



EVALUATION

Midline Survey Report: Phase III of the McGovern-Dole Food for Education Program in Sierra Leone

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MIDLINE REVIEW OF PHASE III OF THE McGOVERN–DOLE FOOD FOR EDUCATION PROJECT (MGD III) IN SIERRA LEONE

August 27, 2017

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Department of Agriculture or the United States Government.

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ACRONYMS

CRS	Catholic Relief Services
CSR	Country Status Report (on Education)
CTA	Community Teacher Association
DEO	District Education Office
DTM	Diagnostic Teaching Methods
FWR	Familiar Word Reading
FFE	Food for Education
GOSL	Government of Sierra Leone
ILA	International Literacy Association
M&E	Monitoring and Evaluation
MC	Mother's Club
MEST	Ministry of Education, Science and Technology
MGD	McGovern-Dole
MICS	Multiple Indicator Cluster Survey
NP	Northern Polytechnic
PA	Phonemic Awareness
PQTR	Pupil Qualified Teacher Ratio
PTR	Pupil-Teacher Ratio
SCR	School Census Report
SILC	Savings and Internal Lending Committee
SMC	School Management Committee
TALLE	The Association of Language and Literacy Educators
TLM	Teaching and Learning Materials
USDA	United States Department of Agriculture
WAEC	West African Examination Council
WASSCE	West African Senior Secondary Certificate Examination
WFP	World Food Programme

EXECUTIVE SUMMARY

BACKGROUND

This report presents the findings of the midterm review of Catholic Relief Services' (CRS) implementation of Phase III of the McGovern-Dole Food for Education (MGD III) in Sierra Leone. CRS has been implementing this project, which is funded by the United States Department of Agriculture (USDA), in selected chiefdoms in Koinadugu district since 2008. The aim of the McGovern-Dole Program is to reduce hunger and improve literacy and primary education, especially for girls. The MGD III project in Sierra Leone has two overarching goals: (1) to improve the literacy skills of children in the 192 schools targeted by the program and (2) to improve health and hygiene practices in targeted school communities. It is a 3-year project and this review comes at the end of the second year. The project aims to achieve these goals by providing school meals, teacher training, improving water and sanitation environments, and improving skills and knowledge of various beneficiaries. For Sierra Leone, which is one of the poorest countries in the world that is also recovering from a recent Ebola epidemic, this partnership with CRS/USDA has been constructive.

PURPOSE

The purpose of this midterm review was two-fold: (1) to assess progress the MGD III project has made towards achieving its intended results, based on the project's effectiveness, relevance, efficiency and sustainability; and (2) to recommend actions for improving the implementation during the final year of the project.

METHODOLOGY

The midterm review used a mixed-method approach, which combined the use of qualitative and quantitative data. Quantitative data was collected from pupil surveys, reading assessments, classroom observations, and school observation checklists. The qualitative data came from semi-structured interviews with key informants and focus group discussions. The team interviewed head teachers, government officials, CRS

staff, and staff of other partner organizations and held focus group discussions with community members.

A two-stage cluster sampling approach was used to select schools and pupils within schools to get a representative sample. Sample sizes were chosen to get statistically significant insights at a 95 percent confidence level. The data collection took place between May 30th and June 9th, 2017, one year after the baseline data collection.

FINDINGS AND CONCLUSION

MGD III is a noteworthy project aimed at engaging teachers, head teachers, and communities to improve the literacy skills and health and hygiene of young children. It is noteworthy because of its long-term commitment to Koinadugu district, one of the poorest and most food-insecure districts, in Sierra Leone. The most important findings from the midterm review are provided below.

Effectiveness

The project has made good progress towards achieving its strategic objectives. The gains achieved in the first objective, related to improving literacy skills, are particularly impressive. The percentage of class 2 students who could read and understand grade level text increased by a factor of 5, from 8 percent at baseline to 39 percent at the interim review. If this rate of improvement continues into the final year, the project will surpass its target of 40 percent of students being able to read after 2 years of schooling. These improvements appear to be because of improvements in teacher knowledge and skills, brought about by an intensive focus on teacher training and in-classroom coaching.

The theory of change hypothesized that improved quality of literacy instruction, combined with improved attentiveness, and improved student attendance will improve the literacy skills of pupils. The data collected confirmed improvements in all three areas since the baseline: the percentage of students regularly attending school increased from 67 percent at baseline to 100 percent at midline; student attentiveness improved from 58 percent at baseline to 66 percent at midline; and the quality of

literacy instruction also improved in many areas. Given these findings, we can conclude that the activities around teacher training and coaching, provision of school meals, and provision of literacy materials have been especially effective in improving the quality of literacy. The evaluation also concludes that given the marked improvement in scores, the additional resources committed to supporting teachers such as coaching, have contributed to the successes achieved.

Nonetheless, there is still much to do to improve this objective. The data shows that girls are lagging boys in terms of literacy, and that this difference is statistically significant. Care must be taken to ensure that gender issues are considered in the teaching and learning experience to ensure that teachers pay attention to the needs of girls in the classroom. Also, while the quality of teaching instruction has improved, many teachers are still not proficient in some basic pedagogy skills and will need additional support to improve.

Whereas the progress made in literacy is clear and undisputable, progress under the second objective related to improved health and hygiene practices is not. The theory of change suggested increased knowledge of health and hygiene practices, nutrition, and safe food preparation practices, and increased access to clean water and sanitation facilities, preventative health services, and food preparation and storage tools would lead to increased use of good health and dietary practices.

The review shows that knowledge of health and hygiene practices and safe food preparation and storage practices declined from the baseline, and it is unclear why this happened. One possible reason is that about 14 percent of the cooks in the sample had not received the training on safe food preparation and storage because they were new or not selected to attend the training. The review also found that because of the delay in construction of wells and latrines, access to clean water and sanitation facilities has not improved since the baseline. The implementation of the project activities in this area needs to be improved if the MGD III is to meet its end of project targets.

Relevance

The project is highly relevant and various beneficiaries (teachers, head teachers, and students) and stakeholders (Ministry of Education officials, community leaders, and partners) consider it a priority. MGD III addresses crucial needs of the targeted communities such as improved learning, access to safe drinking water, and nutritious meals to students. The project is also in line with the goals of the Ministry of Education, which include improving foundational literacy skills of all children and improving WASH facilities in schools. Another very important aspect of the program is that it has been responsive to changes in the context and has used lessons learned from experience implementing the MGD projects over the years to adapt the design of the program to make it more relevant to communities. For example, because of the experience of the Ebola outbreak, the Phase III project design included more focus on health and hygiene practices to help prevent future outbreaks of diseases.

Efficiency

Integrating health and education within schools is an efficient strategy for improving the overall well-being of children in the community. Based on the overall review findings and analysis, CRS and its partners have done a good job in implementing this project.

Nonetheless, some key informants indicated some shortcomings and bottlenecks in executing the project. These included delays in the construction and rehabilitation of WASH facilities (latrines and wells) and in distributing certain teaching and learning materials. Informants also mentioned logistical challenges related to transportation and cash transfers, which lead to delays in implementation.

Sustainability

Sustainability is an important feature of McGovern-Dole programs worldwide, and for USDA this means that schools served by MGD III can continue the activities on their own or with support from other sources such as the government or local community partners after USDA's support ends.

CRS took several steps to ensure sustainability of the MGD III project, including aligning the project objectives to the goals of the government, developing the capacity

of various stakeholders, and helping schools through the formal approval process that qualifies them to receive government support.

During the focus group discussions, communities expressed a willingness to continue the activities after the project ends, including providing school meals, maintaining school infrastructure, and continuing to send their children to school. While their willingness is encouraging, even now communities struggle with providing basic condiments and utensils to support the CRS school feeding program. It is unlikely that they will continue with many of the MGD III activities.

For government-approved schools, it is possible that the Ministry of Education, Science and Technology (MEST) and its partners will continue some of these activities. MEST is now trying to implement a National School Feeding program and teachers in MEST-approved schools are eligible to receive salaries and on-going professional development activities. However, over 75 percent of MGD III schools in this sample remain unapproved, and therefore ineligible for support. A key strategy for sustainability will be to intensify advocacy efforts to get these schools approved.

RECOMMENDATIONS

The recommendations in this section are derived from the findings and suggest ways to strengthen key areas of the project to improve the chances of meeting or surpassing the end of project targets. The main recommendations are as follows:

Improved Literacy Skills

- *Teacher training:* while teacher practice has improved overall, there are still many individuals who have not mastered basic skills. The project should find a way of identifying these teachers and providing them with targeted support and coaches can play a role in this.
- *Use of teaching and learning materials:* while the project has distributed thousands of textbooks, these are not being used effectively in classrooms. In most classrooms, only the teacher has a text. The review recommends a small qualitative study on the use of TLMs and the findings from such a study can be

used to design a training for teachers and head teachers on the use and management of textbooks in their lessons.

- *Class participation:* students, especially girls, should be encouraged to speak more and ask questions in class.
- *Community engagement:* engage parents and communities in supporting reading (and not just the feeding program). There are several ways that they can do this including reading to their children, telling stories, and providing space and time for children to read after school.
- *Girls and gender:* given the findings that girls are underperforming boys, issues of gender in teaching practice and reading should be explicitly addressed. Ensure that teachers are encouraging and paying attention to both boys and girls, that materials are gender-sensitive, and that training focuses on this issue. This is especially important given that the 90 percent of the teachers are male.

Improved health and hygiene practices

- Reinforce key hygiene messages throughout the curriculum and in extra-curricular activities.
- The project should have a plan for training new cooks who enter the project midway and others who were not selected for the training. This might involve those who were trained passing on the information to others or MGD staff doing cluster trainings during the year.
- Schools should have supplies that enable children to practice what they have learned about good hygiene practices. For example, handwashing stations with water and soap should be present in all schools and kitchens and there should be bins for trash.
- Keeping school facilities clean should be a communal responsibility, and CRS should work with schools to develop strategies to maintain good hygiene practices. Only about 57 percent of the schools in the sample have a WASH club.
- Minimum standards for food preparation and storage tools and equipment should be developed together with the communities, and MGD III should ensure that schools meet the standard
- Over 40 percent of schools have not received the required preventative health services (e.g. deworming and vitamin A supplementation). MGD III does not itself provide these services, but it should advocate for supported schools with the appropriate agencies.
- Provide reading materials for children that reinforce health messages in a fun and engaging way

- Prioritize infrastructure and supplies that impact student safety and well-being. These include schools that have no working safe source of water, no working toilet facilities, no hand-washing stations, and no roof. Soap (or other cleaning agents) and water should be mandatory in all school toilets and kitchen.
- Intensify efforts to complete the construction of wells and latrines

Other recommendations

- Develop a sustainability plan with communities, local government and MEST to prepare for the end of the MGD III program.
- *School approval*: work closely with schools to ensure that schools meet the minimum standards to apply for approval and that all of them apply. There are still head teachers reporting that they do not know or understand the process for applying for school approval.
- Collect further monitoring data on the coaching process that includes records of the number of times teachers are visited. If a structured observation tool is used, then that data should be analysed with a view to identifying areas for further refresher training.

INTRODUCTION

COUNTRY CONTEXT

Sierra Leone is one of the poorest countries in the world, ranking 179 out of 188 countries in the 2016 UNDP Human Development Index (United Nations Development Programme UNDP, 2016). It is also one of the most food insecure countries in the world, ranking 109 out of 113 countries on the 2016 Global Food Security Index from the Economic Intelligence Unit (The Economist Intelligence Unit, 2017). Part of the reason for the poor social and economic conditions is that the country was engulfed in a civil war lasting over a decade that officially ended in 2001. Unfortunately, in 2014, even as Sierra Leone was trying to rebuild its social and economic systems, the country was hit by the largest Ebola outbreak the world has ever seen. The first confirmed case was in February 2014, and by December 2015 the country had recorded an estimated 8,700 confirmed cases and over 3,500 confirmed deaths. The government took stringent actions to try to curb the disease, including delaying the reopening of schools for almost 7 months. The Ebola epidemic had a devastating effect on the economy, which is still being felt today, and the country remains very fragile.

Education performance is low and progress in achieving learning outcomes has been slow. A national assessment of reading in the early grades showed that many children could not read simple words or comprehend simple passages after three years of schooling (Montrose International, 2014). In addition, while remarkable progress had been made in enrolments at the primary level, the 2015 Population and Housing Census showed that 35 percent of children of primary-school age were not attending school (Statistics Sierra Leone, 2016). Literacy rates are also among the lowest in the world, and the same census data showed that just 51 percent of the population over aged 10 was literate, with the literacy rate for women a mere 41 percent.

In response to these challenges, the United States Department of Agriculture (USDA) has made Sierra Leone one of its priority countries for the McGovern-Dole Food for Education (MGD) Programs. The MGD program helps support education, child development and food security in low-income, food-deficit countries around the globe.

Its key objective is to reduce hunger and improve literacy and primary education, especially for girls, by providing school meals, teacher training, and related support.

PROJECT BACKGROUND

Catholic Relief Services (CRS) has been implementing the McGovern-Dole Food for Education (MGD) Program in Koinadugu District in Sierra Leone since 2008. Koinadugu was chosen because of the district's food insecurity status, high malnutrition rates amongst children under age five, and below average education performance. The MGD program has been implemented in three distinct phases.

Phase I: The first phase of the MGD program (MGD I) ran from 2008 to 2012 in four chiefdoms in Koinadugu - Sulima, Mongo, Neini, and Neya. These chiefdoms were chosen because they were the most marginalized in the district. Between 2008 and 2012, the MGD I program distributed almost 1,500 metric tons of food, corresponding to 5,780,201 meals served to 18,610 pupils. The project also included take-home rations for girls in upper primary from which over 5,000 girls benefitted. In addition to food aid, the MGD I project trained school management committees (SMCs) and improved on school infrastructure. The MGD I project also distributed teaching and learning materials (TLMs) and furniture to schools.

Phase II: The second phase of the program (MGD II) began in September 2012 and ended in January 2016. In Phase II the program expanded to include a fifth chiefdom (Dembelia Sinkunia) and to include an additional 75 schools from existing program chiefdoms. Phase II also included additional activities such as in-service teacher training on Diagnostic Teaching Methods (DTM) to improve literacy instruction and established Savings and Internal Lending Committees (SILC) to help strengthen the financial status of households. The food aid component continued in Phase II using the same two modalities: (1) two in-school meals per day; and (2) take-home rations for girls in upper primary who maintain at least an 85 percent attendance rate. The Ebola outbreak created a public health emergency that challenged the implementation of MGD II activities and diminished its potential impact.

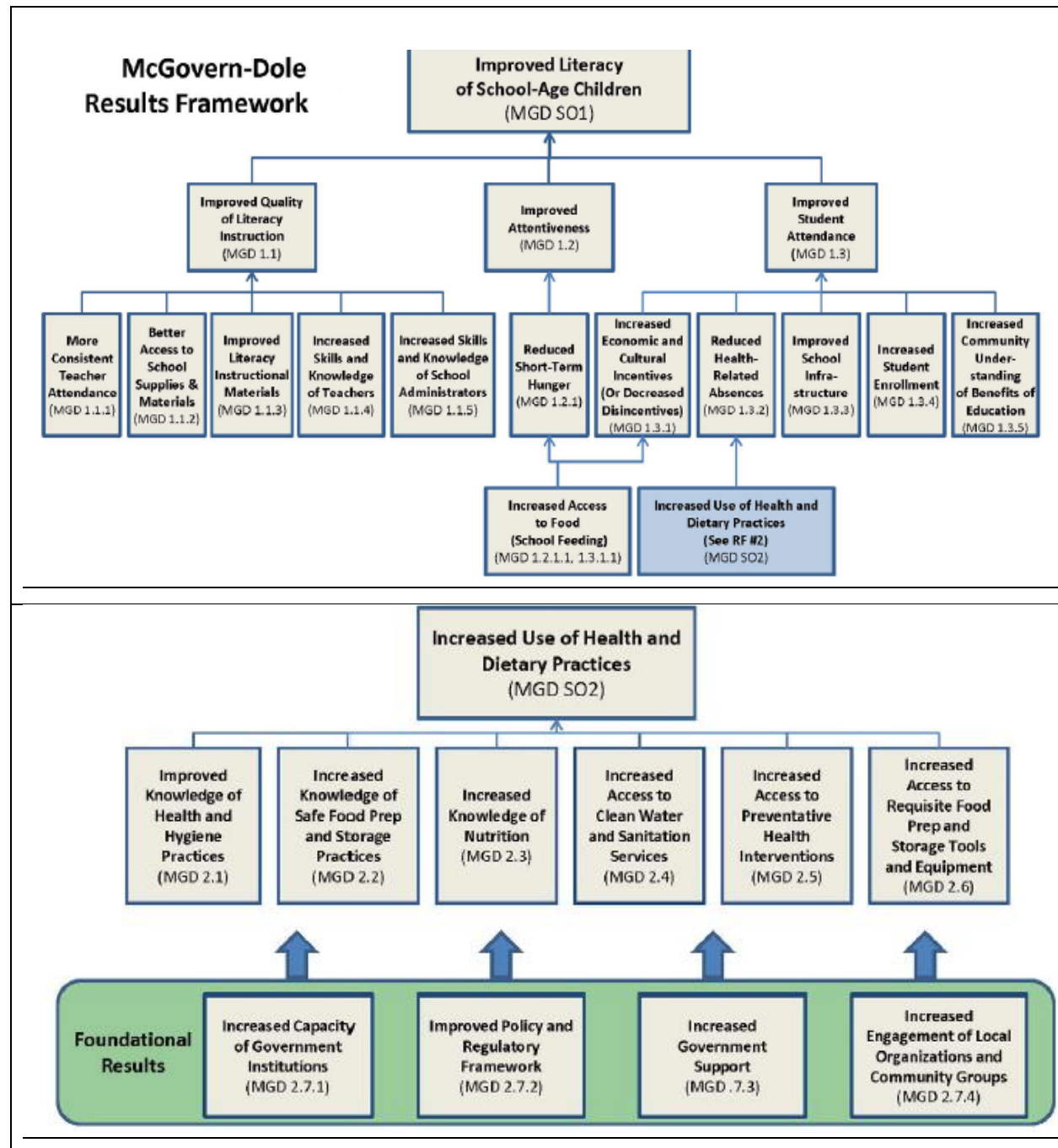
Phase III: The third phase (MGD III), which is the focus of this interim (midline) review is being implemented in the same five districts as MGD II and will run from December 2015 to September 2018. Most of the activities remain the same as in MGD II, but there are important differences. First, MGD III provides one school meal daily, whereas

MGD II provided two. The project also switched from bulgur to fortified rice as the staple food. These changes were made to align the school meals component more closely with the Government of Sierra Leone's (GOSL) planned school feeding program. Second, MGD III intensified the attention paid to the literacy component of the program by hiring 25 literacy coaches who are responsible for 8-12 schools each, and who provide professional development support (training, coaching, mentoring) to teachers of the early grades. Thirdly, in response to the Ebola crises, MGD III includes a second strategic objective focused on improving health and dietary practices of learners and the wider school communities.

INTERVENTION LOGIC

The MGD program is a school feeding program with two main goals: (I) improved literacy of school-aged children and (II) improved health and dietary practices of pupils and communities. Figure 1 illustrates the intervention logic of the MGD III program.

Figure 1. Results Framework for the MGD III Program



Under goal 1 (improved literacy), there are three sub-objectives (improved quality of literacy instruction, improved pupil attentiveness, and improved pupil attendance) and multiple activities (e.g. teacher training, school feeding, provision of teaching and learning materials). Under goal 2 (increased use of good health and dietary practices), there are six sub-objectives; three are related to increased knowledge of good health and hygiene practices, safe food preparation, and nutrition, and three are related to increased access to clean water, preventative health services, and food preparation and storage tools. CRS summarizes the theory of change of the MGD III project as follows:

IF the quality of literacy instruction is improved AND children, having received school meals, have their short-term hunger reduced AND their attentiveness and attendance improved THEN the literacy of school-aged children in the project area will be improved.

Also, IF pupils learn about improved health and hygiene practices at school AND cooks learn about safe food preparation and storage practices AND schools have improved access to clean water and sanitation sources AND pupils have increased access and knowledge to preventative health interventions AND food preparers have increased access to requisite food preparation and storage facilities, tools and equipment **THEN** the use of health and dietary practices will improve.

In the implementation of the MGD III, CRS partners with local and international organizations such as the International Literacy Association (ILA), The Association of Language and Literacy Educators (TALLE), Northern Polytechnic (NP), and Caritas. ILA provides training in diagnostic teaching methods (DTM) for teachers and supervisors, TALLE supports the coaching on literacy instruction, Caritas provides Life Skills Training and implements the WASH activities, and NP provides teacher certification through a distance education program. Throughout the implementation, all parties focus on the

development of capacity in schools and communities and national and local government agencies and departments.

REVIEW PURPOSE & QUESTIONS

EVALUATION PURPOSE

The purpose of the interim review was to highlight progress being made by the MGD III project towards meeting its objectives. The review was to assess the MGD III in terms of its effectiveness, relevance, efficiency, and sustainability and to recommend ways to improve the project.

REVIEW QUESTIONS

The main questions for the interim review, which followed the DAC evaluation criteria, were:

- **EFFECTIVENESS:** To what extent has the project has achieved (or has made progress towards) its objectives (or intermediate results)?
- **RELEVANCE:** To what extent does the project conform to the needs and priorities of target groups and the policies of the country and donor?
- **EFFICIENCY:** How could integration of the two strategic objectives be enhanced or further leveraged to deepen positive program results?
- **SUSTAINABILITY:** To what extent will the benefits of the project continue after the end of the project life?

EVALUATION METHODS

The midterm evaluation adopted a mix of both quantitative and qualitative research methods. The quantitative survey design consisted of pupil survey, reading assessment, cook assessment, teacher and classroom observation and school observation checklist. The qualitative component had two parts: in-depth interviews with key informants (head teachers, project staff, MEST officials, and partner organizations) and focus group discussions with community members. Insights from

the qualitative interviews and discussions complemented data obtained through the surveys and allowed researchers to examine certain topics in more depth.

The interim review did not include a comparison group because it was difficult to find schools that were disadvantaged as much or in the same ways as the targeted MGD III schools. Because the available communities didn't provide a good comparison, the ethical issues of continuing to visit schools who did not receive the same resources while taking information from them became problematic. Therefore, management decided to use a pre/post design rather than a comparison group design.

SAMPLING AND SAMPLE SIZE

A two-stage cluster sampling approach was employed to select pupils, teachers and cooks. At the first stage, schools were randomly selected as clusters and then pupils, cooks, and teachers within schools were selected at the second stage. The advantages of cluster sampling are that it is more economical, time-efficient, and easier to manage than a simple random survey. The disadvantage of this sampling technique is that individuals (teachers or pupils) within a cluster (school) tend to have similar characteristics, and there is a chance that they may not be representative of the overall population.

Sample Size

Pupils, teachers and food preparers were the sampling units of the quantitative survey. The sample sizes for the sampling units were computed using four (4) key indicators. MGD III baseline results for these indicators were used for computing sample sizes for the sampling units.

Pupils

The formula below was used to compute the sample size for pupils:

$$n = \frac{4 \times p \times (1 - p) \times deeff \times 1.2}{(Margin\ of\ error)^2}$$

where,

- n is the required sample size (i.e. number of pupils to be surveyed)
- 4 is the factor required to achieve 95% level of confidence;

- p is the value of the key indicator; in this case, the ‘percent of pupils identified as attentive during classroom activities (boy & girls) (0.58)¹;
- $deff$ (design effect) is the factor by which the precision of the estimates of the key indicators decrease due to the sampling design relative to a survey that uses simple random sampling (2)²;
- 1.2 is the factor necessary to raise the sample size by 20% for the expected non-response³. This assumes 80% response rate;
- The margin of error (± 5 percentage points) i.e. Alpha $\alpha=0.05$.

Using the formula, the sample size for pupils was estimated at 900. The decision was made to select 15 children per school across grades 2-6 as too many learners from one school would reduce the variability in our sample, which meant that we needed to have 60 schools in our sample.

The schools were the primary sampling unit and were targeted for the following surveys:

- Pupils survey,
- Reading assessment,
- School observation checklist,
- Key informant interviews (with head teachers, SMCs, CTA & Mothers club)
- Teacher and classroom observation.

The surveys used are include in full in Annex B and, except for a few questions, they are the same as those used during the baseline. This makes it possible to compare the responses at midline to those at baseline.

Table 1 shows the number of schools and pupils to be sampled by chiefdom.

¹ MGD III baseline result.

² The design effect, estimated at 2, is chosen because of the large cluster sample size (i.e. 15 pupils per school).

³ The 20% non-response is assumed to increase the sample size sufficiently large to be able to detect an effect on the following groups: meals only, meals + THR, meals + SILC and nothing.

Table 1. Number of sample pupils and schools allocated by chiefdom

Chiefdom	No. of MGD Schools	Proportion of schools	Number of schools to sample	Adjusted number of schools to sample	Number of pupils to sample
Dembelia Sinkunia	18	0.094	5.6	6	90
Mongo	43	0.224	13.4	13	195
Neya	37	0.193	11.5	12	180
Neini	65	0.338	20.3	20	300
Sulima	29	0.151	9.1	9	135
Total	192	1	59.9	60	900

Pupils were chosen in each school by a simple random (ballot) method across the five grades (2 to 6) for the pupils' survey; 3 pupils in each grade yielded 15 pupils per school.

The reading assessment test was administered to only Grades 2 and 3 pupils. The target number of pupils was 480 for each of class 2 and 3 for a total of 960 pupils. This translated to 16 pupils from each of the 60 sample schools.

Teachers

Simple random sampling method was used to select teachers in each school. Three (3) teachers were selected in each survey school – yielding **180** teachers – for the teacher and classroom observation. The instruction to enumerators was to observe teachers of classes 2-4.

Cooks/Food Preparers

Based on the sample size calculations, we selected three (3) cooks per school for interview, yielding a maximum of 180 cooks for the survey.

Focus Group Discussions (FGDs)

FGDs were held in all survey clusters/school communities with community stakeholders including women and men from SILC and non-SILC households. Discussions were held separately for men and women and each FGD had between 7 and 12 participants. Enumerators were instructed to select a wide range of ordinary community members as well as community leaders (chiefs, women's leaders, and headmen). Community members who had already been interviewed because of their

membership in SMCs and Mothers Groups were not included to increase the diversity of opinions.

Table 2 gives the response rates for schools (head teachers), teachers cooks, and pupils. Response rates were high and ranged from 88 percent to 100 percent.

Table 2. Response Rates for different units of analysis

Group	Target number	Number of responses	Response rate
Schools	60	60	100%
Teachers	180	158	88%
Pupils	900	888	99%
Cooks	180	160	89%

Recruitment and Training of Enumerators

Thirty-six (36) enumerators and five supervisors were recruited for the data collection. The supervisors and most of the enumerators had participated in the baseline evaluation of the MGD III and previous evaluations of MGD II, and as such had experience with the tools and methodology. All enumerators had at least a post-secondary qualification and many had participated in other surveys and/or had taught in schools.

The supervisors and enumerators attended a 9-day training on the administration of the evaluation tools/questionnaires and general survey protocols to equip them to collect appropriate and quality data for analysis. For this survey, quantitative data collection was done using mobile devices (iPad minis), and the enumerators had additional training on collecting data using mobile devices. Training also included role-play to deepen practice on the administration of the tools and translation of keywords into the lingua franca (Krio) to help in the focus group discussions and pupil interviews.

Another focus of the training was on ethical issues in conducting surveys with children and vulnerable populations. The training included the importance of consent and protecting the rights and dignity of all those interviewed. This meant that each child

had to agree to proceed with the survey and we did not take personally identifiable information (e.g. names) from them. We also asked that each child be interviewed in a public place, but away from their teacher and others who could hear their answers. Finally, if it appeared children could not do a subtest, the enumerators were trained to stop that subtest and move to something else.

Furthermore, at the end of the training, arrangements were made for enumerators and supervisors to practice administering the tools in nearby schools and communities. This allowed for data collectors to practice administering the tools in ‘real-life’ situations and gave an opportunity to test the appropriateness of the questions. After the pretesting, final revisions were made to the tools and rendered on the tablets before the start of the field research.

DATA QUALITY, MANAGEMENT, AND ANALYSIS

The first step in ensuring that the evaluation produced good quality data was to develop well-defined questions that helped to capture accurate and relevant data for analysis. The evaluation tools/questionnaires had been reviewed multiple times since many of them were used in previous evaluations. The new questions added also went through multiple reviews. In addition, the questionnaires and surveys were piloted in the field before adopted and administered to collect the data for the evaluation. During the administration of the survey, supervisors visited enumerators in their various sites to ensure that data collection was proceeding as planned and to provide quality assurance to the evaluation process. The use of mobile devices to collect data helped to produce good quality quantitative data.

Quantitative data collected in the iPads was exported to Excel and then into SPSS software package in which further cleaning of data was carried out. Errors and mismatches due to inconsistencies during data collection were checked and corrected; this enhanced logical consistency and quality of data. The cleaned data was then exported to Stata 14 (a statistical software) for analysis. All programs created to

analyze the data and produce tables have been saved so that the findings can be reproduced by other researchers.

FINDINGS

This section summarizes the major findings from the midline review organized by the evaluation questions. The data used in this analysis were collected between May 30th and June 9th, about a month before the end of the school year.

EFFECTIVENESS: TO WHAT EXTENT HAS THE PROJECT HAS ACHIEVED (OR HAS MADE PROGRESS TOWARDS) ITS OBJECTIVES (OR INTERMEDIATE RESULTS)?

The MGD III project has two main strategic objectives and numerous sub-objectives. Below the findings are organized based on these objectives and sub-objectives. Where possible, we have reported the starting point of the indicators, as measured during the baseline, the status during this interim review, and the final target at project end.

MGD S.O.1 Improved Literacy of School-aged children

One of the main strategic objectives (SO) of MGD III is to improve the literacy skills of children in the program. USDA's standard indicator to measure literacy skills is: the "percentage of children, who at the end of two grades of schooling, demonstrate that they can read and understand grade level text." Although the children in class 2 were the population of interest, children in class 3 were also sampled because previous assessments had shown that children in class 2 had minimal reading skills and scored zero in several of the reading subtests.

The literacy assessment tool used was adapted from a nationally developed and validated test developed by Dr. Johanna Kuyvenhoven, a literacy educator from Calvin College. As a consultant with UNICEF, the assessment tool was used to assess children all over Sierra Leone. The skills assessed are like other tests of early grade reading – phonemic awareness, letter identification, familiar word reading, and reading and

comprehension. The main difference is that these subtests are not timed. The same assessment tool was used in the baseline and midline, but the order of some of the words and letters was changed.

Learners were given a short, grade-appropriate story to read aloud after which the enumerators asked five comprehension questions. Only learners who could read the first sentence of the text correctly were asked questions. The number of questions asked of each pupil depended on how far in the story each child had read. Children were asked only those questions that could be answered from the text that they read. Four questions in this subtask were literal and could be answered directly from information provided in the story. The last question was an inferential question and required pupils to combine information from the story with their background knowledge to derive a correct answer. A learner is said to be able to “read and understand grade level text” if they answer at least 4 of 5 questions correct on the reading comprehension test.

In total 951 pupils (481 in class 2 and 470 in class 3) took the reading assessment, of which 56 percent were boys. Given high-level of pupil absenteeism on the day of survey, it is possible that our sample was biased if it turns out that pupils who were absent are different from those who were not. For example, if mostly lower-performing pupils were absent then our mean estimates would be higher than they are in the population.

Table 3 shows the percentage of boys and girls who attained a particular score on the reading comprehension. About a third of class 2 pupils scored zero on the comprehension test (40 percent girls and 29 percent boys). In class 3, 21 percent scored zero (20 percent of boys and 22 percent girls) on the comprehension test. A pupil could get a zero score if they couldn’t read the first line of the text and were therefore not asked any of the comprehension questions or if they did attempt the questions, but didn’t get any of them right.

Table 3. Percentage (%) of pupils who answered comprehension questions by class and gender

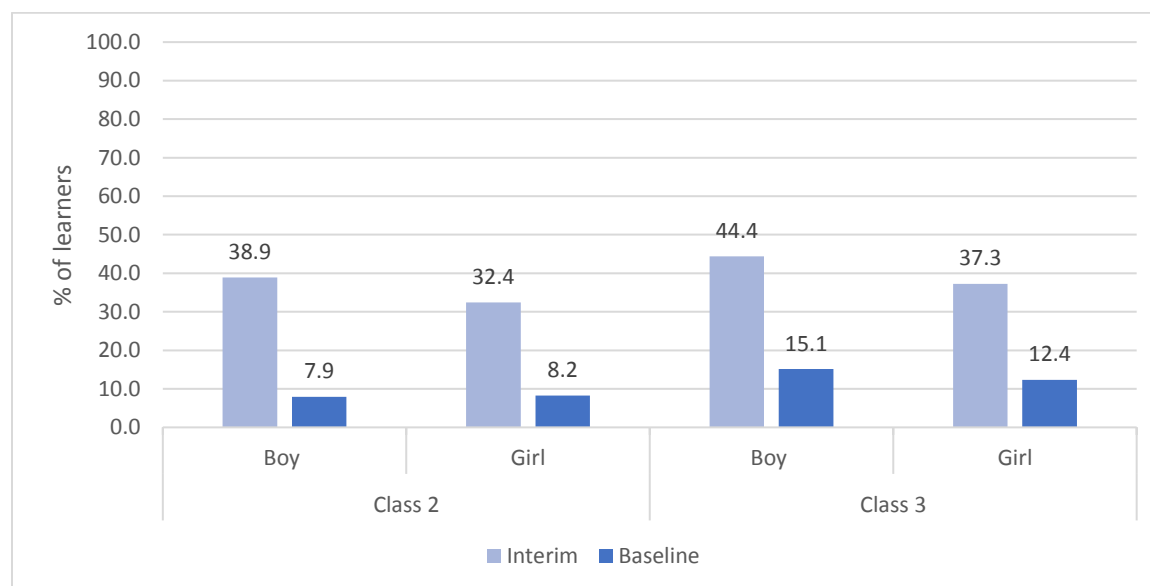
Score on comprehension (out of 5)	Class 2			Class 3		
	Boy	Girl	Total	Boy	Girl	Total
0	28.6	39.7	33.7	20.3	22.1	21.1
1	8.0	3.2	5.8	3.0	5.4	4.0
2	6.9	7.3	7.1	11.7	9.8	10.9
3	17.6	17.4	17.5	20.7	25.5	22.8
4	17.6	16.9	17.3	21.8	16.7	19.6
5	21.4	15.5	18.7	22.6	20.6	21.7

Based on the indicator definition, the percentage of children who can read and understand grade level is depicted in Figure 2 below. The table shows remarkable achievement over the year since the baseline was done. At interim review 39 percent of boys and 32 percent of girls could read and understand grade level text at the end of class 2, compared with only 8 percent during the baseline, an increase of a factor of 4.⁴ This is quite a dramatic change, and later in this report we investigate the changes in instructional practice and coaching that may have contributed to this.

This level of performance in the midline review shows that the project has exceeded its end of project target of 30 percent of children being able to read grade level text. However, is also important to note that while reading improved for both boys and girls, girls performed worse than boys in the reading comprehension test, and that difference appears to be statistically significant.

⁴ This was a different cohort of pupil, but they received the same test as was administered during the baseline.

Figure 2. Percentage of boys and girls who can read and understand grade level text (Interim and Baseline)



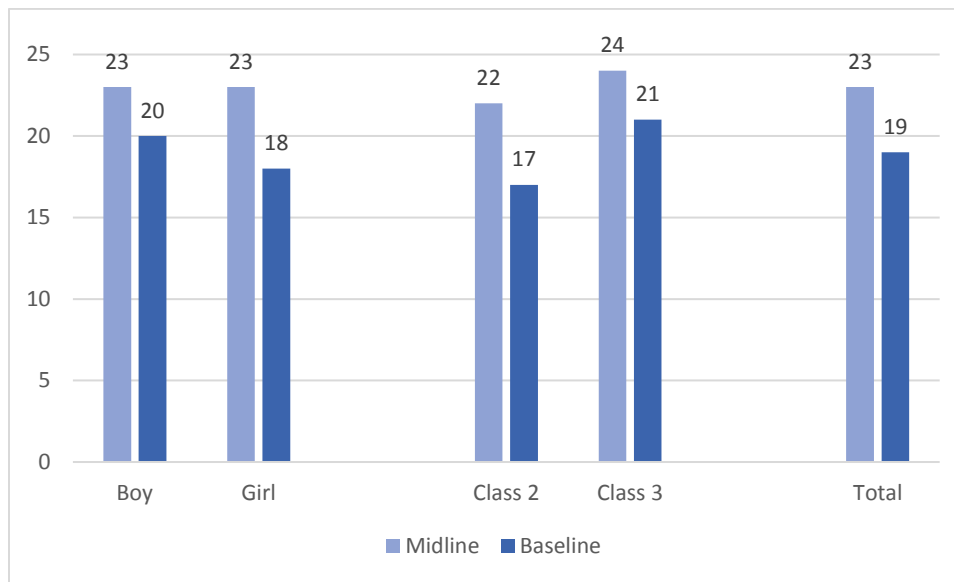
In addition to the reading comprehension sub-test, we also assessed learner's progress in several reading skills such as alphabet naming, phonemic awareness, phonics, and listening comprehension.

Alphabet Naming

In this task, children were presented with a random list of the 26 letters of the alphabet (in mixed upper and lower case) and were asked to name the letters. This was the simplest task for the learners to perform. There was no difference in the scores of boys and girls.

The average number of letters identified correctly was 23 in this review improved from 19 during the baseline (Figure 3). Slightly more than half of the pupils (53 percent) could identify all 26 letters of the alphabet by the time of the interim review, which is better than at baseline. However, after two years of schooling, it is expected that all pupils should be able to identify all the letters of the alphabet.

Figure 3. Mean Number of letters identified correctly (out of 26)

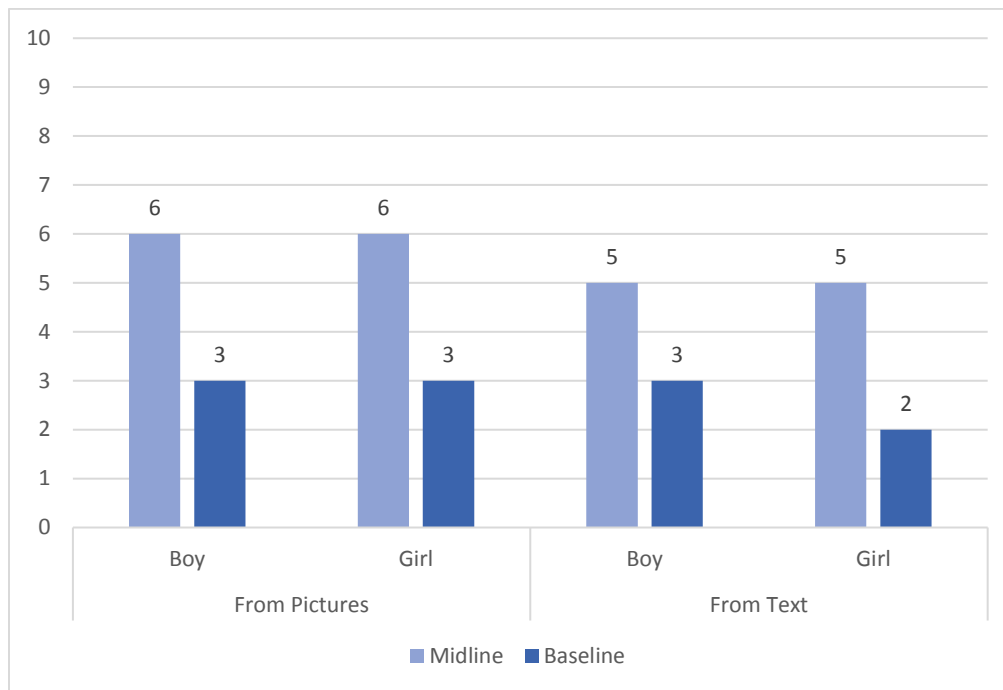


Phonemic Awareness (PA)

There were two types of PA tasks. In the first, the learner was given pictures of 10 common objects, told the names of the object, and asked to say the initial sound. In the second PA task, the learner listened to a set of words read aloud and they had to identify the word that begins with a different sound. For example, they would hear the words “moon ball mouse” and would have to identify “ball” as the word with a different beginning sound.

Figure 4 compares the mean scores in the PA subtests from baseline to midline and shows strong improvement over the year. Learners scored slightly better on the first subtask than on the second, possibly because they were more familiar with the task. There was no difference in the scores of boys and girls in the PA tasks.

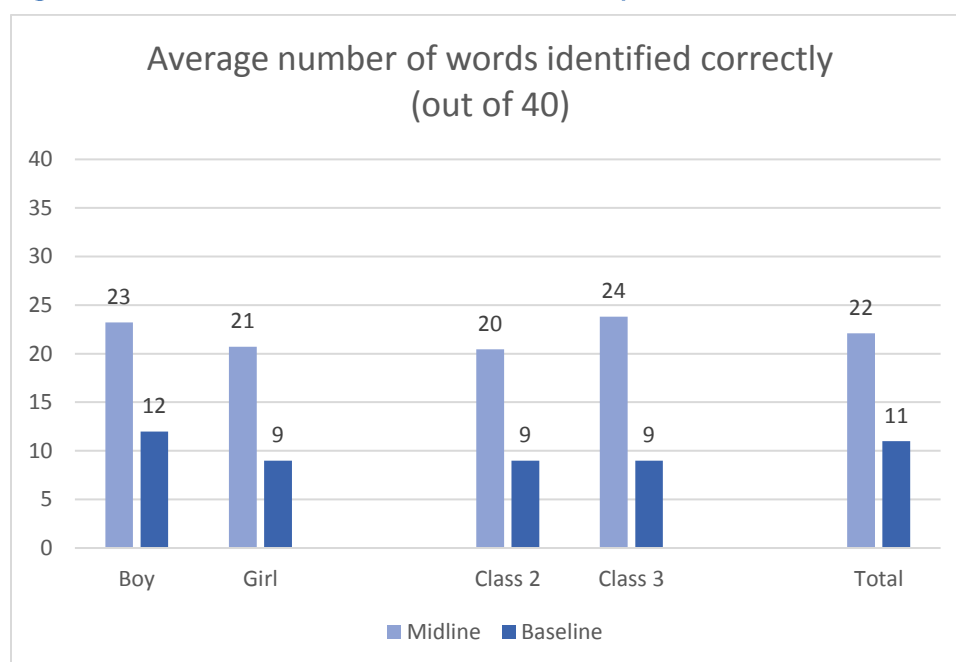
Figure 4. Mean scores in Phonemic Awareness sub tasks (out of 10), Midline and Baseline



Familiar Word Reading

In this sub-task, learners were presented with a list of 40 familiar words and were asked to read the words. The test was discontinued if the pupil couldn't read any of the first ten words. Learners in class 2 and class 3 had a different set of words, but with some overlap. The number of words read correctly doubled from the baseline to the interim review, from 11 to 22, as shown in Figure 5. Boys performed better than girls, and as expected, pupils in class 3 performed better than those in class 2. The difference in both cases is statistically significant. The percentage of pupils who scored zero on this sub-task also reduced dramatically from 42 percent during the baseline to 17 percent a year later.

Figure 5. Mean number of familiar words correctly read (out of 40)



Listening Comprehension (LC)

For this sub-task, the assessor read a passage to the pupils and pupils then had to answer a few questions about the story they were read. The mean score for boys was 2.02 and for girls 1.85, and this difference while small is statistically significant. Sixteen percent of learners scored zero on this sub-test during the midline, compared to 34 percent during the baseline.

To summarize, pupils performed remarkably better on all sub-tests at the interim review compared to the baseline. The starting point was low, but the progress is still remarkable. That said, only a third of pupils can read and understand grade level text and girls are performing worse than boys. Also, because we do not have a control group, we cannot clearly attribute all the change we see to the FFEIII project.

MGD.1.1 Improve quality of instruction

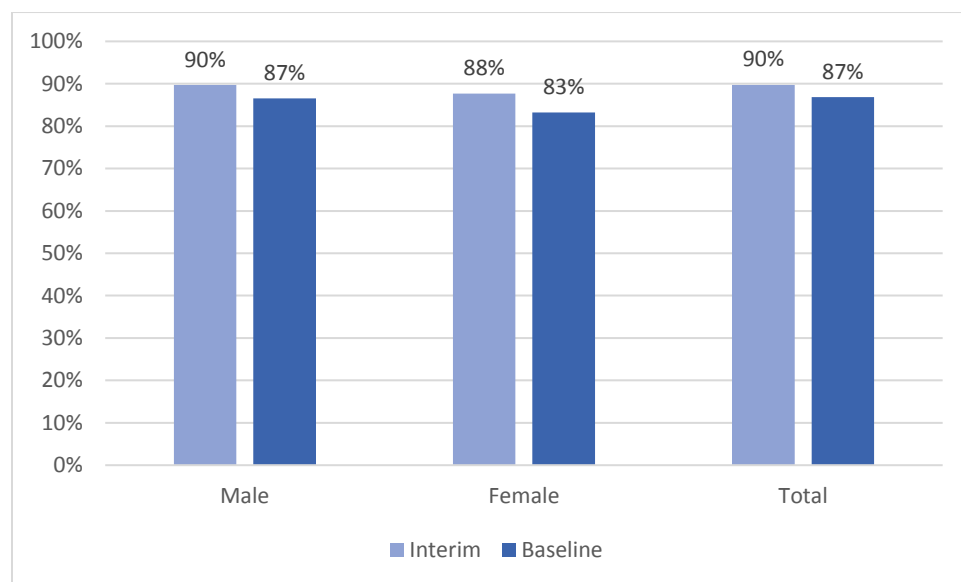
Improving the quality of literacy instruction is a major part of the implementation strategy of the MGD III program. The program aims to develop the skills of teachers in several ways including sponsoring teachers to acquire their teaching certificate from Northern Polytechnic; providing in-service training in Diagnostic Teaching Methods

(DTM) designed by the by International Literacy Association (ILA); and coaching of teachers in literacy instruction by TALLE.

MGD 1.1.1 More consistent teacher attendance

For teaching and learning to take place, at a minimum pupils and teachers must be present in school. Almost all schools (97 percent) had a book for recording teacher attendance. The teacher attendance rate on the day of the survey, based on attendance register, was 90 percent overall, 90% for male and 88% for females. This was up from the attendance rate at the baseline survey (see Figure 6).

Figure 6. Teacher attendance rate on the day of the survey.

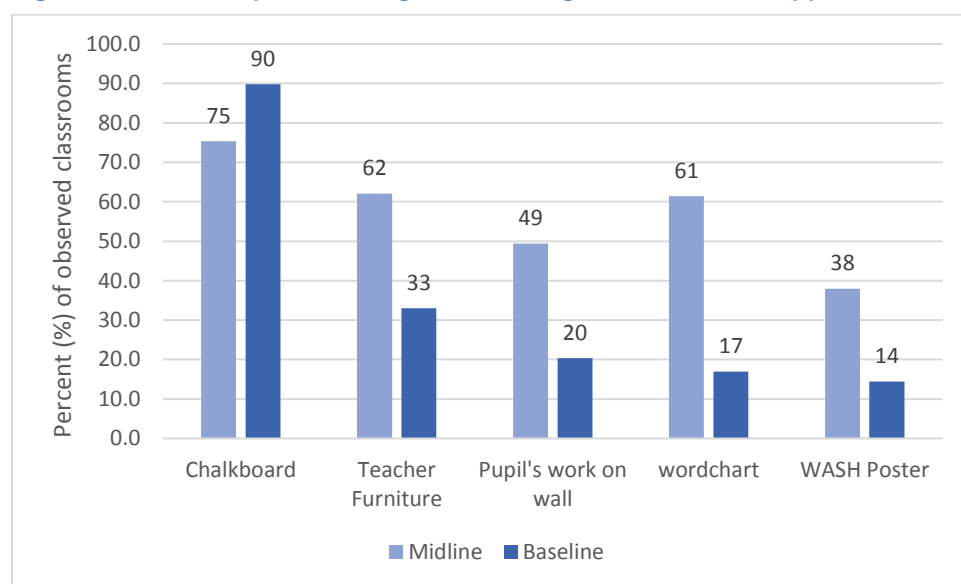


MGD 1.1.2 Better access to school supplies and materials

To be effective, teachers need materials to help them teach. The MGD III project has provided teaching and learning materials to targeted schools to improve the learning materials. During the classroom observation, enumerators recorded the evidence of the availability of various materials in the classroom. At baseline, 90 percent of classrooms had a blackboard, but only a third had any teacher furniture and even less had evidence of materials (children's work, posters etc.) on the wall of the classrooms, which may be because schools don't have the stationery to make these. At the time of

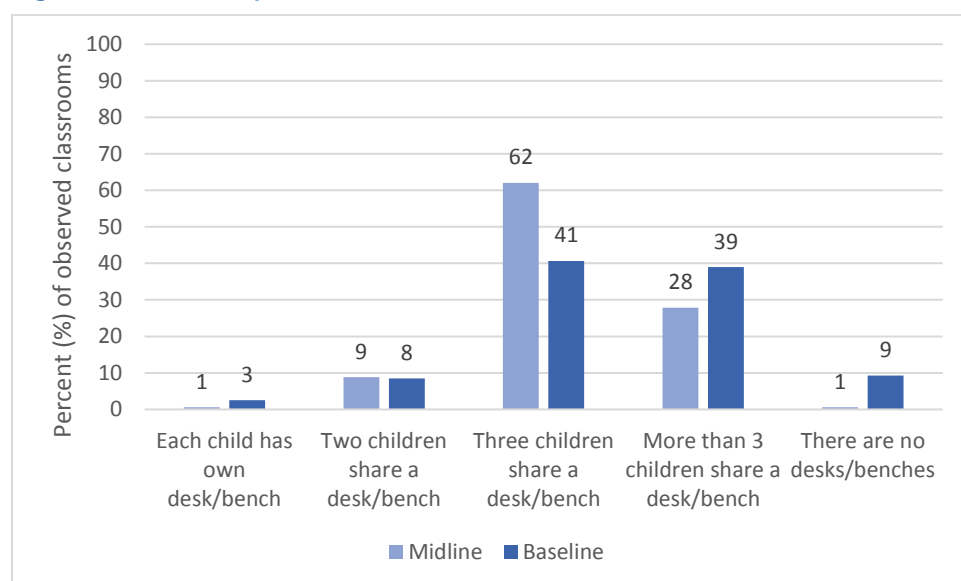
the current interim review, a smaller percentage of schools were observed to have blackboards (75 percent), but a larger percentage of schools were observed to have all other supplies (see Figure 7). With regards to the chalk boards it is unclear why they seem to be fewer in place as 196 were distributed since the baseline and others were distributed in MGD II. It is possible that our sample had more schools in which the chalkboards were delivered in MGD II, and these have become damaged or stolen.

Figure 7. Availability of teaching and learning materials and supplies



The seating arrangement in schools appear to have improved with fewer schools in which more than 3 children share a desk or in which there were no desks. (Figure 8). CRS delivered benches and desks made to accommodate three learners (3-seater benches). We expect the seating arrangement to improve over the next year as CRS has not yet reached its target for distributing school furniture. MGD III plans to deliver furniture to 240 classrooms over the life of the project (150 in year 1 and 90 in year 2), but as of June 2017, only 145 classrooms (60 percent) had received furniture.

Figure 8. Availability of desks and benches in observed classrooms



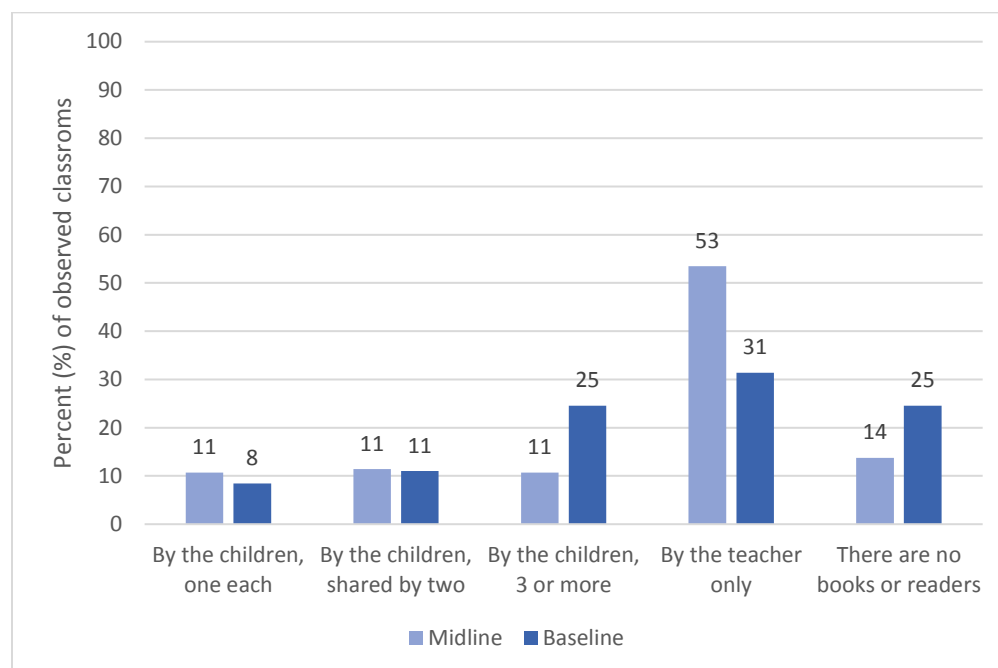
MGD 1.1.3 Improved literacy instructional and learning materials

Books and other reading materials are essential for children to learn; as such, the MGD III project distributed teaching and learning materials (TLMs) to all schools at the start of the 2016-2017 school year. The distributed TLMs included 9,185 slates, 5,000 laminated number card sets, 5,000 laminated alphabet card sets, 140,938 exercise books, 5,000 boxes of chalk, 27,453 report cards and 60,000 supplementary readers. Because textbooks arrived late, their distribution started in May and will continue until August 2017. However, the schools should have had textbooks inventory from MGD II.

The availability and use of textbooks in the observed classrooms, at baseline and midline, are shown in Figure 9 below. The percentage of observed classrooms with no texts being used dropped from 25 percent to 14 percent, which is good. However, in most classrooms (53 percent), only the teacher was using a textbook. Combining these two facts, the percentage of classrooms where no pupils were using textbook (either because there were none or only the teacher was using) was higher during the midline review (67 percent) than the baseline (56 percent). Despite the low use of textbooks in observed classrooms, 97 percent of head teachers (all, but 2) interviewed acknowledged receiving textbooks from CRS. Unfortunately, it is common practice for schools in Sierra Leone to keep the books in head teacher's office rather than use in

the classrooms. Training for head teachers and teachers should include a session on the management and use of textbooks in the classroom.

Figure 9. Availability of textbooks or readers in observed classrooms



In terms of the availability of other teaching and learning materials for pupils, about 75 percent of them had exercise books and pencils, 25 percent had alphabet cards (compared to 10 percent at baseline), and 11-12 percent had slates and chalk (unchanged from baseline).

In addition to reading materials provided for school, MGD III also provided reading materials for use in reading clubs where children come together to read after school hours. According to monitoring records, 152 reading clubs have been established, and 92 percent of schools in the sample reported having a reading club. Participation in reading clubs are voluntary, and 64 percent of children in classes 2 and 3 were members of reading clubs. The books used in the reading clubs were provided through a partnership with the International Book Bank.

MGD 1.1.4 Increased skills and knowledge of teachers

During this interim study, enumerators observed and interviewed 158 teachers in their classrooms. The teaching workforce is overwhelmingly male (90 percent), which may have an adverse effect in the learning outcomes of female pupils, who performed statistically worse than boys in the reading comprehension indicator. With regards to training and qualifications, 24 percent of the teachers interviewed had a teaching certificate; of those without a certificate most had at least a senior secondary qualification (WASSCE or O 'Levels). The percentage of teachers with a teaching certificate appears to have gone down since the baseline, and this could be because of the instance of the sample or because teachers with certificates are leaving these schools. Some key informants mentioned teacher attrition as a challenge.

Table 4 Summary of Teacher Characteristics

Teacher Demo	Midline	Baseline
Number Interviewed	158	118
% Male	90	92
% Has Teaching Certificate	24	32
Highest Qualification, if no Certificate		
% BECE	32	20
% WASSCE	57	44
% O'LEVEL	12	7
% Other		6
Training		
% DTM	84	28
% DE	59	20

Teacher training

The MGD III project invested significant resources in improving the quality of instruction through training and coaching of teachers. As Table 4 shows, 84 percent of teachers reported having attended training on Diagnostic Teaching Methods (DTM) and 59 percent were participating in the distance education (DE) course offered by Northern Polytechnic, which will lead to a teaching certificate on successfully passing an exam. These participation rates were significantly higher than the participation levels reported during the baseline.

All teachers are eligible to attend DTM training, which focused on classroom management, lesson plans, and child-centred methodology. The distance education training is for uncertified teachers who meet the selection criteria and pass the college's entrance exams. At the completion of DE program, teachers who pass the terminal exams will receive a teaching certificate. Chiefdoms with lower percentages of certified teachers were prioritized for participation in the DE program. There are currently 296 teachers enrolled in the distance education program.

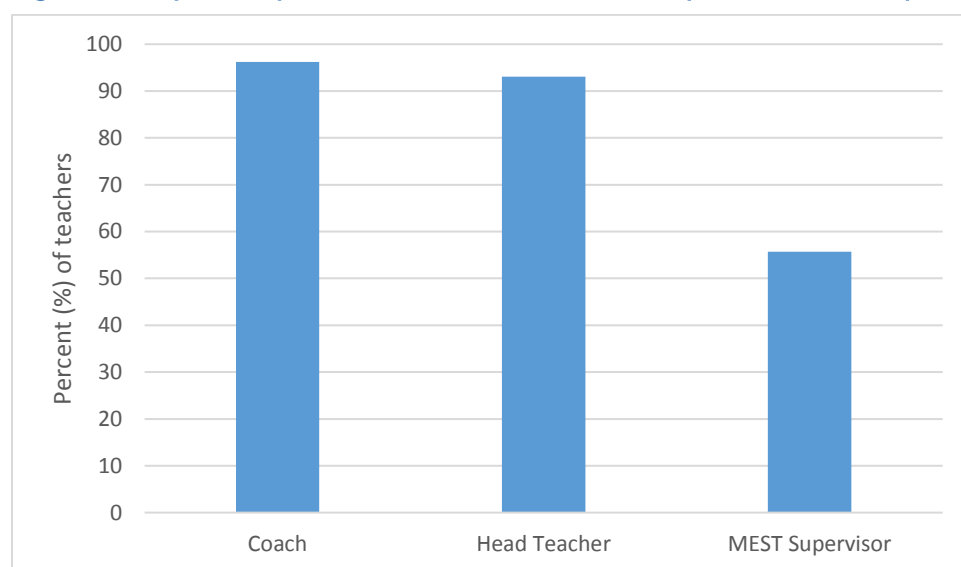
Starting with MGD III, teachers of classes 1-3 received training on early grade reading instruction, focusing on specific methodologies for teaching pupils in Class 1-3, use of early grade instructional materials, and developing locally-made TLMs.

Coaching and Mentoring

In addition to all the training, MGD III also hired 20 literacy coaches and 5 coach supervisors, who were responsible for training teachers and providing classroom-based coaching and support between the trainings. Each literacy coach covers 8-11 schools in a geographic cluster and spends at least 3 weeks per month in the field giving direct support to their designated schools. On average, they should visit each school at least three times per month. During these coaching visits, they observe teachers in their classrooms and provide feedback on their teaching. Where needed, they also provide demonstration lessons to help teachers who are struggling in certain areas. In MGD II, MEST supervisors were expected to play these roles, but due to other commitments and logistical duties they don't always have time to visit schools.

Figure 10 shows that teachers do indeed get support from coaches, head teachers and MEST supervisors. 96 percent of teachers reported that were visited by a coach in the month prior to the survey, 93 percent reported visits by head teacher, while 56 percent reported visits by a MEST supervisor.

Figure 10. Supervisory visits to teachers in the month prior to the survey



In the next section, we report on the findings from the teacher and classroom observation and compare teacher practice between the baseline and midline.

Observation of Teaching Skills

The skills and knowledge of teachers were assessed using teacher surveys and teaching observations. The rubric used for the teaching observation and teacher's knowledge of pedagogy combined tools developed by International Literacy Association (ILA) and MEST. Teacher competencies were assessed in 2 broad areas as outlined below:

1. The teacher uses a variety of pupil (formative) assessment techniques during the lesson
2. The teacher demonstrates good instructional practice (explores prior knowledge, uses lesson plans, variety of teaching methods)

Teacher performance was scored using the guidelines shown in Table 5.

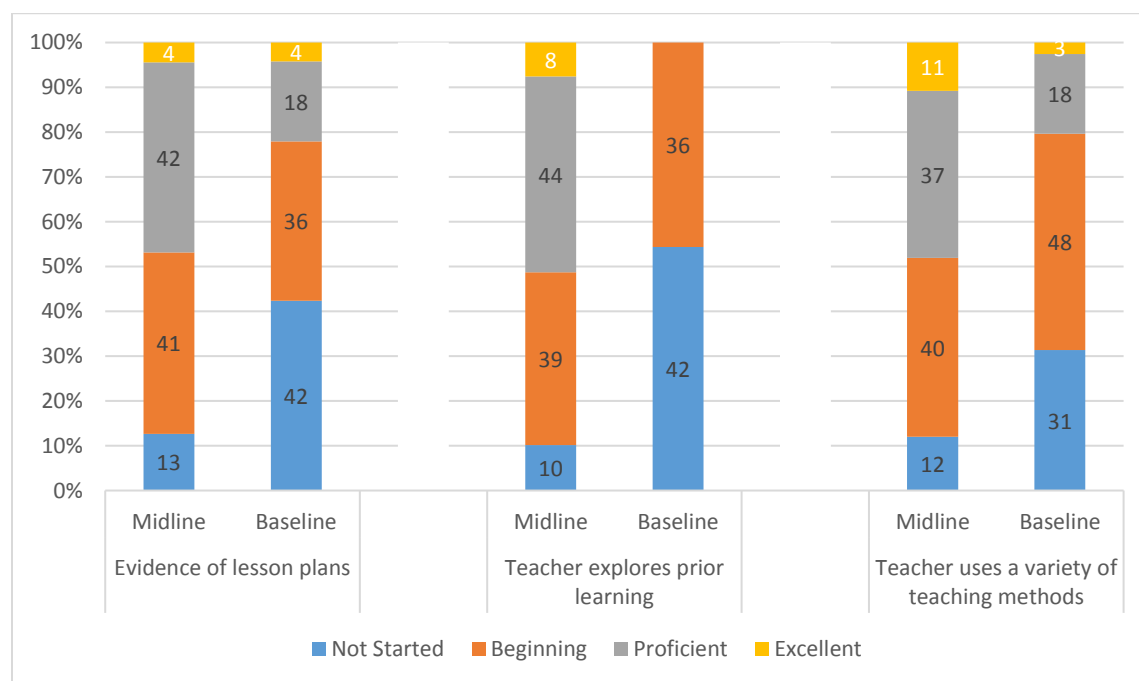
Table 5 Scoring guidelines for teacher observations

1 <i>Not yet Started</i>	2 <i>Beginning</i>	3 <i>Proficient</i>	4 <i>Excellent</i>
There is no evidence of desired behavior. The	The behavior is attempted, but not consistent. The	The behavior is acceptable and somewhat	The behavior is consistent and exemplary. The

teacher needs significant support to develop practice.	teacher needs ongoing support to develop practice	consistent and could be used as a model for others.	teacher could teach others to develop this behavior.
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Figure 11 below shows how teachers performed in Area 1 during midline and baseline and across all areas, teachers performed better at the midline, which is what is expected. 46 percent of teachers were proficient in lesson planning, 52 percent explored prior knowledge of pupils at the start of a lesson, and 48 percent of teachers showed proficiency with using a variety of teaching methods (e.g. a mix of group work pair work, and whole class instruction). These percentages were more than double those at baseline. Furthermore, at the midline, there was only a small percentage of teachers (less than 13 percent) that had not started practicing these teaching methods.

Figure 11 Area 1: Teachers Demonstrate good instructional practice



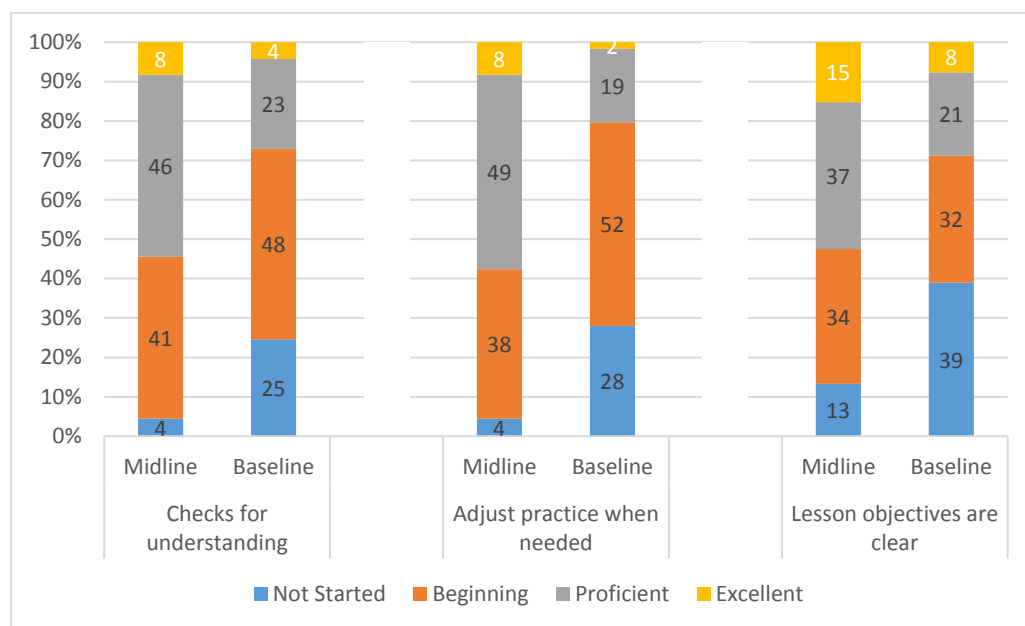
Further statistical analysis showed that the variables most likely to predict proficiency in the above skills were if the teacher already had a teaching certificate or if they

reported having been visited by MEST supervisors during the year.⁵ However, teachers who already had a teaching certificate (whether from MGD or not) were significantly more proficient in their practice than those who did not. Teachers who reported being visited by a MEST supervisor were observed to be more proficient in all three tasks above. We did not see any effect of coach visits because there was no variation in the sample as almost all teachers were visited by a coach.

Area 2 focused on teachers' proficiency in using a variety of pupil assessment techniques during the lesson, which is one of the foundation skills of the DTM training. Figure 12 shows that 54 percent of teachers were proficient in checking for pupil understanding compared to 27 percent at the baseline; 57 percent showed proficiency in adjusting their lesson based on pupil responses, and 52 percent had clearly identified lesson objectives. The share of teachers displaying proficiency in these areas were more than double that of the baseline.

⁵ Chi-Squared test, with $p=0.05$

Figure 12. Area 2 Teacher uses a variety of pupil assessment techniques

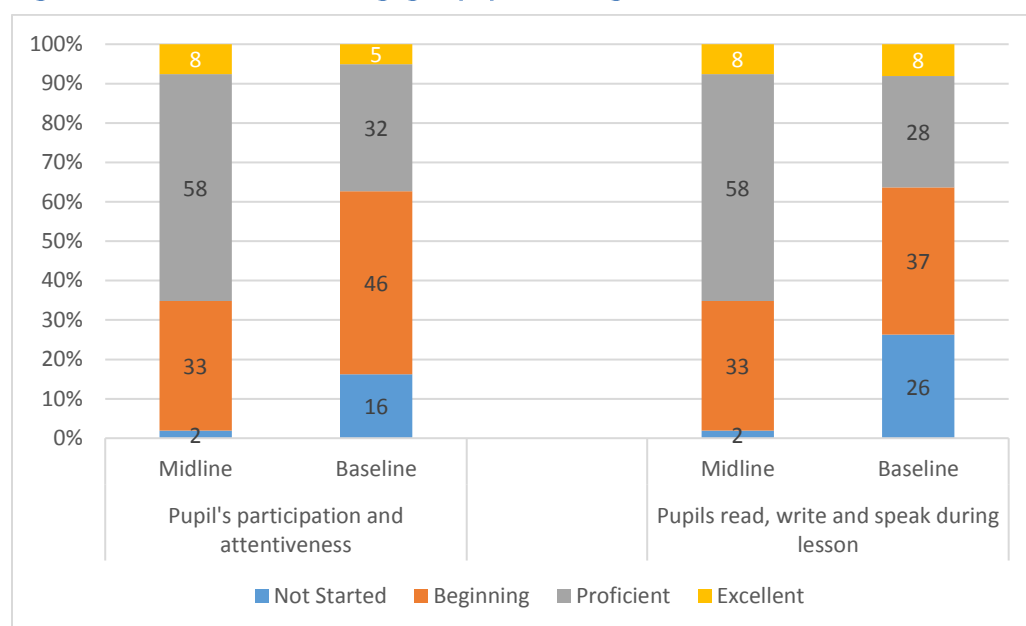


As in area 1, logistics regression reveal that the odds of being proficient in any of the above skills is significantly higher for teachers with a teaching certificate and teachers who were visited by a MEST supervisor during the year.⁶

The final practice area (Area 3) observed was how well the teacher engaged the pupils during the lesson. Here again, we see marked improvement in proficiency in these skills from the baseline to the midline. Sixty-six percent of teachers were reported to be proficient in getting pupils to participate and stay engaged in the midline review, compared to only 37 percent in the baseline (Figure 13). Similarly, 66 percent of teachers got pupils to read, write, and speak during the lesson as compared to only 36 percent in the baseline. Statistical analysis showed that female teachers are more likely than male teachers to be proficient in this skill area; similarly, teachers who were visited by MEST during the year were more likely to be proficient than those were not.

⁶ Logistic regression ($p=0.05$), and controlling for sex, teacher certificate, whether MEST visited, and whether they attended training

Figure 13. Area 3 Teacher engages pupils throughout the lesson

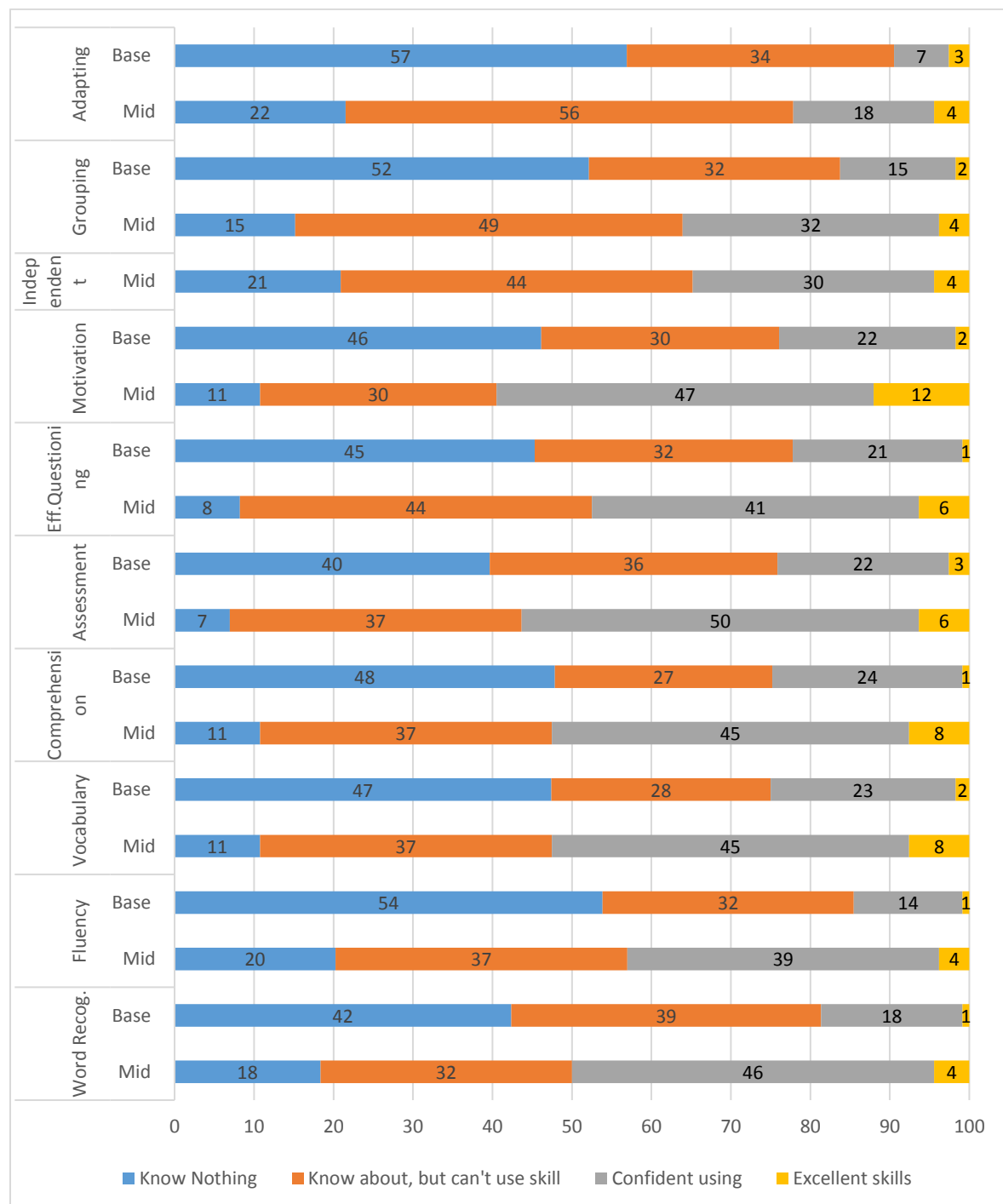


Self-reporting of knowledge of skills related to reading instruction

In addition to the observation of teacher practice, teachers had the opportunity to self-assess their knowledge and skills in areas related to literacy instruction. They could rate their abilities and confidence on a scale from 1-4 with 1 being “I know nothing about this”; 2 – “I know about this, but I do not know how to use it”; 3 – “I know about this and have some confidence in my abilities in this area; and 4 – “I have excellent knowledge and skill in this area”. The results are shown in Figure 14 for the baseline and midline assessments.

Compared to the baseline, more teachers expressed confidence in their ability to use the various teaching techniques at baseline and less teachers reported not knowing anything about the technique. For example, at baseline 42 percent of teachers said they knew nothing about “Word Recognition and Phonics”, whereas only 18 percent of teachers reported that at midline (Figure 14). Similarly, 53 percent of teachers reported being confident in comprehension teaching strategies compared to 25 percent at baseline.

Figure 14 Teachers' self-assessment of knowledge and skills in various teaching techniques

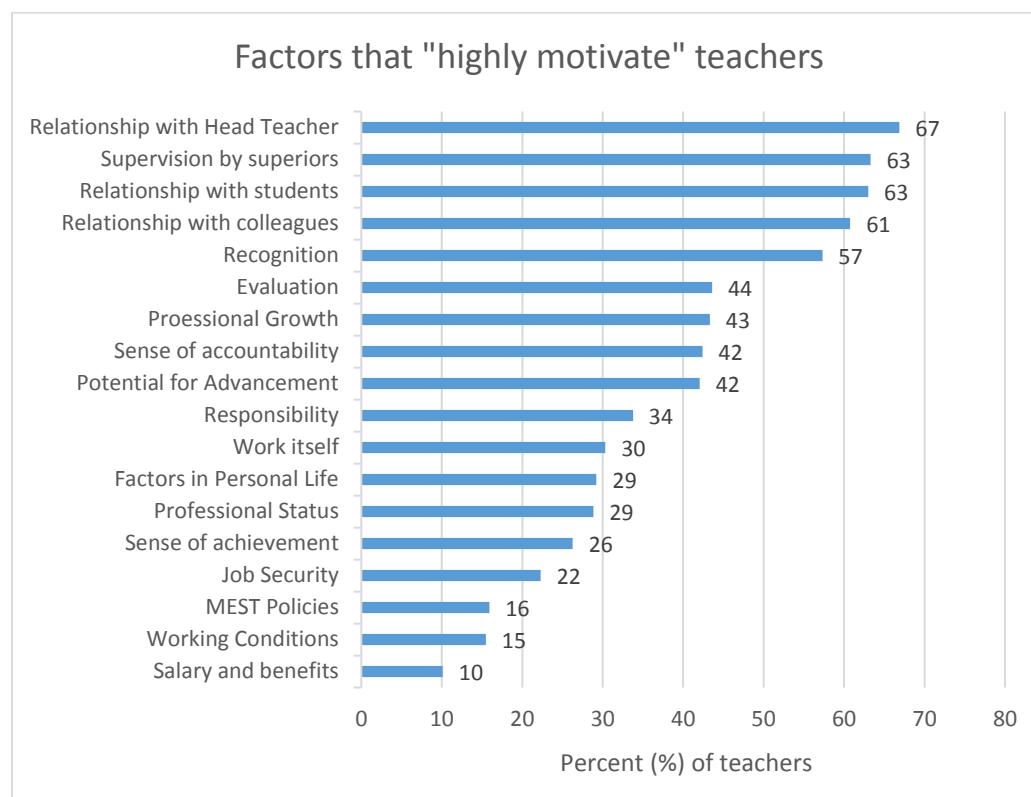


Teacher Motivation

To better understand what inspires teachers in their jobs, we asked teachers what aspects of their job they found motivating. When presented with the job aspect, teachers had to rank it from 1 to 5, with 1 being NOT motivating to 5 being highly motivating. Figure 15 reveals that most teachers are highly motivated by their

interpersonal relationships they have with head teachers, students and colleagues. However, very few teachers are motivated by job aspects related to remuneration, conditions of service, professional status, or MEST policies. The latter is not surprising since many teachers are volunteer teachers, who do not receive government salaries. While the MGD III project cannot address these issues, they can affect some by continuing to recognize teachers for their hard work and effort.

Figure 15. Aspects of their jobs that teachers find “highly motivating”



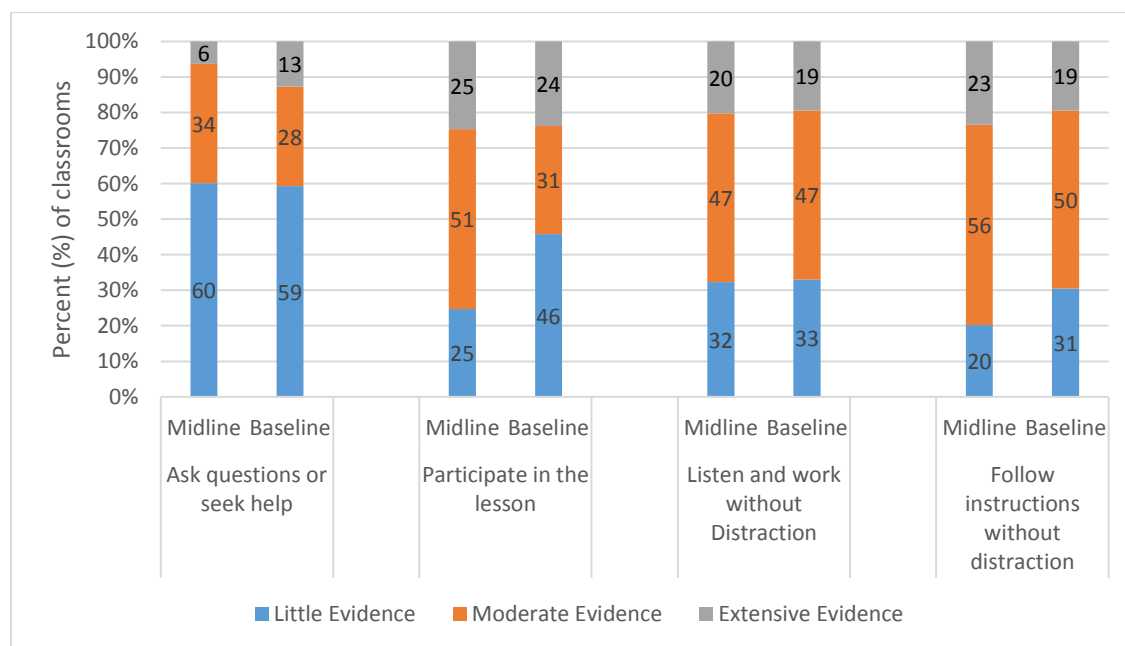
MGD 1.1.5 Increase knowledge and skills of administrators

Ninety-one percent of head teachers (all but 5) reported having attended training on DTM. In terms of the benefits perceived, most reported that the training helped them improve their teaching and the teaching of other teachers. Other benefits mentioned included improvements in school management, lesson planning, teacher observation and supervision, record keeping, and building relationships with teachers.

MGD 1.2 Improve pupil attentiveness

During the classroom observation, enumerators recorded what children were doing during the class time. Attentiveness was defined as pupils asking questions, actively participating in lessons, and following instructions without distraction. Figure 16 shows whether the observation saw little evidence (less than a third of class); moderate evidence (about half the class); or extensive evidence (more than a half of class) of attentive behaviors. Between the baseline and midline, pupils improved on their class participation and following instructions without distraction. For example, at midline 75 percent of classrooms showed at least moderate evidence of class participation compared to only 54 percent at midline. But there was no improvement in pupils asking questions and seeking help or with listening and working without distraction. The least practiced behavior was asking questions or seeking help from teacher. Teachers still need to do more to encourage pupils to ask questions when they are struggling with concepts for real learning to take place.

Figure 16 Percentage of pupils showing attentive behaviors in class

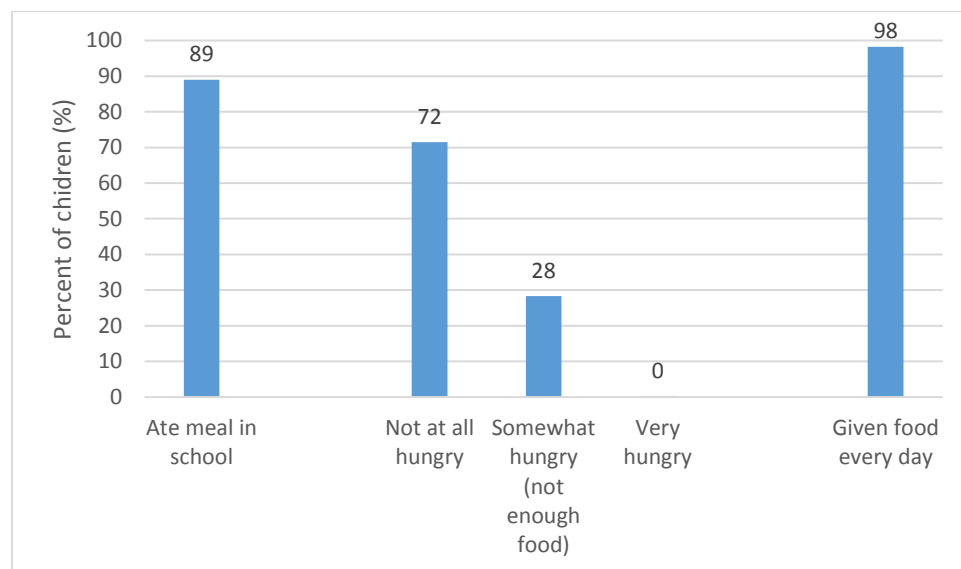


MGD 1.2.1 Reduced short-term hunger

At the time of the baseline, the school feeding had yet to start in the schools as none of the pupils interviewed reported receiving meals in school. At the midline survey, 98 percent of pupils interviewed reported receiving meals daily at school, but only 89 percent had had a meal at the time of the interview. Schools varied in when they serve

meals with 52 percent of children reporting meal times in the morning and 45 percent reported having meals in the afternoon. Of those who had eaten, 72 percent reported not hungry, while 28 percent reported they were still somewhat hungry.

Figure 17 Hunger status of children



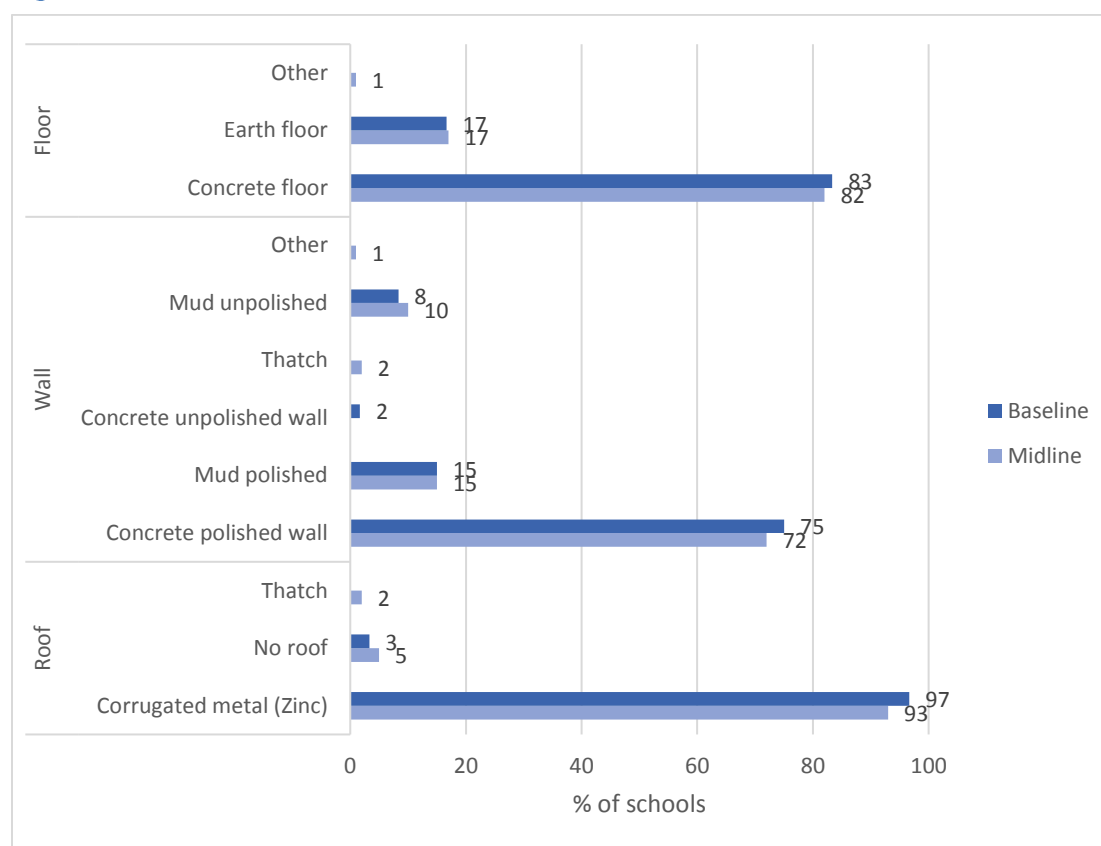
MGD 1.3 Improve pupil attendance

According to monitoring data from CRS, pupil attendance has increased significantly from the baseline. At the baseline about two-thirds of students were reported to be attending schools regularly, which is defined as students whose attendance rate is above 80 percent. A year later, 100 percent of students were reported to be attending school regularly.

MGD 1.3.3 Improved school infrastructure

Figure 18 shows the status of the school infrastructure at midline and baseline. Most schools are one building structures. The majority have corrugated iron roofs (93 percent), concrete polished walls (72 percent); and concrete floors (82%). The infrastructure remains relatively unchanged from the baseline. The project target is to rehabilitate 52 school buildings, and 19 buildings had been rehabilitated by end of August 2017. There were two schools that had no roofs, and these should be prioritized for renovation as this could hamper children's safety and ability to learn during extreme weather.

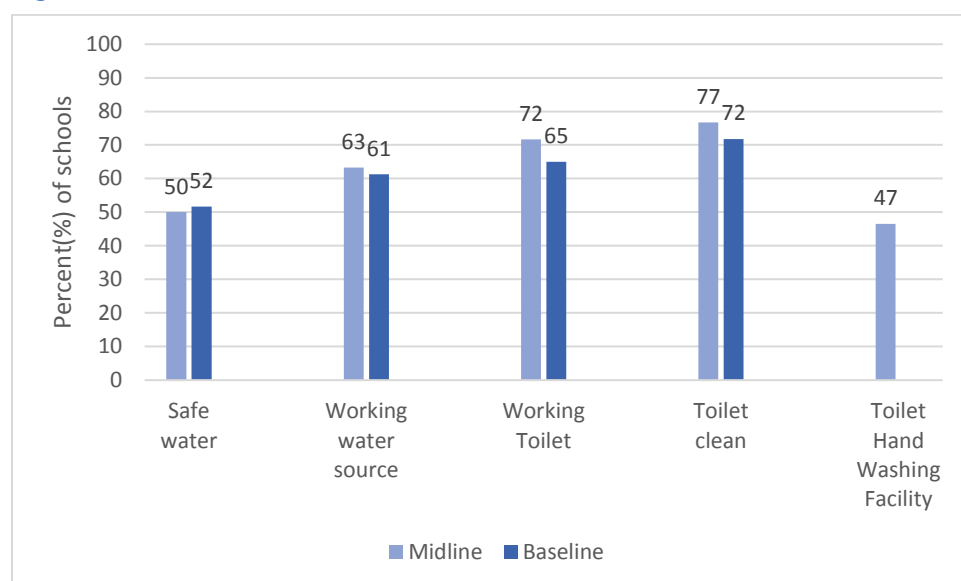
Figure 18 Status of School Infrastructure



Unlike the school buildings, the status of water and sanitation facilities (WASH) was quite poor. Only 50 percent of schools had a (potentially) safe source of water, and for almost all, it was a hand pump well. Furthermore, of those with water wells, 37 percent were not functioning (Figure 19). Less than half of schools had a hand washing facility at or near the toilet. The status of WASH facilities in the schools have remained relatively unchanged since the baseline despite this being a priority for the project.

Monitoring data and interviews with project personnel revealed that there are delays in the completion of WASH projects. Out of 62 planned toilets, 52 had been completed by end of August, and the remaining 10 are scheduled to be completed by the end of September. Caritas has installed 191 tippy taps (hand washing facilities) in 55 schools where school WASH Clubs have been formed. The project target is 80 schools. Twenty-five schools were slated to have new wells, but none of these projects have been completed. The project need to intensify its efforts in this area.

Figure 19 Status of water and toilet facilities in observed schools



Toilet facilities also need attention. Of the schools observed, only 65 percent had a functioning toilet and only 72 percent of those toilets were clean (Figure 19).

Furthermore, only 18 percent of toilets had a handwashing station with water and soap available.

MGD 1.3.4 Increased pupil enrollment

Pupil enrollment is tracked via project monitoring. As of June 2016, there were 28,463 pupils enrolled in project schools of which 48 percent were girls. A year later, in June 2017, school enrolment was 32,499 reflecting a 14 percent increase from the previous year. Enrolment of girls increase by 15 percent and in 2017 they made up 49 percent of enrolment.

Factors affecting reading performance

Overall, we can conclude that the MGD III has made progress towards the achievement of the strategic objective on improved literacy. The data shows remarkable increases in the percentages of children who can read, albeit from a very low base. Logistic regression analysis was conducted to predict whether a student will be able to read based on individual (gender, age, member of reading club) and school characteristics (whether the school is approved and percent of teachers qualified). The result is

presented in Table 6 and the dependent variable is whether the student can read and understand grade-level text (YES=1 if they got 4 of 5 comprehension questions correct, 0 otherwise).

Table 6. Results from Logistic Regression showing factors that predict whether a student can read and understand grade level text

Logistic regression						
			Num. of observations = 950			
			LR chi2(9) = 161.68			
Log likelihood = -552.87652			Prob > chi2 = 0.0000			
			Pseudo R2 = 0.1276			
	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
Male	1.474*	0.217	2.630	0.009	1.104	1.968
Age 6-11 yrs.	0.748	0.130	-1.670	0.094	0.533	1.051
Member of Reading Club	1.470*	0.238	2.380	0.017	1.071	2.018
School is approved by MEST	3.136*	0.692	5.180	0.000	2.035	4.833
Percent of qualified teachers	0.150*	0.056	-5.090	0.000	0.072	0.311
Chiefdom						
Mongo	4.806*	1.300	5.800	0.000	2.828	8.168
Neini	5.974*	1.542	6.930	0.000	3.602	9.906
Neya	0.637	0.188	-1.530	0.127	0.358	1.136
Dembelia	1.256	0.398	0.720	0.472	0.675	2.337
_cons	0.245	0.074	-4.640	0.000	0.136	0.444

Notes * Statistically significant at the .05 level.

N= 950; Adjusted R2 = 0.1276

The logistic analysis presents the odds ratios, and we can derive the following from the table:

- The odds that a student can read is statistically significantly impacted by their gender, membership in a reading club, attending an approved school, the share of qualified teachers in the school, and the chiefdom in which they live.
- The odds of being able to read for boys is 1.5 times that of girls
- The odds of being able to read for a child who is in a reading club is 1.5 times that of non-members
- The odds of being able to read is 3 times more for a student attending a school approved by MEST

- The odds of being able to read is less if you are attending a school with a higher percentage of qualified teachers
- The odds of being able to read for students living in Mongo is 4.8 times more than Sulima and for children living in Neini the odds are almost 6 times more than a child in Sulima.
- The age variable is not statistically significant

While the above analysis does not provide evidence of causation, the model is robust enough to inform our understanding of what predicts if a child will be able to read. The result that is most confounding is that related to the negative effect of the share of qualified teachers. One possible explanation is that despite the larger share of qualified teachers in a school, the qualified teachers are not usually assigned to teach the lower grades. This combined with the fact that teachers selected to participate in the distance education program come from schools with a lower percentage of qualified teachers (based on the project's selection criteria) would explain this result. It could also mean that there is a problem with this variable. This issue warrants further investigation, but removing this variable does not change the influence of the other variables in the equation.

MGD S.O.2 Increased use of good health and dietary practices

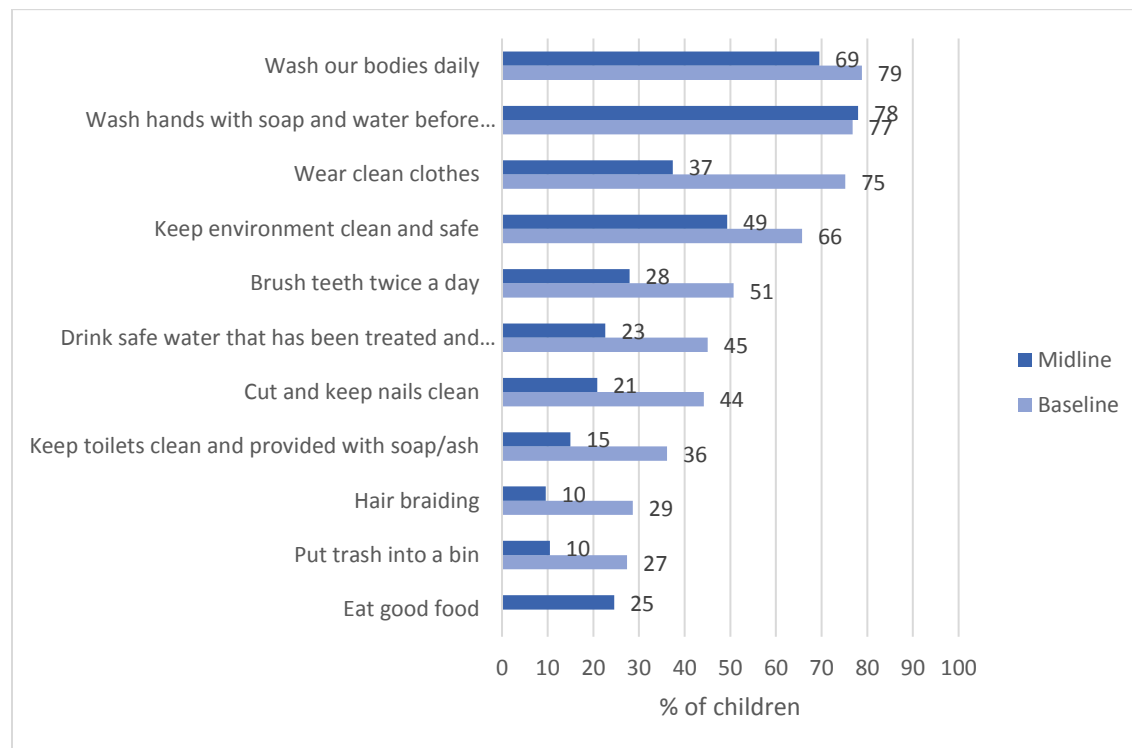
Under this strategic objective, MGD III trained the school communities on good practices related to health and dietary practices. Students and teachers were trained on good health and hygiene practices and cooks were trained on techniques for safe food preparation and storage. The project was also to provide better access to clean water through the development of wells. Finally, the project collaborated with partners such as Helen Keller International and UNICEF in the provision of deworming services to schools. Below we consider what effect these activities had in the increasing the use of good health and hygiene practices

MGD 2.1 Improved knowledge of health and hygiene practices

Pupils were asked about their knowledge of good health and hygiene, and their responses are shown in Figure 20. The most mentioned practices at the midline review were: washing hands with soap and water (79 percent) and washing daily (69 percent). The least mentioned practices were putting trash into bins (10 percent); hair braiding (10 percent) and keeping toilets clean (15 percent). Pupils fared much worse during the

midline than in the baseline in recalling their knowledge of basic hygiene: at midline only 12 percent of pupils could name 6 of 10 practices, compared to 49 percent of pupils at baseline. This drop in scores is unexpected and may be a problem with the data collection or coding.

Figure 20 Pupils' knowledge of good health and hygiene



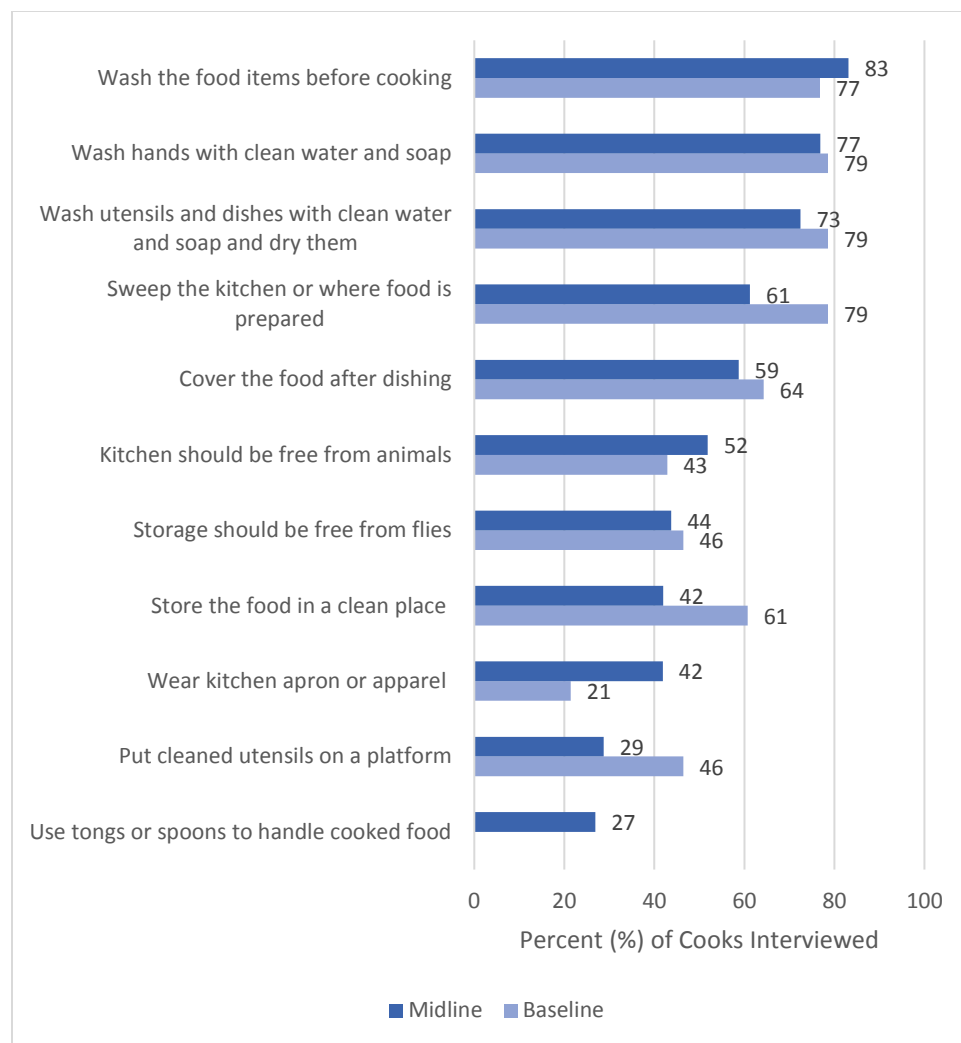
MGD 2.2 Increased knowledge of safe food preparation and storage practices

The team surveyed cooks to determine their knowledge and skills in safe food preparation and storage practices. A total of 160 cooks were interviewed (about 3 per school), and of those 86 percent reported having been trained on safe food preparation and storage practices. Those who were not trained were either new cooks to the school, were busy at the time of training, or were not selected to attend the training.

They were then asked to list examples of good practices in safe food preparation and storage practices, and these were checked against main messages delivered in the training delivered by CRS. Their responses are shown in Figure 21. The most commonly mentioned practices were: washing food before cooking (83 percent), washing hands with clean water and soap (77 percent), washing utensils and dishes with soap and

water and drying them (73 percent). The least mentioned practices were: using tongs or spoons (and not bare hands) to handle cooked food (27 percent) and putting clean utensils on a platform (29 percent). Forty-six percent of cooks could recall at least 5 of 10 safe food preparation and storage behaviors as compared to 60 percent at the baseline.

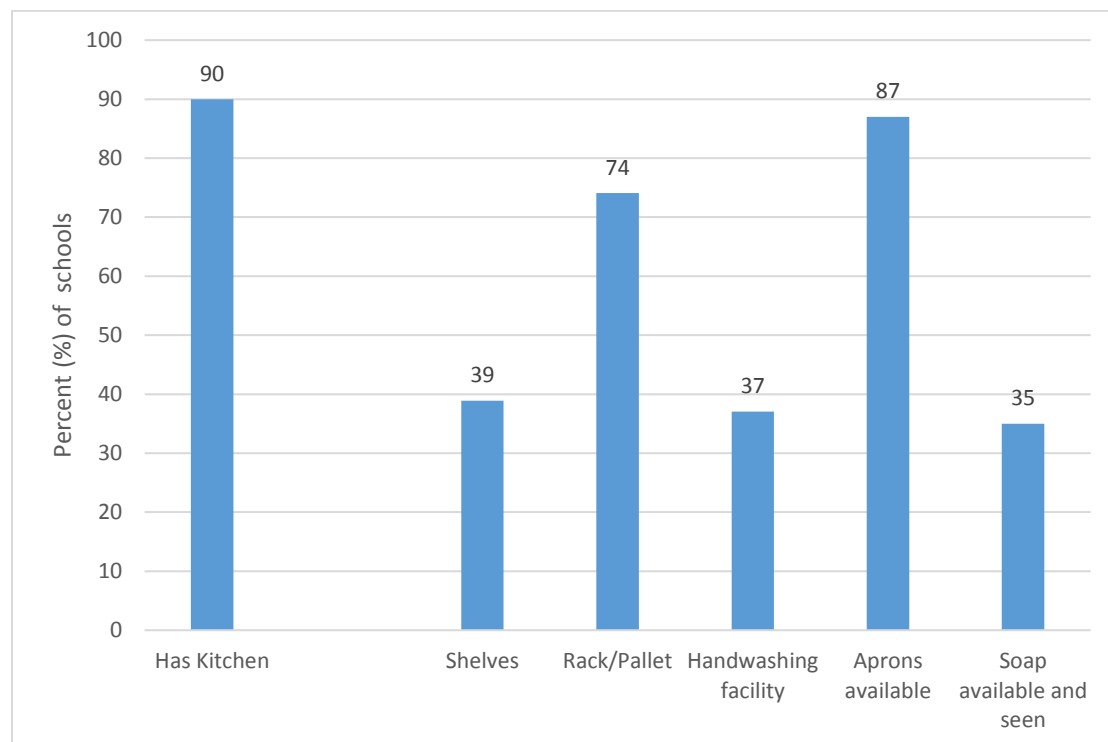
Figure 21 Cook's knowledge of safe food preparation and storage practices



When asked about challenges encountered as a cook, the main challenges identified were: lack of payment, lack of utensils, and lack of water. A few cooks mentioned lack of condiments, lack of a suitable kitchen, needing to take care of younger children, and lack of community support as other challenges. The project expects the cooks to volunteer their time and for communities to provide utensils and condiments to the schools.

During the school observation, enumerators checked the kitchen and food storage facilities and reported on these. Ninety-percent of schools had a kitchen (see Figure 22). Of the schools with kitchens, 39 percent had shelves, 37 percent had a handwashing facility, and 35 percent had observed soap. It is important that WASH situation be improved. Most of the schools had aprons and rack/pallets.

Figure 22. Status of Kitchens in Schools



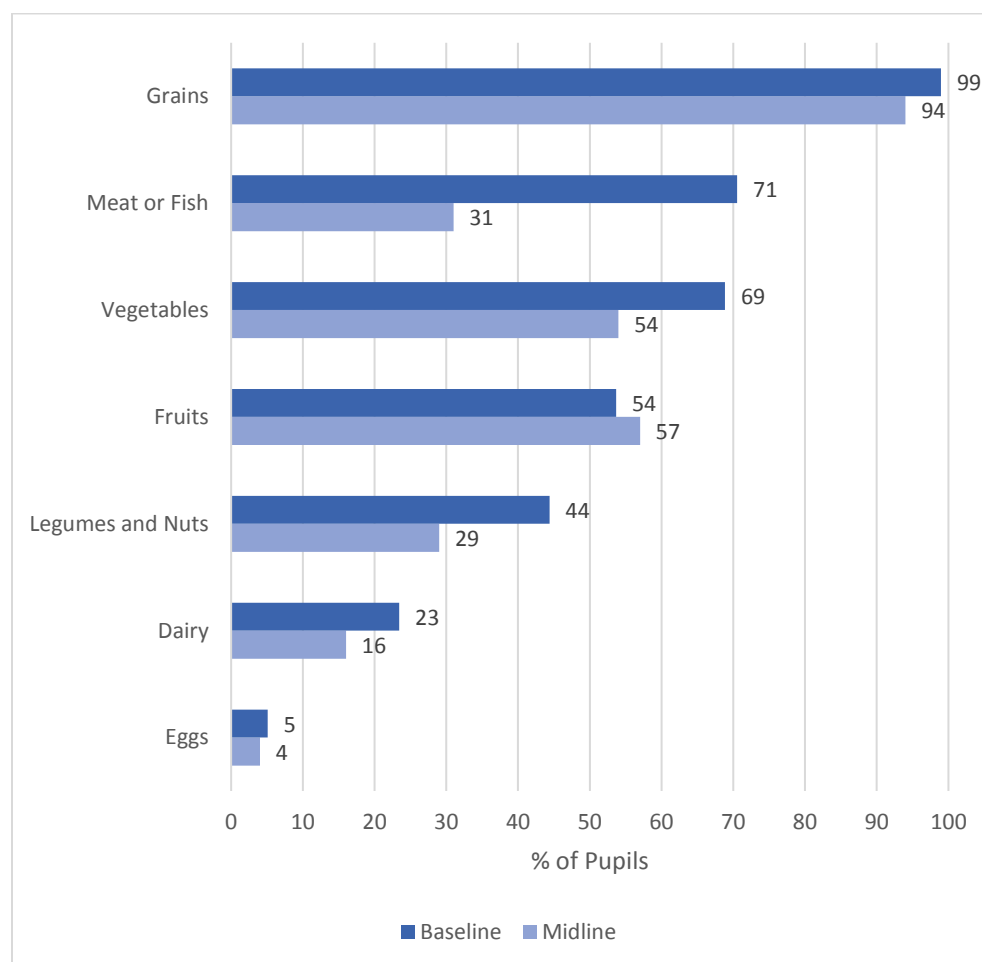
A similar 90 percent of the schools observed had a storage facility. Of those with storage facilities, 20 percent had ventilated blocks with mesh, 70 percent without mesh and 10 percent had no ventilated blocks. Seventy-two percent of store rooms were secured by a metal door with locks, 17 percent by a metal door without a lock, and 11 percent had no metal door.

MGD 2.3 Increased knowledge of nutrition

Pupils were not asked about their knowledge of nutrition, but they were asked about the types of foods they ate on the day before the survey. As Figure 23 shows, almost all children ate some form of grains (rice, cassava, etc.); 31 percent ate meat or fish; and 54 percent ate vegetables. Compared to the baseline, fewer pupils reported eating

all different food groups, save for fruits. Twenty-seven percent of pupils had a minimum acceptable diet that included at least 4 of the 7 identified food groups, which is much lower than the forty-two percent at baseline. This result is not trustworthy and may have happened because of difficulties with understanding the question, not remembering the foods consumed, or enumerators wrongly classifying the food. Most pupils reported receiving the CRS meal, which consists of lentils, vegetable oils, and rice. This should mean that at least three of the below food groups (legumes, grains, vegetables) should be near 100 percent.

Figure 23 Food groups contained in pupils' diet on the day prior to the survey



MGD 2.4 Increased access to clean water and sanitation services

As mentioned above in Section MGD 1.3.3, 48 percent of schools do not have access to a safe water source and 35 percent do not have access to a toilet. Soap is especially

rare both in the kitchen and toilet facilities. In only 8 schools (13 percent) did the enumerator see a soap in the kitchen area.

MGD 2.5 Increased access to preventative health services

The GOSL, with support from its donor partners, provide preventative health services, including deworming and preventative health services to school children. The Ministry of Health and Sanitation carries out the deworming exercise twice in a school year. CRS gives collaborative support to the process in terms of sensitization to communities and logistical support to enable medical staff to reach FFE-supported schools. However, 43 percent of head teachers reported that their school did not receive deworming services during the current academic year.

MGD 2.6 Increased access to requisite food preparation and storage tools and equipment

Cooks were asked about the numbers of food preparation and storage tools and equipment they had in their school. Their responses are summarized in Table 7. There are large differences amongst schools in terms of the quantities of kitchen equipment and serving utensils available. The baseline report recommended that CRS establish minimum standards for kitchen equipment and utensils and to ensure that all schools meet the minimum standards. However, per project staff, CRS does not provide utensils and it is up to the communities to provide the necessary utensils. During interviews with cooks, the lack of utensils and kitchen equipment came up as one of the challenges faced.

Table 7 Availability of kitchen equipment and Utensils

	Baseline			Midline		
	Avg.	Min	Max	Avg.	Min	Max
No. Big Pots	1	0	2	2	0	3
Big Bowls for cooked food	0	0	4	1	0	4
Big bowls for sauce	2	0	80	0	0	8
Wooden spoon	1	0	15	2	0	30
Scooping spoon	5	0	98	3	0	55
Serving Plates	29	0	160	29	0	250
Spoons	26	0	135	25	0	250
Buckets	1	0	5	2	0	10
Towels	3	0	80	2	0	6

	Baseline			Midline		
	Avg.	Min	Max	Avg.	Min	Max
Cups	25	0	130	24	0	250
Knives	0	0	15	0	0	3
Mortar	0	0	1	0	0	1
Mortar pestle	0	0		0	0	2

Progress on Key Performance Indicators

As part of the project monitoring of outputs and outcomes, the MGD III project has selected several indicators that will be used to monitor progress. During the baseline survey in 2016, information was collected on the starting point of several of these indicators and these are shown in Table 8. The values of these indicators were updated in June 2017 with data from CRS monitoring and the midline survey.

Significant progress has been made on many of the key indicators, especially on the literacy measures. The percentage of children who can read and understand grade level text quadrupled since the baseline, and the project is close to meeting its end of project targets.

Table 8 Key Performance Indicators: Midline, Baseline and End of Project Targets

Indicator	Baseline (2016)		Midline (2017)		End of Year 2 Targets		Comments
	Girls	Boys	Girls	Boys	Girls	Boys	
Percent of pupils who, by the end of two grades of schooling, demonstrate that they can read and understand the meaning of grade level text (girls/boys)	8.3%	7.9%	32%	39%	30%	30%	Percent of class 2 pupils who scored at least 80 percent in a reading comprehension test
Percent of pupils in target schools who are identified as attentive or very attentive during class/instruction (girls/boys)	58%		66%		80%		This is the percent of classrooms in which pupils were attentive or moderately attentive
Percent of pupils in target schools who indicate that they are hungry or very hungry during the school days (boys/girls)	92%	95%	26%	30%	0%	0%	At midline, this question was only asked of pupils who had been provided a meal
Percent of school-age children receiving a minimum acceptable diet (boys/girls)	55%	52%	28%	27%	100%	100%	Percent of school-aged children who report consuming at least 4 out of 7 food groups on the day prior to the survey, as defined by the MGD Indicator Handbook. This indicator is unreliable as we would expect different results given the school meal
Percent of pupils in target schools who achieve a passing score on a test of good health and hygiene practices (boys/girls) – 6 out of 10 practices	55%	44%	11%	13%	70%	70%	Percent of pupils who could name at least 6 of 10 good hygiene practices. Unclear whether this is a problem in the data or reflects the actual situation.
Percent of food preparers at target schools who achieve a passing score on a test of safe food preparation and storage	71%		46%		75%		Percent of cooks who could name at least 5 of 10 safe food preparation practices

Indicator	Baseline (2016)		Midline (2017)		End of Year 2 Targets		Comments
	Girls	Boys	Girls	Boys	Girls	Boys	
Percent of participants demonstrating at least 3 out of 5 social/life skills			78%		80%		CRS Indicator Performance Tracking Table
Percent of teachers in target schools who demonstrate use of new and quality teaching techniques or tools because of USDA assistance	27%		54%		100%		Percent of teachers observed that demonstrated proficiency in practice of checking for pupils understanding during the lesson, a foundation of DTM
Percent of pupils in target schools who attend school at least 80% of scheduled school days per school year	67%	66%	100%	100%	100%	100%	CRS Indicator Performance Tracking Table
Percent of administrators (head teachers) who demonstrate at least one new administration skill	72%		98%				Percent of head teachers who keep CRS attendance register
Number of teachers in target schools who demonstrate use of new and quality teaching techniques or tools as a result of USDA assistance	0		701		701		CRS Indicator Performance Tracking Table
Number of teachers trained or certified as a result of USDA assistance (MGD I-6)	0		296		300		CRS Indicator Performance Tracking Table
Number of school administrators and officials (head teachers) in target schools who demonstrate use of new teaching technique or tool as a result of USDA assistance	0		192		192		CRS Indicator Performance Tracking Table

Indicator	Baseline (2016)		Midline (2017)		End of Year 2 Targets		Comments
	Girls	Boys	Girls	Boys	Girls	Boys	
Number of SILC groups sharing out and starting a new cycle	0		42		60		CRS Indicator Performance Tracking Table
Percent of Parent-Teacher Associations or similar “school” governance structures contributing to their school as a result of USDA assistance			98%		100%		CRS Indicator Performance Tracking Table
Number of WASH Clubs formed	0		55		130		CRS Indicator Performance Tracking Table
Number of pupils receiving deworming medication(s)	28,463		32,042		30,919		CRS Indicator Performance Tracking Table
Number/% of schools using an improved water source (MGD I-19)	0		0		15		There is a delay in the construction of wells
Number of latrines constructed or rehabilitated with USDA assistance (MGD Indicator 7)	0		52		62		CRS Indicator Performance Tracking Table Construction of latrines is at 70% completion. Should be 100% completion by October 1.
Number of kitchens or storerooms constructed or rehabilitated with USDA assistance (MGD Indicator 7)	0		34		37		CRS Indicator Performance Tracking Table
Number of individuals benefiting directly from USDA funded intervention (male/female)	35,008		39,105		36,577		CRS Indicator Performance Tracking Table
Number of individuals benefiting indirectly from USDA funded intervention (MGD Indicator 26)	42,476		49,011		38,392		CRS Indicator Performance Tracking Table

Indicator	Baseline (2016)		Midline (2017)		End of Year 2 Targets		Comments
	Girls	Boys	Girls	Boys	Girls	Boys	
Number of social assistance beneficiaries participating in productive safety nets with USDA assistance (male/female) (MGD I-17)	35,310		39,076		36,548		CRS Indicator Performance Tracking Table
Number of daily school meals provided to school age children as a result of USDA assistance (MGD I-15)	0		3,883,887		5,351,299		CRS Indicator Performance Tracking Table
Number of pupils regularly (80%) attending USDA supported school (male/female)	9,169	9,776	15,647	16,541	14,573	15,083	CRS Indicator Performance Tracking Table
Number of text books and other teaching and learning materials provided as a result of USDA assistance	0		181,317		107,333		CRS Indicator Performance Tracking Table
Number of schools with improved early grade literacy instructional materials	0		192		192		CRS Indicator Performance Tracking Table
Number of community meetings held (CRS I-33)	0		57		52		CRS Indicator Performance Tracking Table
Number of literacy coaches trained in Diagnostic Teaching Methods as a result of USDA assistance (CRS I-6)	0		25		25		CRS Indicator Performance Tracking Table
Number of teachers trained in Diagnostic Teaching Methods as a result of USDA assistance (male/female) (CRS I-7)	0		701		701		CRS Indicator Performance Tracking Table

Indicator	Baseline (2016)		Midline (2017)		End of Year 2 Targets		Comments
	Girls	Boys	Girls	Boys	Girls	Boys	
Number of school buildings or classrooms constructed or rehabilitated as a result of USDA assistance. (MGD I-7)	0		19		52		CRS Indicator Performance Tracking Table
Number of classrooms in project schools receiving new school furniture (CRS I-18)	0		145		240		CRS Indicator Performance Tracking Table
Number of pupils enrolled in school receiving USDA assistance (male/female)	13,715	14,748	15,797	16,702	14,602	15,128	CRS Indicator Performance Tracking Table

RELEVANCE: TO WHAT EXTENT DOES THE PROJECT CONFORM TO THE NEEDS AND PRIORITIES OF TARGET GROUPS AND THE POLICIES OF THE COUNTRY AND DONOR?

The MGD III project, to a very large extent, conforms to the needs and priorities of the country, communities and USDA. At the policy level, providing school meals for all children, improving WASH facilities, and improving learning are all priorities of the GOSL and were part of the Government's Post-Ebola recovery program. The MGD III project therefore contributes to this national endeavor.

The interviews and focus group discussions at the community and schools also confirm that the MGD III project meets the needs of the communities. School feeding, provision of WASH facilities, and the training of teachers and cooks were very beneficial to the communities.

EFFICIENCY: HOW COULD INTEGRATION OF THE TWO STRATEGIC OBJECTIVES BE ENHANCED OR FURTHER LEVERAGED TO DEEPEN POSITIVE PROGRAM RESULTS?

Integrating health and education program within schools is an effective and efficient way to improve the overall well-being of children in the community. School-aged children are at risk of ill-health throughout their school years, which will impact on their ability to attend school regularly and on their academic achievement.

The MGD III project supports the healthy development of children in many ways including: providing nutritional meals, improving on WASH facilities, coordinating with other programs that provide deworming and Vitamin A supplementation, and training pupils and teachers on good WASH practices.

While these are all good activities, it is clear from the responses from interviews and FGDs that the needs in this area are large especially with regards to the provision of clean water and toilet facilities. Most schools still lack access to potable water and soap in schools is a rarity. CRS can further deepen its work with head teachers and other partners to help improve the WASH facilities.

Another way to integrate the two programs is to develop reading materials for pupils that incorporate key health messages that the project wants to promote in a fun and engaging way. A final recommendation from key stakeholders is to engage whole communities in this process so that pupils are encouraged to practice good health and hygiene outside of the school.

SUSTAINABILITY: TO WHAT EXTENT WILL THE BENEFITS OF THE PROJECT CONTINUE AFTER THE END OF THE PROJECT LIFE?

During the FGDs, the communities remain optimistic that they will be able to continue with various aspects of the MGD III project even after the project ends, including feeding, maintaining of school infrastructure, and continuing to send their children to schools. They suggest numerous strategies through which they would be able to do this including: establishing school farms/gardens, encouraging parents to make financial contributions, using SILC proceeds to continue to support the school, embarking on self-help projects, and obeying the laws to send their children to school.

While the optimism is encouraging, it is unclear whether they will be able to do all of this without the support of MEST and other partners. The communities are poor, and they struggle to provide even the condiments necessary to prepare the meals. It is possible that the MEST will be able to expand its National School Feeding programme to include Koinadugu district, but the funding for that programme is also uncertain.

Some recommendations from key stakeholders interviewed were that CRS should develop and begin an exit and sustainability plan.⁷ We also recommend intensifying efforts to receive MEST approval for schools. Over 75 percent of schools in this sample are unapproved. Of the unapproved schools, only 40 percent had even applied for approval. The reasons given for not applying included: not knowing or understanding

⁷ One respondent mentioned learning from the CAUSE Canada exit strategy. This is another organization that provided school meals in some schools in Koinadugu

the procedures, the head teacher being new to the school, and the school not meeting the minimum standards. These are all things that are actionable, and since CRS now has an Advocacy Manager, it is recommended that the field agents, with support of the Advocacy Manager, work with struggling schools to help them prepare their applications. If there are schools who do not meet the minimum standards, then CRS could target their resources to help these schools meet the minimum standards rather than spreading them thin across many schools. Schools that are approved are much more likely to get resources (financial, trained teachers, teaching and learning materials, etc.) from the government.

CONCLUSIONS & RECOMMENDATIONS

The overall conclusion is that MGD III has made good progress especially in strategic objective 1. We see marked increase in percentages of children who can read, which we haven't seen in earlier evaluations. These improvements were likely influenced by the increased resources dedicated to the literacy aspects of the program, most notably, the introduction of literacy coaches. On the other hand, progress in strategic objective 2 was limited. There were delays in the provision of improved WASH infrastructure (latrines, wells, and handwashing stations) and knowledge of good hygiene and safe food preparation practices appear diminished. Below are recommendations to strengthen implementation during the final year of the project.

IMPROVED LITERACY SKILLS

- *Teacher training:* while teacher practice has improved overall, there are still many individuals who have not mastered basic skills. The project should find a way of identifying these teachers and providing them with targeted support.
- *Use of teaching and learning materials:* while the project has distributed thousands of textbooks, these are not being used effectively in classrooms. In most classrooms, only the teacher has a text. Carry out a quick study on the use of TLMs and provide explicit instructions to teachers on how to use these textbooks in their lessons.
- *Class participation:* students, especially girls, should be encouraged to speak more and ask questions in class.

- *School approval:* work closely with schools and MEST to ensure that schools receive approval by MEST. There are still head teachers reporting that they do not know or understand the process for applying for school approval.
- *Community engagement:* engage parents and communities in support reading (and not just the feeding program). There are several ways that they can do this including reading to their children, telling stories, and providing space and time for children to read after school.
- *Girls and gender:* given the findings that girls are underperforming boys, issues of gender in teaching practice and reading should be explicitly addressed. Ensure that teachers are encouraging and paying attention to both boys and girls, that materials are gender-sensitive, and that training focuses on this issue. This is especially important given that the 90 percent of the teachers are male.

IMPROVED HEALTH AND HYGIENE PRACTICES

- Reinforce key hygiene messages throughout the curriculum and in extra-curricular activities
- The project should have a plan for training new cooks who enter the project midway and others who were not selected for the training. This might involve those who were trained passing on the information to others or MGD staff doing cluster trainings during the year.
- Schools should have supplies that enable children to practice what they have learned about good hygiene practices. For example, handwashing stations with water and soap should be present in all schools and kitchens and there should be bins for trash.
- Keeping school facilities clean should be a communal responsibility, and CRS should work with schools to develop strategies to maintain good hygiene practices. Only about 57 percent of the schools in the sample have a WASH club.
- Minimum standards for food preparation and storage tools and equipment should be developed together with the communities, and MGD III should ensure that schools meet the standard
- Over 40 percent of schools have not received the required preventative health services (e.g. deworming and vitamin A supplementation). MGD III does not itself provide these services, but it should advocate for supported schools with the appropriate agencies.
- Provide reading materials for children that reinforce health messages in a fun and engaging way
- Prioritize infrastructure and supplies that impact student safety and well-being. These include schools that have no working safe source of water, no working

toilet facilities, no hand-washing stations, and no roof. Soap (or other cleaning agents) and water should be mandatory in all school toilets and kitchen.

- Intensify efforts to complete the construction of wells and latrines

OTHER RECOMMENDATIONS

- Develop a sustainability plan with communities, local government and MEST to prepare for the end of the MGD III program.
- Collect further monitoring data on the coaching process that includes records of the number of times teachers are visited. If a structured observation tool is used, then that data should be analysed with a view to identifying areas for further refresher training.

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