Grade 2 children can read 29.2 letters in a minute, while Grade 3 children can read 46.1. This represents a significant increase between Grades 2 and 3 and shows that the majority of children in Benishangul-Gumuz are still learning the alphabet in Grade 3. Phonemic awareness scores are lower in this region than in others taking this task, which suggests that word reading might be more difficult than in other regions taking the Amharic task. Word naming fluency scores are approximately half as large as the fidel identification task, which suggests that identifying common words is yet another step that children in this region struggle with. Unfamiliar word fluency scores are quite low, with only 10.6 wpm in Grade 2 and 17.5 wpm in Grade 3. Oral reading fluency scores are closer to word naming fluency, but are actually slightly higher (16.6 wpm in Grade 2 and 27.7 wpm in Grade 3). This means that the oral reading fluency task might be slightly too easy for the level. Reading comprehension scores were very low, with the average Grade 2 student not able to answer 1 out of 5 questions correctly (17.7%) and the average Grade 3 student not able to answer 1.5 out of 5 questions correctly (30.9%). Listening comprehension scores are much higher (52.9% in Grade 2 and 57.3% in Grade 3). This suggests that while children have skills in listening and oral language, they have more difficulty in understanding what they read.

Figure 20. Map of Benishangul-Gumuz region

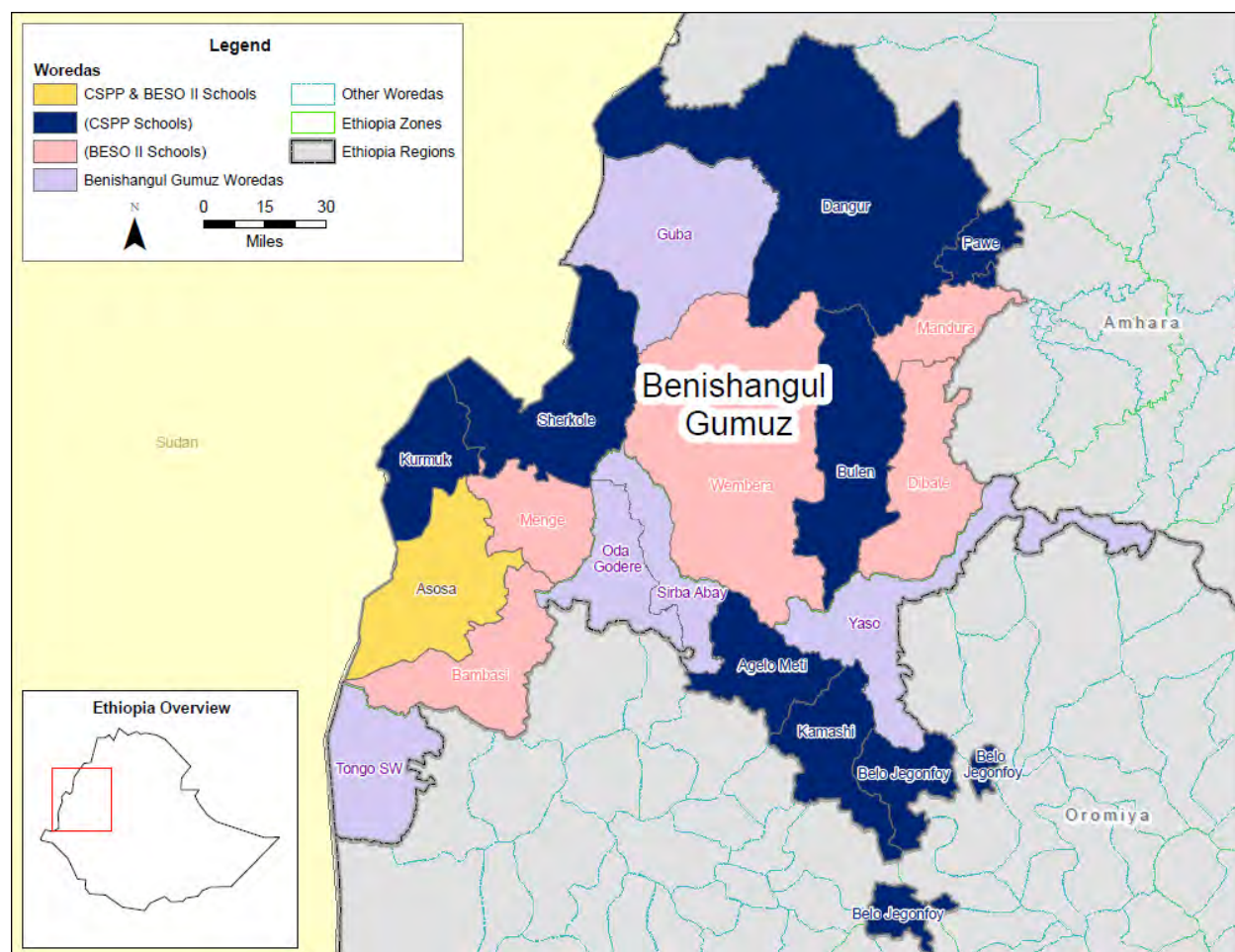


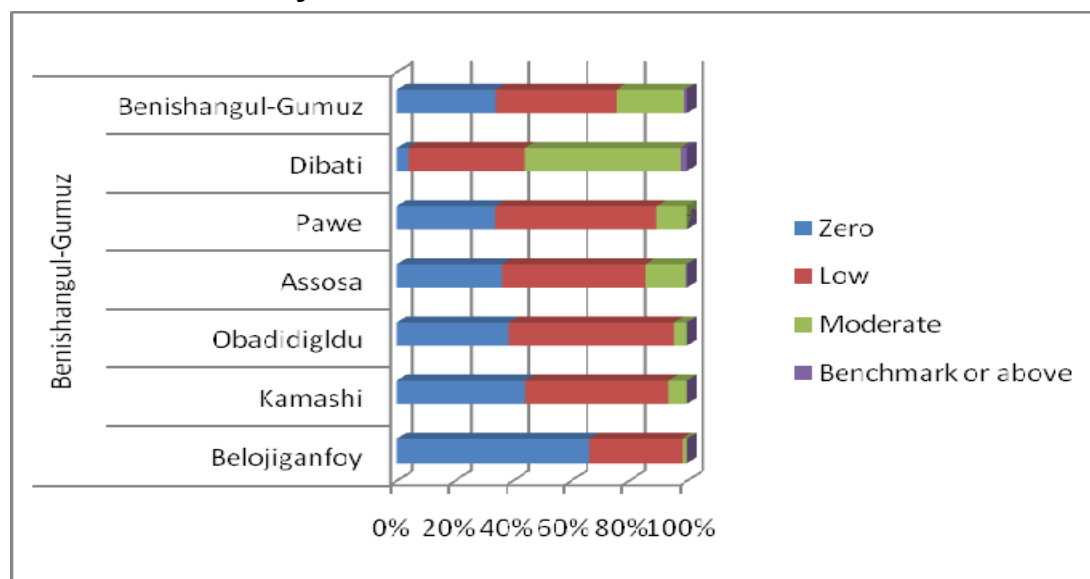
Table 5. EGRA scores in Benishangul-Gumuz region

Benishangul-Gumuz EGRA Scores								
Task		Grade 2			Grade 3			Total
		Total	Female	Male	Total	Female	Male	
Amharic	Fidel Identification	29.2	30.2	28.1	46.1	48.1	44.2	37.5
	Phonemic Awareness	5.4	5.9	4.9	6.8	7.0	6.7	6.1
	Word Naming Fluency	14.8	14.5	15.1	25.4	26.9	24.0	20.0
	Unfamiliar Word Fluency	10.6	10.4	10.7	17.5	19.0	16.0	14.0
	Oral Reading Fluency	16.6	17.7	15.4	27.7	28.5	26.9	22.0
	Reading Comprehension	17.7	18.7	16.7	30.9	31.1	30.8	24.2
	Listening Comprehension	52.9	52.3	53.5	57.3	57.7	56.9	55.1
Zero Scores (%)	Word Naming Fluency	38.2	34.1	42.5	18.9	20.4	17.5	28.7
	Unfamiliar Word Fluency	44.4	40.1	48.9	28.7	29.0	28.5	36.7
	Oral Reading Fluency	33.7	31.5	36.0	14.9	18.6	11.2	24.4
	Reading Comprehension	54.0	48.7	59.5	32.3	31.1	33.5	43.3

When analyzing the zero score data at the bottom of Table 5, it is apparent that a very large percentage of Benishangul-Gumuz children are nonreaders. 38.2% of Grade 2 children scored zero on familiar word naming fluency, 44.4% on unfamiliar word fluency, and 33.7% on oral reading fluency. This suggests that between one-third and two-fifths of children are not at the word, decoding, sentence, or story level. The percentages are much less at Grade 3, which suggests that there is some reading instruction going on in Grade 3. Reading comprehension zero scores are 54.0% in Grade 2 and 32.3% in Grade 3.

Figure 21 presents the levels of reading scores for the different woredas in the region. Kamashi and Belojiganfoy both have zero scores over 40% (blue bars), while Dibati has the fewest zero scores. None of the woredas have significant percentages of children above the benchmark of 60 wpm. Belojiganfoy, Kamashi, and Obadidigldu woredas all have more than 90% of their children scoring 30 wpm or less. On the other hand, Dibati woreda has 60% of its children reading 30 wpm or more.

Figure 21. Benishangul-Gumuz woreda percentage scores on oral reading fluency



The following radial plot, Figure 22, shows the percentage scores for each group of children (Grade 2 and Grade 3 boys and girls) against the regional benchmarks. Note that for Grade 3 in particular, girls outperform boys, while modestly so in Grade 2. The gap between Grades 2 and 3 is very large for most of these tasks. For Grade 2, the scores are skewed toward listening comprehension, with average scores much higher for listening than the other tasks. For Grade 3, similar to other regions, the reading comprehension scores are the lowest.

Figure 22. Radial plot for Grade 2 and Grade 3 boys and girls against Benishangul-Gumuz benchmarks for six EGRA tasks

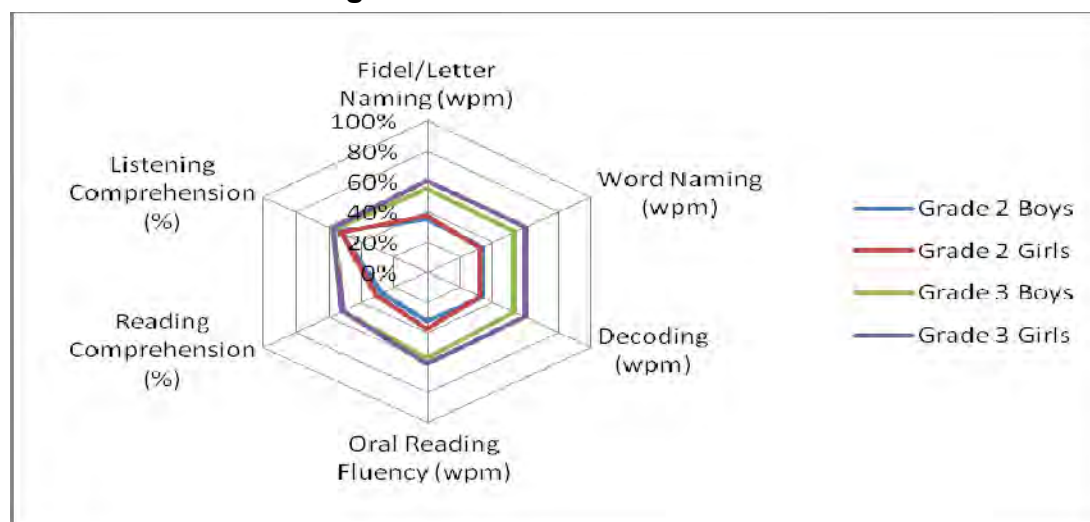
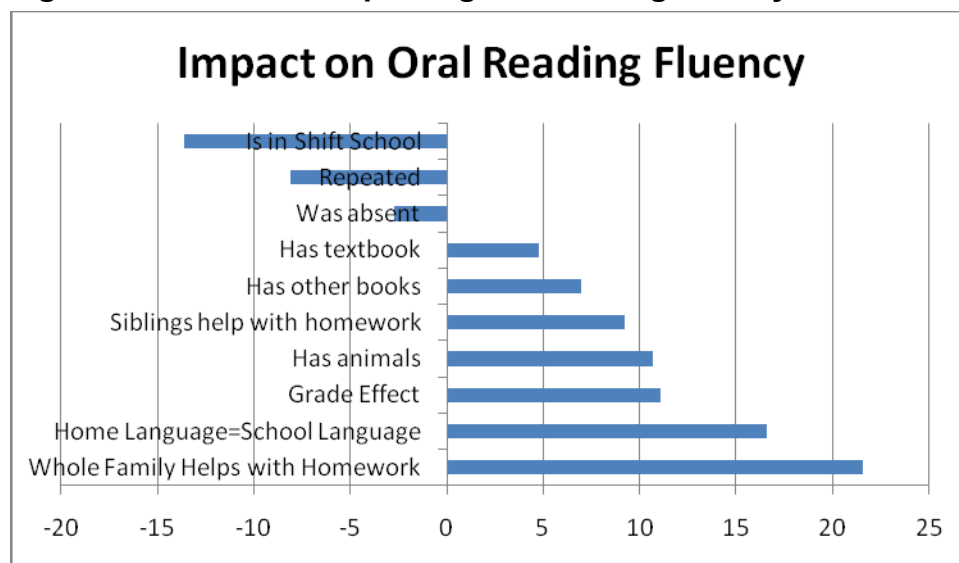


Figure 23 presents predictive factors and their relationship with oral reading fluency in the Benishangul-Gumuz region. Unlike other regions, this data shows a strong negative relationship

between being in a shift school, particularly the afternoon sessions, of -13.6 wpm. Repeating a grade also is related with fluency by 8.1 wpm. Having other books is a significant positive predictor (7.0 wpm), as is having the textbook (4.8 wpm). Having animals is a positive predictor in this region. With respect to policy, if children learn in the same language that they speak at home, their scores are 16.6 wpm higher.

Figure 23. Factors impacting oral reading fluency in Benishangul-Gumuz



6. Sidama Zone EGRA Scores

In Figure 24, the woredas of Sidama zone in Southern Nations, Nationalities, and People's Region (SNNPR) are shown. Note that the sample in this EGRA study comes from woredas in the Sidama zone in particular. Table 6 shows the average scores for each disaggregated group, by grade and gender. The gap between females and males in the Sidama zone is consistently quite large. The improvements between Grade 2 and Grade 3 are also quite large, meaning that children are improving in Grade 3. Letter identification scores are quite low for a Latin alphabet, with an average score of 28.3 for Grade 2 and 39.6 for Grade 3. Phonemic awareness scores are closely centered on 5 out of 10, with small differences between Grades 2 and 3. For word naming fluency, average wpm are 7.5 for Grade 2 and 12.3 for Grade 3. This is quite low and means that a significant percentage of children are unable to read any words at all. The same is true for unfamiliar word fluency (5.2 in Grade 2 and 9.1 in Grade 3). For oral reading fluency, scores are 6.8 wpm and 9.9 wpm for Grade 2 and Grade 3, respectively. This is extremely low, for an average. With respect to reading comprehension, scores are also very low for both Grade 2 (9.5%) and Grade 3 (13.7%). On the other hand, listening comprehension scores are much higher (46.2% in Grade 2 and 54.2% in Grade 3). The gap between listening and reading comprehension outcomes is very concerning. In the area of zero scores, it appears that two-thirds of the Grade 2 children in the Sidama zone are not capable of reading

words in isolation, decode new words, or read words in stories. The percentage drops to nearly one-half in Grade 3, but these are dismal percentages.

Figure 24. Map of SNNP region, including Sidama zone

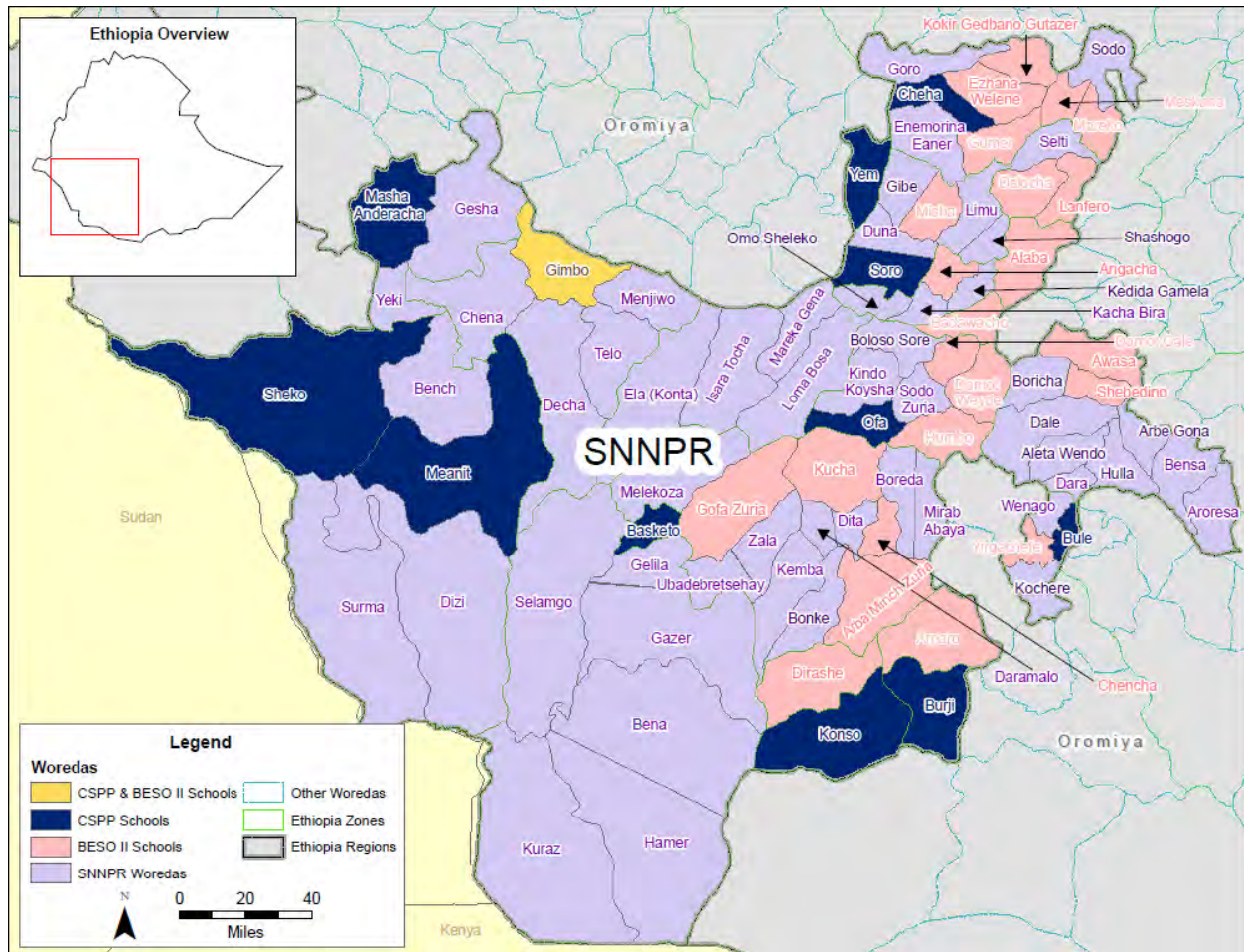
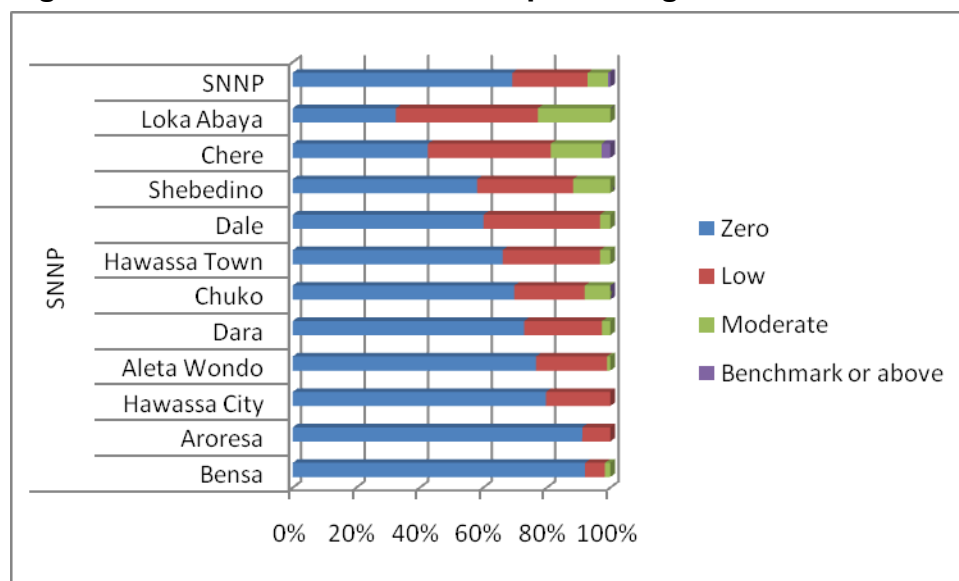


Table 6. EGRA scores in Sidama zone (SNNP region)

Sidama zone SNNPR EGRA Scores								
Task		Grade 2			Grade 3			Total
		Total	Female	Male	Total	Female	Male	
Sidamigna	Letter Identification	28.3	23.8	32.7	39.6	34.0	45.3	33.8
	Phonemic Awareness	4.7	4.2	5.2	5.9	5.6	6.2	5.3
	Word Naming Fluency	7.5	4.5	10.5	12.3	10.4	14.2	9.9
	Unfamiliar Word Fluency	5.2	3.1	7.2	9.1	7.5	10.6	7.1
	Oral Reading Fluency	6.8	3.5	10.0	9.9	8.3	11.5	8.3
	Reading Comprehension	9.5	5.7	13.2	13.7	12.0	15.5	11.6
	Listening Comprehension	46.2	44.9	47.4	54.2	51.0	57.4	50.1
Zero Scores (%)	Word Naming Fluency	62.0	69.6	54.7	44.7	53.0	36.4	53.6
	Unfamiliar Word Fluency	66.9	72.4	61.6	47.7	57.8	37.8	57.8
	Oral Reading Fluency	69.2	78.6	60.1	54.0	63.6	44.3	61.8
	Reading Comprehension	72.8	82.1	63.8	61.8	67.8	55.8	67.5

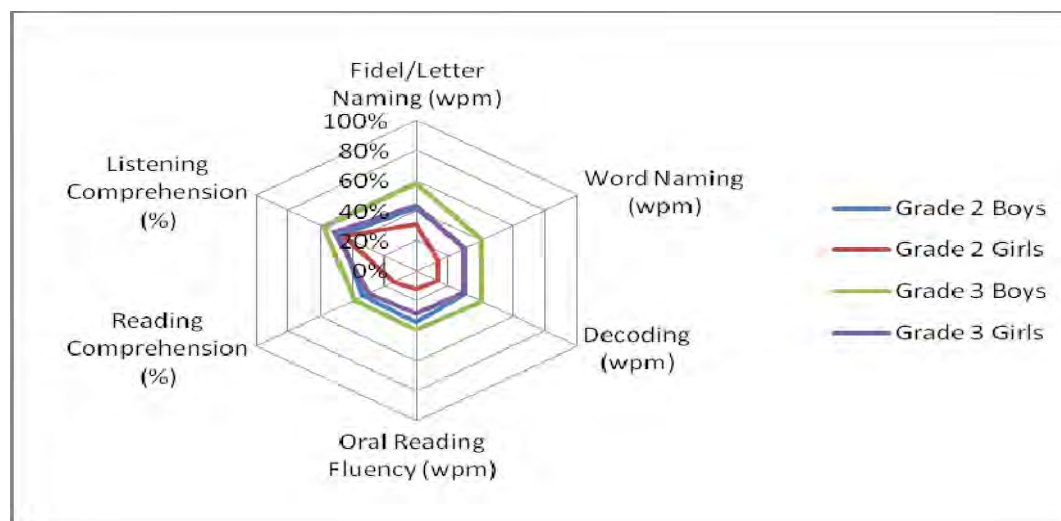
The levels of oral reading fluency scores are presented in Figure 25. Loka Abaya has the fewest zero scores (blue bar), and Bensa and Aroresa have the most. Chere has the highest percentage of children reading 60 wpm or more (purple bar), and many of the other woredas have zero. Only Loka Abaya and Chere have more than 20% of their children reading 30 wpm or more. Dale, Hawassa Town, Chuko, Dara, Aleta Wondo, Hawassa City, Aroresa, and Bensa all have less than 10% of their children reading 30 wpm or more.

Figure 25. Sidama zone woreda percentage scores on oral reading fluency



In the radial plot shown in Figure 26, the performance of girls and boys in Grades 2 and 3 is compared against benchmarks. These benchmarks were derived from the 90th percentile scores in the Sidama zone, and are likely too low to serve as benchmarks in the future. However, until the Ministry of Education and the Regional Education Bureaus devise more reasonable benchmarks, these can be used. Note that Grade 2 girls (red line) stand alone in their low performance, significantly far from Grade 2 boys (blue line). Moreover, Grade 2 boys (blue line) score approximately the same on the EGRA tasks as do Grade 3 girls (purple line). This means that Grade 3 boys (green line) significantly outperform the other groups on all tasks. Notably, the average performance on each of the six tasks is below 40% of the benchmark for all four groups. In short, there is a real crisis of Sidamigna educational reading performance identified in the Sidama zone.

Figure 26. Radial plot for Grade 2 and Grade 3 boys and girls against Sidama zone benchmarks for six EGRA tasks



In Figure 27, the factors that have a statistically significant relationship with oral reading fluency in the Sidama zone are presented. Note that the effects are much smaller given that scores in oral reading fluency are lower in the Sidama zone than in the other regions. The grade effect, for example, is only 3.1 wpm. The findings show that for every 10 animals a child's family has, their score is higher by 3.7 wpm. Having other books has an effect of 5.7 wpm, having the textbook increases scores by 6.9 wpm, and speaking the same language at home that is spoken at school is related with 8.1 wpm. As in many other regions, having the entire family help with homework (i.e., mother, father and siblings) is correlated with 12.0 more wpm.

Figure 27. Factors impacting oral reading fluency in Sidama zone

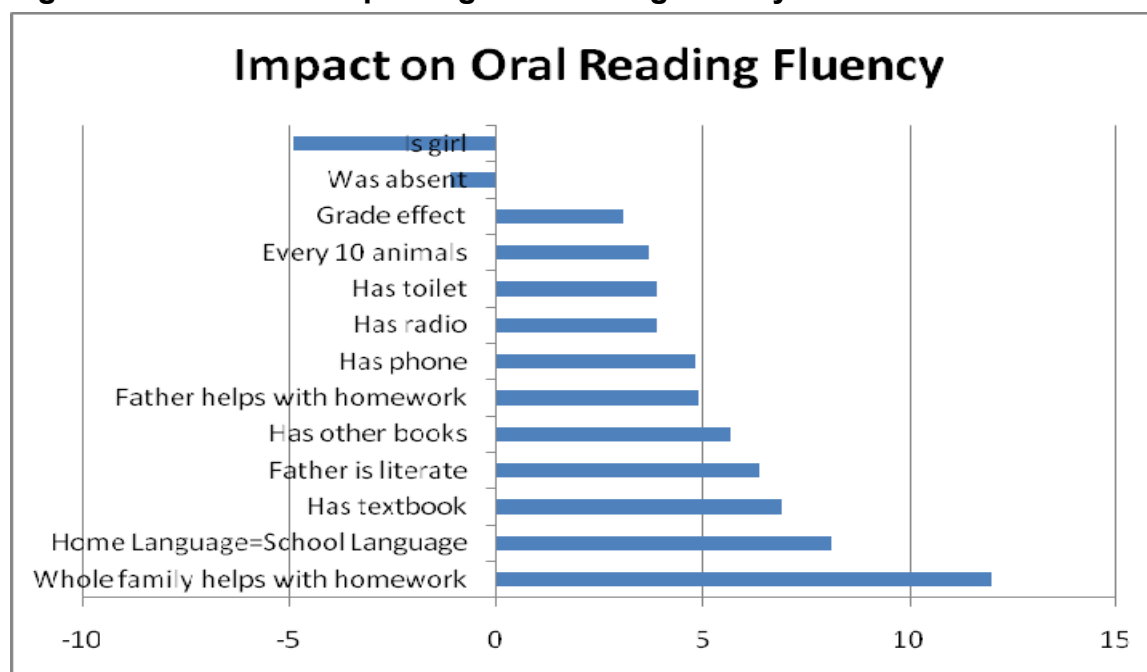
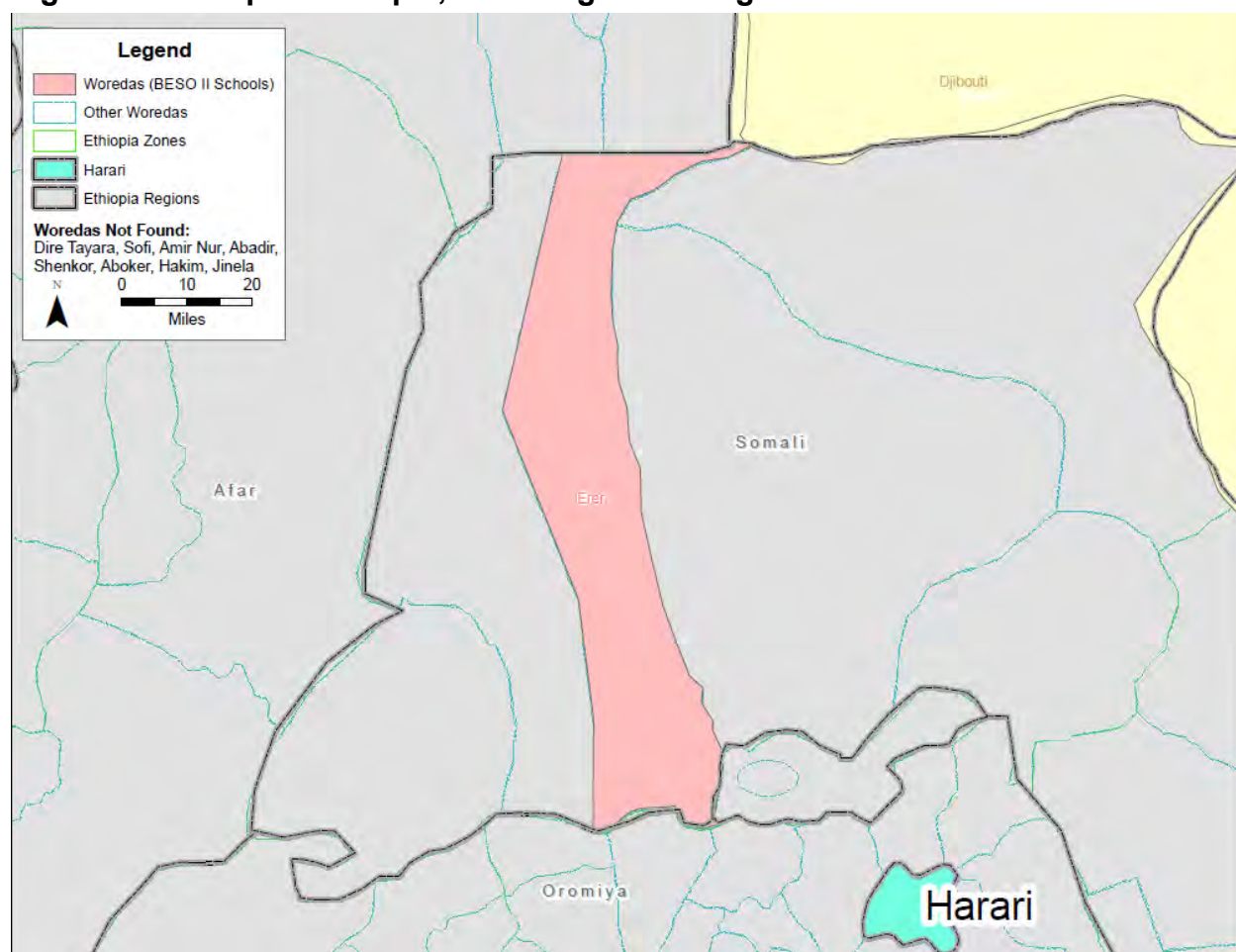


Figure 28. Map of Ethiopia, including Harari region



7. Harari Region EGRA scores

In Table 7, EGRA scores disaggregated by grade and gender are presented. Across the table, it is clear that girls in the Harari region outperform boys, across each metric, save Grade 3 listening comprehension. Note that this table includes scores from all three languages taught in Harari's schools; therefore, it can only provide general information on the quality of reading skills in Harari because the languages are of quite different structures. That said, it appears that children in Harari do well in letter identification (69.9 wpm in Grade 2 and 81.3 wpm in Grade 3). Word naming fluency is also decent, with averages of 33.3 wpm and 44.3 wpm; and oral reading fluency scores are reasonable, at 30.4 wpm and 42.6 wpm in Grades 2 and 3, respectively. For reading comprehension, however, scores remain low, even in Grade 3, where average scores were only 47.5% correct. Though scores in Harari seem higher than the other, larger regions, there are still significant percentages of children that are largely illiterate. In Grade 2, 18.1% scored zero on oral reading fluency and 31.5% in reading comprehension. Even in Grade 3, 17.3% scored zero on unfamiliar word reading and 18.3% in reading comprehension. There

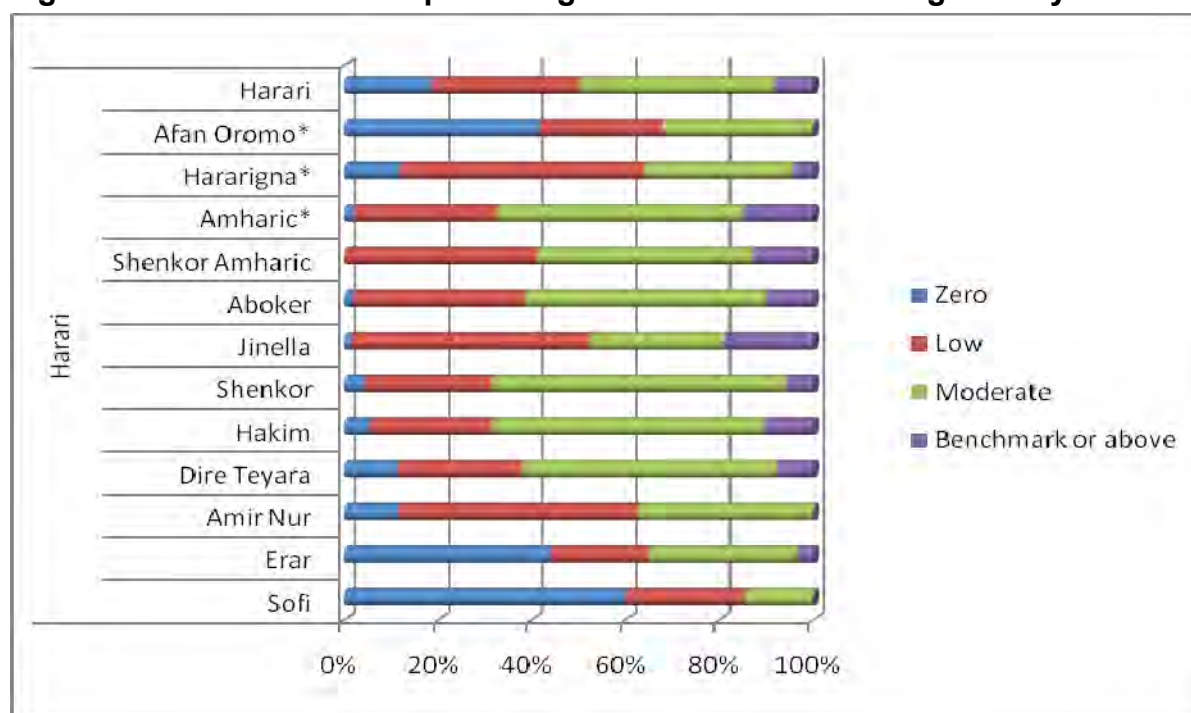
remain significant proportions of children who have not yet gained the expected levels of reading fluency and comprehension.

Table 7. EGRA scores in Harari region

		Harari EGRA Scores					
Task		Grade 2			Grade 3		
		Total	Female	Male	Total	Female	Male
Hararigna	Letter Identification	69.9	75.0	65.2	81.3	83.0	79.8
	Phonemic Awareness	6.9	7.3	6.6	8.2	8.2	8.2
	Word Naming Fluency	33.3	36.8	30.0	44.3	46.3	42.5
	Unfamiliar Word Fluency	20.2	23.2	17.5	25.6	26.0	25.2
	Oral Reading Fluency	30.4	34.0	26.9	42.6	44.0	41.3
	Reading Comprehension	32.4	35.8	29.2	47.5	50.5	45.0
	Listening Comprehension	64.8	65.0	64.7	73.1	70.9	75.0
Zero Scores (%)	Word Naming Fluency	16.3	15.4	17.1	7.1	9.3	5.3
	Unfamiliar Word Fluency	23.5	18.0	28.8	15.4	17.3	13.8
	Oral Reading Fluency	18.1	16.3	19.8	8.8	9.6	8.1
	Reading Comprehension	31.5	27.3	35.4	17.3	18.3	16.4

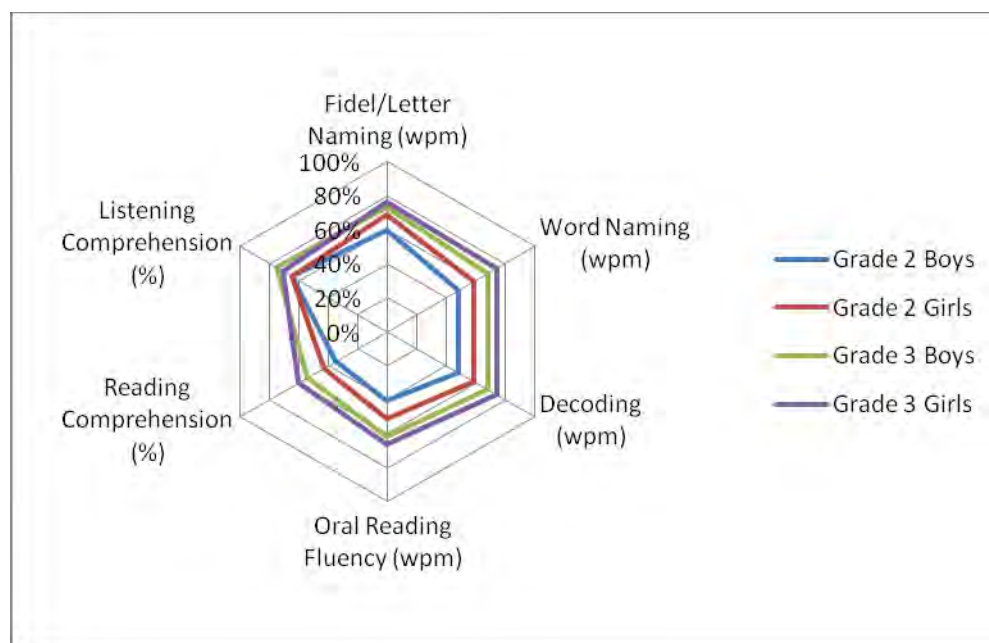
In Figure 29, the levels of oral reading fluency are presented for each woreda. In addition, the average levels for the Afan Oromo, Hararigna, and Amharic schools are presented as well. These are the 2nd through 4th bars. Note that zero scores in Afan Oromo schools are nearly 40%, while zero scores in Hararigna and Amharic schools are less than 10% and nearly 0%, respectively. Looking at it another way, nearly 70% of Amharic-learning children read 30 wpm or more, while less than 40% of Hararigna children read as well as Afan Oromo learning children. These findings suggest that the educational system in Harari is differentiated by language, with children in Amharic and Hararigna schools doing much better than children in Afan Oromo schools. Note that when examined at the woreda level, the differences are also quite significant. In Sofi, zero scores are nearly 60%, and in Erar, they are over 40%. On the other hand, zero scores in Aboker, Jinella, Shenkor, and Hakim are nearly zero. In Shenkor and Hakim, nearly 70% of children read 30 wpm, while in Sofi, less than 20% can read at that level.

Figure 29. Harari woreda percentage scores on oral reading fluency



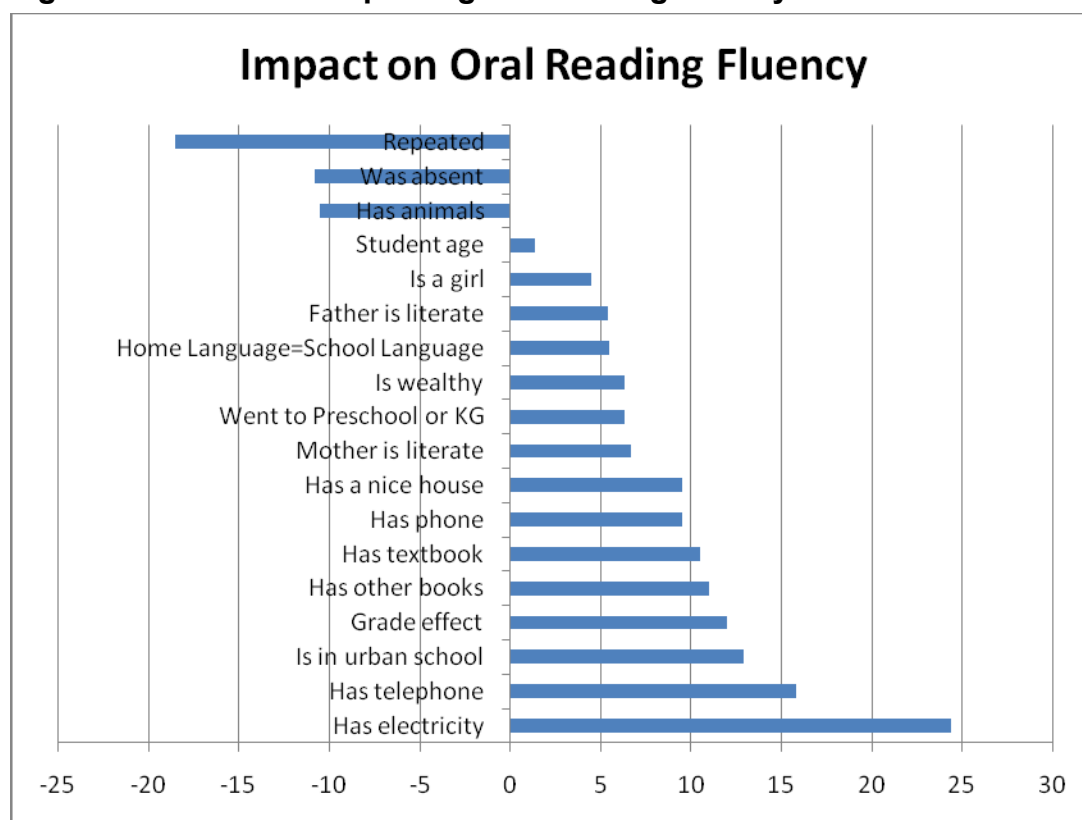
In Figure 30, the average scores by gender and grade are presented. It is obvious that Grade 3 girls (purple line) outscore all others, particularly Grade 3 boys (green line), in most tasks. Similarly, Grade 2 girls (red line) do better than Grade 2 boys (blue line). As in many other regions, scores are highest in listening comprehension and lowest in reading comprehension, across grade and gender. Decoding scores, aggregated across languages, seem to be closer to the regional benchmark in Harari than in other regions.

Figure 30. Radial plot for Grade 2 and Grade 3 boys and girls against Harari benchmarks for six EGRA tasks



In order to investigate what factors are predictive of oral reading fluency in Harari, Figure 31 presents the statistically significant predictors and their relationship with oral reading fluency. In Harari, repetition is negatively correlated (-18.5 wpm), as is having animals (-10.5 wpm). Note that this variable might be a differentiator between children who learn in Amharic or Hararigna (closer to the urban center) from those in the rural part of Harari (potentially learning in Afan Oromo). Having a match between home and school language is positively correlated (5.5 wpm), as is preschool or KG attendance (6.3 wpm). Having the school textbook (10.5 wpm) and having other reading materials (11.0 wpm) also matter quite a bit, as do other variables that might differentiate between rural and urban children (e.g., electricity, urban school, phone, nice house). It appears that Harari is one of the most differentiated regions in this study, with very different experiences occurring for children in the same region. That said, it should be noted that along with the Addis Ababa region, scores in the Harari region are the highest in the sample.

Figure 31. Factors impacting oral reading fluency in Harari



8. Addis Ababa Region EGRA Scores

In Figure 32, the map includes the sub-cities for the Addis Ababa region. Table 8 presents the disaggregated EGRA scores for Grades 2 and 3 and boys and girls. In most respects, Addis Ababa's scores are the highest (at least for those regions using Amharic). In general, there are only modest differences between males and females in Addis Ababa, with the advantage fluctuating between genders. Fidel identification scores are reasonably high for both Grade 2 (67.0 pm) and Grade 3 (84.5 pm). Note, once again, that scores are much higher in Grade 3, which means children are still improving on their ability to identify letters in the third grade. For phonemic awareness, the task did not perform that well in Addis Ababa, and many children topped out at 10 questions correct out of 10. For familiar word fluency, the average child in Addis Ababa can read 38.2 wpm in Grade 2 and 53.8 wpm in Grade 3, much higher than the scores in other Amharic speaking regions. Unfamiliar word fluency scores are significantly less, at 21.7 and 28.2 wpm for Grades 2 and 3, respectively. With respect to oral reading fluency, the scores are closer to those of familiar word fluency than to unfamiliar word fluency (34.5 in Grade 2 and 46.9 in Grade 3). It is plausible that students are not taught to read using decoding skills that might more rapidly increase their oral reading fluency outcomes. Reading comprehension scores are less than what might be expected given the fluency scores, with 37.2% for Grade 2 and 49.7% for Grade 3. This might be something that could be improved upon with more specific instruction on comprehension strategies. With respect to zero scores, it is clear that Addis Ababa has the lowest percentage of zero scores in the sample. That said, 8.7% of word naming fluency, 18.4% of unfamiliar word fluency, 10.1% of oral reading fluency, and 24.1% of reading comprehension assessments in Grade 2 were still zero.

Figure 32. Map of Addis Ababa region city administration



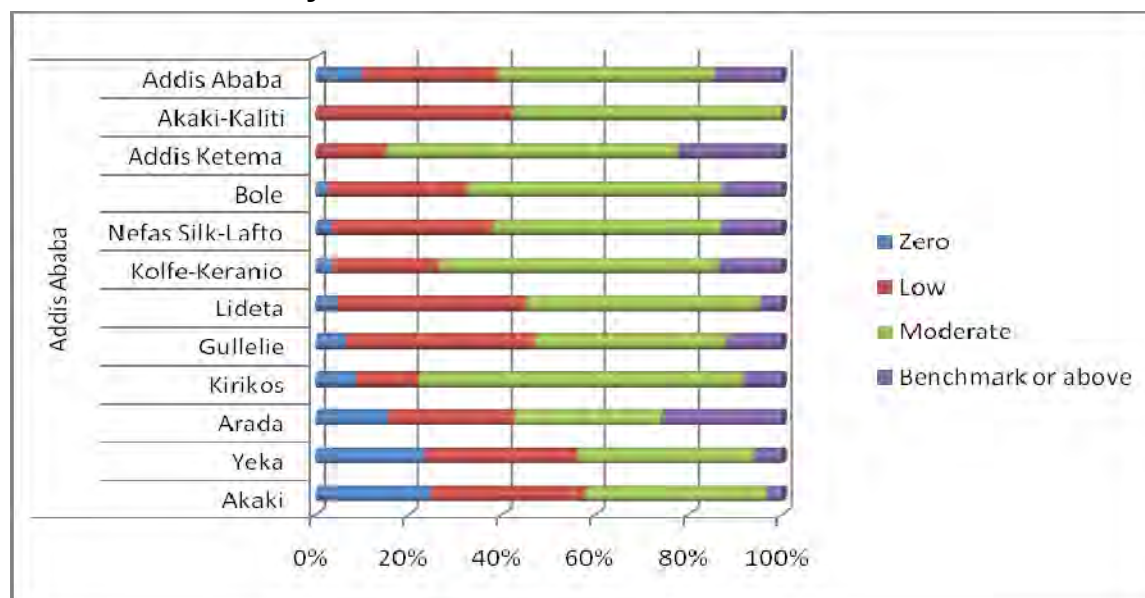
Table 8. EGRA scores in Addis Ababa region

Addis Ababa EGRA Scores								
Task		Grade 2			Grade 3			Total
		Total	Female	Male	Total	Female	Male	
Amharic	Fidel Identification	67.0	65.4	69.2	84.5	86.4	82.0	76.1
	Phonemic Awareness	8.0	8.0	7.9	8.6	8.4	8.8	8.3
	Word Naming Fluency	38.2	38.0	38.4	53.8	55.8	51.0	46.3
	Unfamiliar Word Fluency	21.7	21.6	21.7	28.2	28.2	28.2	25.1
	Oral Reading Fluency	34.5	34.5	34.5	46.9	48.1	45.3	41.0
	Reading Comprehension	37.2	37.2	37.3	49.7	50.4	48.8	43.7
	Listening Comprehension	69.3	68.9	69.9	68.8	64.3	74.8	69.0
Zero Scores (%)	Word Naming Fluency	8.7	8.3	9.3	3.4	2.3	4.7	6.0
	Unfamiliar Word Fluency	18.4	18.2	18.7	13.9	15.0	12.4	16.0
	Oral Reading Fluency	10.1	10.9	9.1	3.8	4.7	2.6	6.8
	Reading Comprehension	24.1	24.3	23.8	9.7	10.1	9.1	16.6

In Figure 33, the percentages of children scoring at different levels are graphically depicted. Note that in Akaki-Kaliti and Addis Ketema, none of the children scored zero wpm on oral reading fluency (blue bar). On the other hand, more than 20% of children scored 0 in Yeka and Akaki.

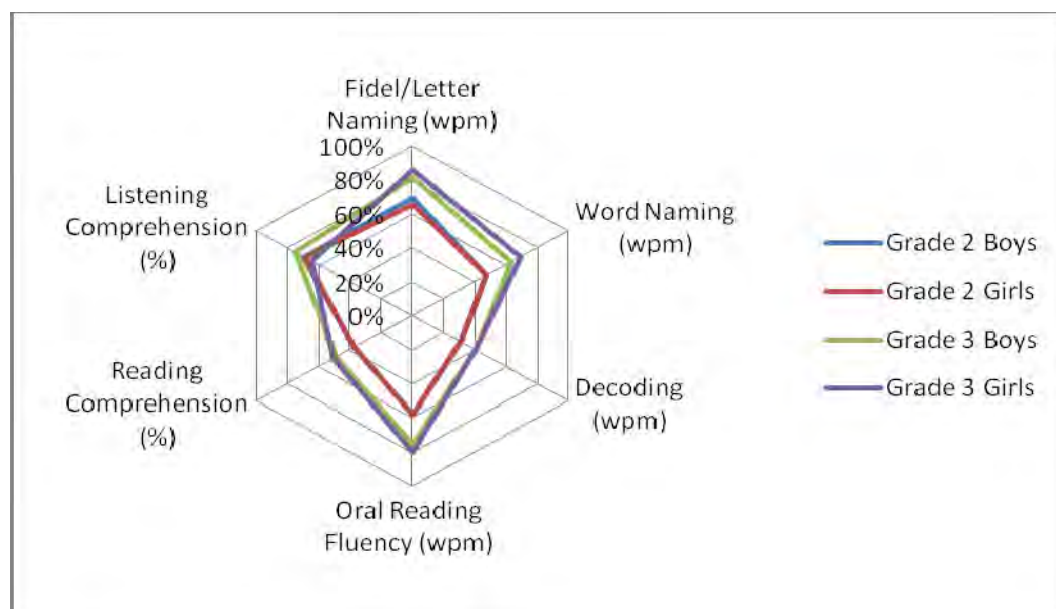
With respect to reaching the benchmark, more than 20% of children can read at the benchmark score of 60 wpm in both Addis Ketema and Arada. It is once again Yeka and Akaki that have more than 50% of children that read less than 30 wpm. For Lideta and Gullelie, the percentages are more than 40%. On the other hand, in Addis Ketema and Kirkos more than 80% of children read 30 wpm or more. While Addis Ababa is the best scoring region, less than 20% of the region's children read at the 60 wpm benchmark.

Figure 33. Addis Ababa woreda percentage scores on oral reading fluency by sub-city



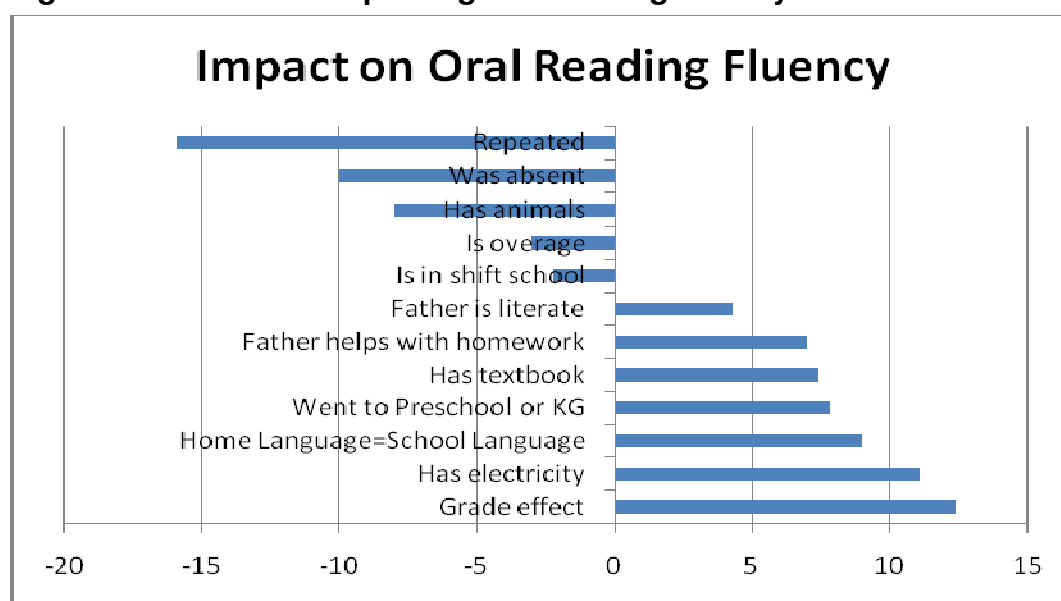
In Figure 34, the Addis Ababa scores are disaggregated by grade and gender and compared against regional benchmarks for subtasks outcome scores. Note that the gaps by gender are modest, with significant overlap in Grade 2 (blue line for boys and red line for girls) and Grade 3 (green line for boys and purple line for girls). Scores are skewed toward three areas: fidel naming, oral reading fluency, and listening comprehension. It appears that the average Grade 2 child is 60% of the way to the fidel naming benchmark, and Grade 3 children are 80% of the way there. Similarly, Grade 2 and Grade 3 children are 60% and 80%, respectively, of the way to the benchmark for oral reading fluency. The scores are much more modest, though, for decoding (40% on average for all groups) and reading comprehension (40% for Grade 2 and nearly 60% for Grade 3). Areas of improvement, therefore, are decoding and reading comprehension.

Figure 34. Radial plot for Grade 2 and Grade 3 boys and girls against Addis Ababa benchmarks for six EGRA tasks



In Figure 35, which is focused on Addis Ababa data, the relationships between particular factors and oral reading fluency outcomes are presented. Repetition has a strong negative relationship with oral reading fluency, such that if a child repeated a grade, their scores are 15.9 wpm lower. If the child's family has animals, their scores are 8.0 wpm lower. If the child is in a shift school, particularly the afternoon session, their scores are 2.2 wpm less. Father's literacy (4.3 wpm) and father helping with homework (7 wpm) are both correlated with improved student outcomes. In addition, going to preschool or KG (7.8) matters quite a bit, as does having the textbook (7.4 wpm). Speaking the same language at home and at school is an important predictor (9.0 wpm), which is particularly important in a city like Addis Ababa with significant internal migration.

Figure 35. Factors impacting oral reading fluency in Addis Ababa



Difficult Letters and Words

The discussion above provides details for achievement by woreda, and specific characteristics of which groups are highest performing on reading outcomes. What follows in this section is a more detailed discussion of the letters and words that children in particular language groups find difficult. In Table 9, the 8 most difficult letters are presented by language. Letter 1 was found to be the most difficult of the 100 letters on the list. Recall that these letters (or fidel) were included proportional to their occurrence in the language textbooks for Grades 2 and 3. Repeated letters are not included here, but for the Latin alphabet, differentiation is made for capital and lower case letters. Note that the most difficult letter for both Tigrigna and Hararigna are the same. Note also that consonants were difficult for Somali and Afan Oromo, with only E appearing on the difficult list for Somali and only I on the difficult list for Afan Oromo. For Sidamigna, however, note that the hardest letters were ones that are surprising, both I and E.

Table 9. Difficult letters by language

Region	Letter 1	Letter 2	Letter 3	Letter 4	Letter 5	Letter 6	Letter 7	Letter 8
Amharic	ሸ	ቸ	ሪ	ኝ	ዝ	ጽ	ሪ	ፍ
Tigrigna	ሀ	ቐ	ቐ	ዎ	እ	ከ	ሩ	ያ
Hararigna	ሀ	ዌ	ሰ	ብ	ዜ	ኬ	ደ	ዝ
Somali	W	K	g	E	Q	Y	D	S
Afan Oromo	v	i	q	P	y	x	J	I
Sidamigna	I	J	p	Y	E	r	I	h

In Table 10, for the same six languages, the five most difficult words on the commonly occurring word list are presented.

Table 10. Difficult words by language

Region	Word 1	Word 2	Word 3	Word 4	Word 5
Amharic	መስርቱ	በምንባቡ	በኋላ	ሆሂያት	መልሱ
Tigrigna	ዝቕረቡ	እኸሊ	ንኸነብር	እውን	ግና
Hararigna	ኪተቡዩ	አውወል	ዲጁ	ጠይ	ሐልበነ
Somali	Su'aalahan	Macnaha	Noqota	Leedahay	Erayada
Afan Oromo	Barannoo	Dammi	Maalif	Xalayaa	Haadha
Sidamigna	Rosiishsha	Qoli	Afidhino	Woroonni	Sayikki

From the list of difficult letters and words from each language, the following explanations are possible. Most of the letters in Amharic list (except **ሂ** and **ሪ**) are in the sixth stage of the fidel arrangement and might be confused with others and the sounds of extension fidels. The **ኧ** fidel is also confused with the **ደ** fidel (i.e., similar appearance but different sounds). But this pattern is not true for Tigrigna. In Tigrigna, the list of fidels are mixed, but the difficulty seems related to the sound differentiation (**ቀ** from **ቕ**; **ቕ** from **ቕ**; **ሩ** from **ሉ**; **ዋ** from **ዎ**) and fidels such as **ቕ** and its associates are irregular ones in the language—they are extensions of other sounds. On the other hand, the **ኧ** fidel in Tigrigna is both a vowel and a consonant and can easily be confused. In the cases in Afan Oromo, the letters p and x proved to be among the difficult ones because they are not naturally attached to any sound in the language. Only recently were they adopted for use in the Afan Oromo language. In addition, there seems a problem because of similarity absence in sound. For example, the letter “t” is read synonymously with the letter “e,” and there is no “v” sound in Afan Oromo. Generally, it was said that the problem seems related to the difficulty in differentiating between vowels and consonants. However, there is no clear pattern in the Sidamigna list, and the problems could be more teacher-related rather than script/language-specific.

In the cases of the difficult words, the result in the Amharic language is surprising for the words listed are the most common ones in the school curriculum. They are parts of instructions - መስርቱ፣ መልሱ፣ በምንባቡ፣ ሆሂያት are meant construct (a sentence), give answers, according to the passage and fidels respectively. Thus, it is possible these words are not taught because of their familiarity. In Tigrigna, the difficult words seem to be those words that include a fidel from the list of difficult letters.

Afan Oromo, Somali, and Sidamigna use the same Latin script, and the possibility of repetition of vowels and consonants may be a reason for the difficulty. Generally, then the problems seem

related to (1) similarity of letters (fidels) and (2) difficulty to differentiate between vowels and consonants. These are both pedagogical issues related to teaching quality rather than language-specific issues.