



Benin McGovern-Dole Project

BASELINE EVALUATION

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Baseline Report Catholic Relief Services – United States
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(USDA) McGovern-Dole International Food for Education and Child
Nutrition Program Evaluation Award # FFE-680-2017/027-00
February 2019

Conducted by:
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The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official CRS or Government position, policy, or decision, unless so designated by other documentation.

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Abbreviations and Acronyms

AAM	Assessor Accuracy Measurement
AME	Mother Association (Association des Mères d'Élèves)
APE	Parent Association (Association des Parents d'Élèves)
ATPC	Community Led Total Sanitation (Assainissement Total Par la Communauté)
CCS	Head of School Districts (Chef de circonscription)
CRP	Education District Officer (Chef de Région Pédagogiques)
CI	First grade (Cours d'Initiation)
CLTS	Community Led Total Sanitation (idem ATPC)
CP	Second grade (Cours Préparatoire)
CP	Educational Adviser (Conseiller pédagogique)
COGES	Canteen Management Committee (Comité de Gestion des Cantines scolaires)
CRS	Catholic Relief Services
CWPM	Correct Words per Minute
DANA	Direction of Food and Applied Nutrition
DAS	Direction of School Feeding
DDHAS	Direction of Basic Hygiene and Sanitation (Direction département de l'hygiène et de l'assainissement de base)
DEP	Direction of Primary Education
DEMP	Direction of Preschool and Primary Education
DIIP	Direction of Pedagogical Inspection and Innovation
EGRA	Early Grade Reading Assessment
FFE	Food for Education
ICC	Intraclass Correlation Coefficient
INFRE	National Institute for Training and Research in Education
KII	Key Informant Interviews
MAD	Minimum Acceptable Diet
MEMP	Ministry of Preschool and Primary Education
MT	Metric Tons
ORF	Oral Reading Fluency
PfD	Partners for Development
PHAST	Participatory Health and Sanitation Transformation
PMP	Performance Monitoring Plan
PPS	Probability Proportion Sample
SFCM	Soy-Fortified Corn Meal
SO	Specific Objective

THR	Take Home Ration
TOR	Terms of Reference
UP	Unité Pédagogique
USG	United State Government
URP	Union Régionale des Producteurs
USDA	United States Department of Agriculture
WASH	Water Sanitation and Hygiene
WEI	World Education Inc

Executive Summary

Context and intervention

Catholic Relief Services (CRS) is implementing the second phase of a United States Department of Agriculture (USDA) McGovern-Dole International Food for Education and Child Nutrition Program, hereafter referred to as McGovern-Dole project, in two districts in Benin. CRS works in partnership with sub-partners World Education International (WEI), Caritas Kandi, Partners for Development (PfD) and Union Régionale des Producteurs (URP), as well as coordinates with government ministries and departments, principals, teachers, and parent groups.

The key objective of the McGovern-Dole program is to reduce hunger and improve literacy and primary education. The program provides school meals, as well as teacher training, health, sanitation, and hygiene interventions and other activities. The intended beneficiaries of the McGovern-Dole program are 50,965 primary school students in targeted districts of Borgou and Alibori Departments, their families, and communities.

Evaluation

This baseline study is the first major activity of the program's evaluation plan. The baseline evaluation serves three main objectives. First, it provides baseline values for key program indicators that will support CRS Benin to refine program targets and eventually modify or add custom indicators. Secondly, the study presents evaluation data and findings to inform the following research questions:

1. What are the participants' capacities, knowledge and level of behavioral change for dietary, hygiene and health practices (KAP Survey)?
2. What are the parents' knowledge, attitude and practices regarding supporting their children to be successful at school? (KAP Survey)?
3. Based on lessons learned from community participation in McGovern-Dole FY14, what strategies should be adopted to make this (program or intervention) a success under McGovern-Dole FY17?

Thirdly, it includes an improved theory of change and provides recommendations. The evaluation baseline is a quasi-experimental, mixed-methods design. Using probability proportionate to size, a sample of program and control schools were randomly selected from the CRS program implementing area. To provide baseline values for each of the indicators and responses to the three research questions, Et4d employed several quantitative and qualitative methods. The quantitative data collection tools included: An Early Grade Reading Assessment (EGRA), multiple questionnaires of students, parents, principals, teachers, cooks and store keepers, as well as administration of two observation tools – student attentiveness observation and school observation.

The qualitative component of the evaluation consisted of in-depth interviews with local government authority figures as well as non-governmental organizations (NGO) partners and focus groups discussions (FGDs) and key stakeholders, such as teachers, parents, and children who were also members of a WASH Club. Data was collected in schools which will receive the intervention (program schools), and in schools which do not have canteens (control schools).

Table Executive Summary 1: Summary of completed surveys

Type of data	Control	Project
EGRA + Student Survey	773	748
Observation + Student Survey	964	957
Parent Survey	513	517
Teacher Survey	98	96
Principal Survey	49	50
Cooks Survey	N/A	112
Storekeeper Survey	N/A	38
School observation	49	50

The control schools were in communes neighboring the intervention areas (Banikoara, Bembereke, Nikki and Sinende). They were selected to serve as a control group for the baseline, midline and end line evaluations; however— if a canteen is being established in any of the control schools, they will to be replaced.

Balance tests were performed to demonstrate the adequacy of the control group as a comparison. Statistically significant differences were noted when detected, but no weighting was applied to correct imbalances for the baseline results. If necessary, we will add propensity score matching to the difference-in-difference analysis at end line. Data has been weighted to represent the entire population of students, teachers, principals, or parents, within school clusters and strata of urban or rural schools.

Indicators

Results of the baseline study revealed that in some areas such as hygiene practices there were significant differences between control schools and program schools, which were most likely due to the lasting effect of the previous intervention, McGovern-Dole FY14. The study results suggested a need to revise the target values for the literacy indicator.

The baseline values and proposed targets for each indicator are illustrated below. The evaluation team included additional proposed custom indicators that would be useful to evaluate the impact of the program.

Table Executive Summary 2: Indicators from PMP

Indicator	Baseline Value	Proposed Target	Comments
Percentage of students who, by the end of two grades of primary schooling, demonstrate that they can read and understand the meaning of grade level text	Original: 2% Reality: 1%	Original: 32% Suggestion: 20%	The initial target included in the performance indicators (Attachment D) of 32% does not seem realistic, based on the very low EGRA score. Et4d propose to lower it to 13 %, which is still very ambitious. Currently 1%, to which 3% should be added every year.
Benchmark: 60% (3/5 correct answers)			

Indicator	Baseline Value	Proposed Target	Comments
Percentage of parents who report spending time on literacy activities with their students in the preceding three days	31.1%	N/A	This indicator might be subject to social bias and might give a partial view of the assistance received by students. Et4d suggests removing the indicator and replacing it by percent of students who report receiving help outside of school in the preceding three days
Percentage of students in target schools who are identified as attentive during class/instruction	67.6%	75%	Target could remain identical to McGovern-Dole FY14
Percentage of schools with soap and water at a hand washing station commonly used by students	54.4%	68%	Target is based on 25% increased practice.
Percentage of students in target schools who achieve a passing score on a test of good health and hygiene practices Passing Score: 70%	34%	40%	
Percentage of Children receiving a minimum acceptable diet	68.9%	75	Et4d suggest keeping this indicator. The current values are high because the schools are still providing food

Et4d proposed target values which we believe to be achievable and passing score values for the test of good health and hygiene practices, while CRS confirmed that the benchmark for the EGRA reading comprehension test should be 60% correct answers.

The evaluation team is proposing to collect data on the following six (6) custom indicators which will help evaluate new activities that we been added to project.

We would like to include some additional custom output indicators in the PMP to evaluate new activities included in the intervention, and to provide greater insights into some outcome indicators.

Table Executive Summary 3: Proposed new indicators

Indicator	Baseline Value	Proposed Target	Comments
Literacy Achievement Index	35	45	Et4d proposes this indicator, which gives a global indication of students' performance distribution on letter reading, reading fluency and reading comprehension subtasks, providing a broader picture of reading competence
Average student attendance rate in USDA supported classrooms/schools	88.2%	93%	This indicator was calculated based on USDA new requirements.

Indicator	Baseline Value	Proposed Target	Comments
			Control school had an attendance rate of 92%, project schools should have better results.
Percentage of students who report receiving help outside school in the preceding three days	64.8%	70%	Values are already high, but improvements can be achieved
Percentage of parents in target schools who achieve a passing score on a test of good health and hygiene practices	45.9%	60%	Et4d suggests adding this indicator. Parents in control schools had a 55% passing rate. Therefore, 60% seems achievable.
Passing Score: 80%			
Percentage of schools meeting WASH-Friendly School standards	N/A	80%	This indicator needs to be defined based on criteria which defines a WASH-Friendly school
Percentage of puberty-aged children who achieve a passing score on the test of puberty health and hygiene test	N/A		Target and a passing score could be established during the midline evaluation
Add specific custom output indicators for the activity undertaken by World Education International (WEI) based on the updated program design, they could include literacy events organized, library created, community of practice meeting held, etc.	N/A		WEI activities were agreed upon and defined precisely during early January discussion. Therefore, the updated PMP could be more specific in terms of output indicators.

Question #1: What are the participants' capacities, knowledge and level of application of dietary, hygiene and health practices?

To assess the level of knowledge and behavior change related to proper hygiene and health practices, the evaluation team collected data from teachers, parents and students. Overall, the data showed that hygiene and health prevention best practices are well known by children and parents alike across both control and intervention schools. Concerning the level of practice, it appears that students and parents report washing their hands with a higher propensity in program schools than in control schools. For water treatment practices, parents in program schools are more likely to treat the water before drinking it. These results are very encouraging, and it is highly likely that these levels of practice are due to the program activities implemented during McGovern-Dole FY14.

Based on teachers' feedback, practices could still be notably improved by increasing children's awareness of the risk factors involved if not applying improved/best hygiene practices. The WASH-friendly schools and the Community-Led Total Sanitation interventions should help reinforce the importance of hygiene practices and behaviors.

Unfortunately, among parents, knowledge regarding the importance of proper dietary balance remains very low. Mother Association members (AME) have been trained on balanced diet issues, but their acquired knowledge and practices did not spillover to other community members. Practices are also very poor, partially because of the lack of awareness, but mostly because parents have no access to proper food or no means to acquire it.

Question #2: What is the parents' knowledge, attitude and practices regarding supporting their children to be successful at school?

EGRA scores revealed that parental involvement had the strongest association with improved student reading. Therefore, it appears essential to encourage parents to play an active role in their children's education.

In our inquiries, we looked at parents' or caregivers' involvement broadly. We expanded our inquiries beyond structured help such as assisting students with homework and practicing lessons. We included different aspects of parents' engagement in education such as telling stories, discussing students' school experience, and encouraging their children to do well in school. These components of parents' engagement are related to some of the parents' involvement in improvement activities planned for McGovern-Dole FY17, such as radio story-time, as well as community library and awareness campaigns.

Teachers expressed that parents were not providing enough support and attention to their children's homework. They communicated to us that parents often barely knew which grade their children were enrolled in and whether they were able to follow instruction in class.

Overall, the proportion of parents who reported that their children were **told stories** is relatively high; and the information reported by students was significantly higher in program schools, where 44% of students reported that someone told them stories versus 24% in control schools. Based on these data, it seems that McGovern-Dole FY14 intervention might have produced some lasting behavioral changes on parents of early grade children.

The second aspect of engagement considered was whether **parents talk daily with their children about their school experience**. Parents overwhelmingly reported that they asked their child what they had learned that day. The analysis shows that it was more likely to be the case in program schools than in control schools. However, the parents' education appears to be a major influential factor and, unsurprisingly, literate parents are more likely to inquire about their child's day than illiterate parents.

The last aspect investigated was parents' **feedback and attitude** when their child received good or bad grades. The parents overwhelmingly responded that they encouraged their child, while children reported that their parents did nothing when they received good grades. Parents and children alike reported that the most common reactions to bad grades were scolding, punishment or being hit. In Benin, there is still a widely held belief that harsh parental action leads to higher academic achievement. Some anti-punishment or positive reinforcement awareness campaigns might be useful to encourage parents to change their attitude and provide more encouragement to their children.

Despite the empirically proven benefits of parent engagement in their children's education, there are many factors that impact families' ability or willingness to support their children's learning. For instance, one of the key aspects to keep in mind is that about 70% of parents in northern Benin are illiterate (see table 13). Therefore, most of them report that they feel a sense of inadequacy when it comes to helping their children with their homework.

Question #3: Based on lessons learned from community participation, what strategies should be adopted to make this a success on McGovern-Dole FY17?

Achieving a high level of community participation is necessary to operate a program smoothly and successfully, as well as to ensure sustainability. CRS identified three main areas of possible concern for McGovern-Dole FY17: 1) difficulties to find volunteers, 2) frequent complaints from the cooks, and 3) challenges to collect parents' financial contribution for school meals.

During our evaluation, principals did not report volunteer **recruitment challenges**, even if it was the case when McGovern-Dole FY14 was initiated. Most cooks work every day and have been doing so for the past four years. Cooks **complain** mostly about not receiving adequate compensation for their work, not having soap to wash their apron, and not receiving a medical check-up. Nonetheless, the evaluation team did not feel that the complaints led to any serious decline in their motivation to remain active with the program.

Several principals mentioned difficulties encountered with collecting parents' **financial contribution**. We identified four modes for collecting the contribution, depending on the community, and source of the parents' revenues.

1. Collecting the contribution from the students daily via the teachers
2. Collecting the contribution from the students weekly via the teachers
3. Collecting the contribution from the parents monthly or per term via the AME/APE
4. Collecting the contribution from the harvest fund yearly

Parent Association (Association des Parents d'Élèves) (APE) members reported that the difficulties initially encountered to collect the contributions for the canteen have lessened over the course of the McGovern-Dole FY14 program. However, it might be beneficial for CRS to renew its guidance on best practices, based on the latest practices experienced by different participating schools.

1 Introduction

1.1 Context

Benin is one of the world's poorest countries, with an annual gross domestic product per capita of US\$2,266, which is below the Sub-Saharan Africa average of US\$3,806.¹ The United Nations Development Program (UNDP) ranks it 163 out of 189 countries on the Human Development Index. Poverty is highest in northern Benin, where Catholic Relief Services (CRS's) McGovern-Dole program is implemented.

French is the official government language of Benin and the only language of instruction. However, indigenous languages such as Fon and Yoruba are commonly spoken, and Benin has over 50 indigenous languages in total. In the northern region, where CRS is implementing the McGovern-Dole project, the four most common languages are: Bariba, Dendi, Peulh and Mokole; it is important to note that children entering primary school do not speak any French.

Social services are lacking in the north, as exemplified by an insufficient number of primary schools. Although the four targeted departments (regions)² in Northern Benin represent almost 75% of Benin's land mass, fewer than half (48%) of the country's primary schools³ are located there- resulting in schools being very remote for many school-aged children to attend. Local customs and beliefs place little value on education; and parents—most of whom are poorly educated themselves—are generally not involved in their children's education⁴. Moreover, poor nutrition due to lack of availability of food and dietary diversity—compounded by a severe, annual dry season (December to April)—affects children's ability to learn and grow. Borgou and Alibori Departments in particular receive little assistance from either the government or non-governmental organizations (NGOs) to support their school canteens.

Recently, the Government of Benin (GoB) has made an important political commitment to support⁵ school canteens. For the 2016-17 Government Budget, the budget for school feeding programs has increased from 1 billion West African Franc (CFAF⁶) to 7 billion CFAF, and reached the goal of 51% of all primary schools implementing a school feeding initiative

Figure 1: Departments (Regions) and Communes of Benin



¹ The statistics provided in this section are from the latest UNDP Human Development Report (2018) and the World Bank Database (2017) World Bank, International Comparison Program database.

² Northern Benin includes 4 departments (or regions): 1) Atakora, 2) Alibori, 3) Donga, and 4) Borgou

³ Benin's primary school system has three cycles featuring six types of introductory, preparatory, elementary and middle-level classes with the following levels: Grades 1-2 (CP-CE1), Grades 3-5 (CE2- CM1-CM2).

⁴ MCGOVERN-DOLE FY14 – Final evaluation - Advisem

⁵ Canteen will be created, and food provided in the selected schools, similar to the model implemented by CRS

⁶ CFCF is Communauté Financière d'Afrique which is the West African Franc (1 billion =1.7 Millions USD)

1.2 Project description

Catholic Relief Services (CRS) Benin implemented a United States Department of Agriculture (USDA) McGovern-Dole International Food for Education and Child Nutrition Program, entitled Food for Education (McGovern-Dole FY14) from 2014 to 2017, hereafter referred to as McGovern-Dole. In 2017, CRS was awarded funding from the USDA for the second phase (2018-2022) of the Food for Education project in Benin, referred to as McGovern-Dole FY17. Unfortunately, due to a teachers' strike which took place from mid-January to April 2018, the project launch date was postponed until March 2019. However, since not all the USDA commodities had been used under McGovern-Dole FY14, the school feeding program from McGovern-Dole FY14 was sustained during the first term of the 2018-2019 school year (September to December).

For McGovern-Dole FY17, CRS will continue to work in the same communities, with the same 144 schools in Gogounou, Malanville, and Kandi Communes (Alibori Department), and Kalalé Commune (Borgou Department)

McGovern-Dole Phase II, similar to McGovern-Dole Phase I, focuses on improving the literacy, health and dietary practices of school-age children (grade 1 and 2) in northern Benin. The objectives of McGovern-Dole FY17 project are:

- To improve the literacy of school-age children by improving the quality of literacy instruction, improving attentiveness, and improving student attendance;
- To improve student attentiveness by providing school meals;
- To improve student attendance through raising awareness of the importance of education, enrollment campaigns, and training parent-teacher associations (PTAs);
- To increase the use of health and dietary practices by improving knowledge of health and hygiene practices, increasing knowledge of safe food preparation and storage practices, increasing knowledge of nutrition, increasing access to clean water and sanitation services, and increasing access to requisite food preparation and storage tools and equipment.

McGovern-Dole FY17 will build upon the achievements of McGovern-Dole FY14, with plans to complete or transfer activities to the communities and government by the end of the project. With the McGovern-Dole FY17 project, CRS wishes to sustain a healthy learning environment for children at home, in the community, and at school. The project will strengthen local, regional, and national institutions such as the Mothers Associations (AMEs), school districts, and the National Institute for Training and Research in Education (INFRE). McGovern-Dole FY17 will strengthen literacy activities by expanding and improving teacher training, establishing bi-monthly story clubs, as well as training parents on students' literacy progress and weaknesses with devised appropriate action plans. The project will also expand activities from the schools into the communities. For example, there will be community outreach through Participatory Health and Sanitation Transformation (PHAST) activities to improve water, sanitation and hygiene behaviors through Community-led Total Sanitation (CLTS) implemented along with literacy activities via community story hours and children's radio literacy programs. Finally, McGovern-Dole FY17 will strengthen the enabling environment to improve the quality of education through advocacy with government to prioritize primary education and health-related initiatives in its national strategies and agendas.

McGovern-Dole FY17's school feeding program will require 6,610 metric tons (MT) of USG donated Soy-Fortified Corn Meal (SFCM), green split peas, rice, lentils, and vegetable oil commodities. McGovern-Dole FY17 will distribute take-home rations (THR) consisting of 4 liter of vegetable oil per student, to male and female students in grades 4 to 6 who have achieved 90% or above attendance during the previous three months in year one (2019) of the project. In years two, three, and four (2020-2022), a THR, consisting of 4 liter of vegetable oil per student, will be distributed to male and female students in grade 6 who achieved at least 95% attendance rate

over three months. In order to phase out the McGovern-Dole project, school feeding will be sustained through gradual community contributions and capacity building. The project will establish community farms that will contribute food to school meals and sell food products in local markets as a source of income and revenue for school activities. McGovern-Dole FY17 will continue community nutrition education and outreach activities such as media programs, mothers' clubs, listening and discussion groups established under McGovern-Dole FY14 to improve dietary diversity and nutritional status. The project will also continue to support the school gardens established under McGovern-Dole FY14 for use as demonstration plots for growing nutritious and dietary diverse foods. As in McGovern-Dole FY14, the McGovern-Dole FY17 project will promote WASH-clubs and WASH-friendly schools, rehabilitate or construct water systems and latrines, and promote menstrual hygiene awareness and management⁷.

CRS Benin will work with its partners and sub-recipients, including World Education Inc. (WEI), Caritas Kandi, Regional Union of Producers (Union Régionale des Producteurs or URP) and Partners for Development (Pfd). CRS Benin will also collaborate with the Ministry of Pre-school and Primary Education (Ministère de l'Enseignement Maternelle et Primaire or MoE), the Administration of School Feeding (Direction de l'Alimentation Scolaire or DAS), the Administration of Food and Nutrition (Direction de l'Alimentation et de la Nutrition Appliquée or DANA), the National Institute for Training and Research in Education (INFRE), the Department of Public Education, the Direction of Pedagogical Inspection and Innovation, the national council on Education, the Ministry of Secondary Education and Vocational Training, Directorate of the Family and Social Affairs (DGFAS) of the Ministry of work, Public Function and Social affairs, the Ministry of Plan and Development, the Ministry of Agriculture Livestock and Fisheries, the Ministry of Water and the Ministry of Health.

1.3 Program activities

To achieve the aforementioned strategic objectives and expected results, the project will carry out the following activities:

1. Building and rehabilitation of improved latrines
2. Building and rehabilitation of wells and water stations
3. Capacity building at local, regional, and national levels
4. Scaling-up of WASH-friendly schools
5. Distribution of school supplies and materials
6. Establishment of activities to promote literacy
7. Establishment and maintenance of school gardens
8. Establishment of community farms
9. Promotion of teacher attendance
10. Provision of school meals (lunch)
11. Provision of take-home rations of food
12. Raise awareness of the importance of education
13. Training on food preparation and storage
14. Training on good health and sanitation
15. Training for parents-teachers association
16. Training for teachers and school administrators

1.4 Evaluation purpose

⁷ CRS Evaluation Plan for McGovern-Dole 2017-2022

The baseline study will **first** be used to refine program targets for indicators included in the Performance Monitoring Plan (PMP) and eventually modify or add custom indicators. The results will serve as the reference point to measure McGovern-Dole FY17 progress in the midterm and final evaluations. The baseline evaluation will establish baseline values for the following indicators (Table 1). All results will be disaggregated by gender.

Table 1: Baseline values and proposed targets for project indicators

	Indicator	Baseline Value	Proposed Target
1	Percent of students who, by the end of two grades of primary schooling, demonstrate that they can read and understand the meaning of grade level text Benchmark: 60% (3/5 correct answers)	1%	20%
2	Percent of parents who report spending time on literacy activities with their students in the preceding three days	31.1%	N/A ⁸
3	Percentage of students in target schools who are identified as attentive during class/instruction	67.6%	75%
4	Percent of schools with soap and water at a hand washing station commonly used by students	54.4%	68%
5	Percentage of students in target schools who achieve a passing score on a test of good health and hygiene practices Passing Score: 70%	34%	40%
6	Percentage of Children receiving a minimum acceptable diet	68.9%	75%

Secondly, it will respond to the following research questions (Table 2):

Table 2: Research questions

1	How will the targeted interventions increase the participants' (students and parents) capacities, knowledge and uptake of dietary, hygiene and health practices and behaviors? (measured through a KAP Survey)
2	What is the parents' knowledge, attitude and practices regarding supporting their children to be successful at school? (measured through a KAP Survey)
3	Based on lessons learned from the previous McGovern-Dole FY14, what strategies should be adopted to increase community participation?

Thirdly, the evaluation will be used to refine the projects theory of change and provide recommendations.

⁸ Et4d suggested replacing this indicator, therefore we did not propose a target value

2 Methodology

2.1 Evaluation design

The baseline evaluation is grounded in a quasi-experimental, mixed-methods design. Using probability proportionate to size (PPS)⁹ sampling method a sample of both program and control schools were randomly selected from the CRS project implementation area.

To provide baseline values for each of the indicators and responses to the three research questions, quantitative and qualitative methods were employed. The quantitative data collection tools include: An Early Grade Reading Assessment (EGRA), questionnaires for students, parents, principals, teachers, cooks and store keepers, as well as two observational tools – 1) a student attentiveness observation and 2) school observation.

The qualitative component of the evaluation consisted of 1) key in-depth interviews with authority figures and NGO partners and 2) focus groups discussions (FGD) with key project stakeholders including teachers, parents, and children who were also members of WASH clubs.

To control for any important effect on the results due to schools' characteristics, an equivalent sample of schools from both urban and rural populations were selected. The difference between the program schools and the control schools is described in the school sampling section (Section 2.3) Any differences will be taken into consideration at the end line by using the propensity scores matching (PSM)¹⁰ approach to correct for group non-equivalence. Before running the difference-in-difference analysis for the outcomes, we will compute propensity scores, based on any significant differences at baseline, that will be added to the difference-in-difference regression analysis to control differences between groups.

2.2 Data collection sources

As described above, the evaluation design features five data collection methods: 1) a document/literature review, 2) the EGRA assessment, 3) six survey questionnaires, 4) focus group discussions (FGDs) and 5) key informant interviews (KIIs).

Document review

The document/literature review consisted of a thorough examination of program documentation provided by CRS relevant to McGovern-Dole (FY14 and FY17) project activities in Benin. This review led to the development of the inception report and the data collection tools. The documents included:

- The three reports related to McGovern-Dole FY14 (Baseline, Midline, Endline)
- The data collection instruments used for McGovern-Dole FY14
- CRS' McGovern-Dole FY17 agreement with USDA and the
- Performance Monitoring Plan (PMP)

⁹ PPS: Probability Proportionate to Size is a sampling method in which the probability of selecting a unit is directly proportional to the unit's measure of size.

¹⁰ PSM: Propensity Score Matching is a statistical matching technique that attempts to estimate the effect of a treatment, policy, or other intervention by accounting for the covariates that predict receiving the treatment

The TOR was drafted in 2017 and since then while CRS asked Et4d to work with an updated version of the PMP. As a result, some indicators were modified and needed to be clarified for the evaluation team during a kick-off meeting in Cotonou with the M&E team and the Chief of Party.

EGRA

In preparation for the EGRA, the evaluation team reviewed the existing EGRA tool designed under McGovern-Dole FY14. Since it had already been used in three prior evaluations and was also used as a monitoring tool by World Education Inc (WEI), it was not possible to use the original tool for the McGovern-Dole FY17 baseline. Moreover, the tool was designed without considering the latest EGRA standards (Second Edition of the EGRA Toolkit¹¹). Thus, Et4d adapted the tool with CRS' consent, particularly the listening and reading passages, as well as the comprehension questions. Unfortunately, WEI or INFRE did not validate the instrument, since the timing of the evaluation did not allow for an instrument design workshop or piloting. The instrument's items are featured in Annex K. The Early Grade Reading Assessment (EGRA) was administered one-on-one to students in grade 3, which was considered an acceptable proxy for the assessment of reading and comprehension skills in French at the end of grade 2. It is planned, as part of MGD II to hold a workshop with INFRE in April 2019 to update the EGRA tool used in Benin. However, in order for the new tool to be used for midline and endline evaluation, WEI will need to equate the tools.

Surveys - questionnaire

To establish baseline values for indicators and to collect data related to the three research questions, the evaluation team used six survey questionnaires.

- **1. Principal questionnaire:** To collect school level data, teacher attendance, and evaluate parent's involvement in school activities. See survey tool in Annex A.
- **2. Parent questionnaire:** To assess WASH and nutrition knowledge and practices, and their involvement in students learning and in school activities. See survey tool in Annex B.
- **3. Teacher questionnaire:** To determine teacher motivation to stay in the same school and extent of parent's involvement in students learning. See survey tool in Annex C.
- **4. Student questionnaire #1:** To assess WASH and nutrition knowledge, practices and behaviors and to measure students' dietary diversity. See survey tool in appendices Annex D.
- **5. Student questionnaire #2:** To understand parents' and families' involvement in learning activities. See survey tool in appendices Annex E.
- **6. Cook and storekeeper questionnaire:** To gauge knowledge of WASH practices and behaviors in food storage and preparation. See survey tool in appendices Annex F.

Student attentiveness observation

At each of the 100 schools visited, the attentiveness of students during classroom instruction was assessed in two randomly selected classrooms (grades 4, 5 or 6). Within each classroom, 10 randomly selected students were deemed as attentive or inattentive at the time of observation, following a method similar to what was performed for McGovern-Dole FY14. Girls and boys were

¹¹ RTI International. (2015). Early Grade Reading Assessment toolkit, Second Edition, prepared for USAID under the Education Data for Decision Making (EdData II) project, Research Triangle Park, NC: RTI. <https://www.eddataglobal.org/documents/index.cfm?fuseaction=pubDetail&id=929>

differentiated in the data recorded, which showed that an equal number of girls and boys were observed.

School observation

The evaluation team conducted two field observations. The first was to observe at the school if water and soap (or the locally-accepted substitute ash) were available at hand-washing stations and whether hand-washing stations were properly used. The second was a general observation of the physical school environment (e.g. examining the condition of kitchens, storage rooms and latrines). These observation tools are featured in Annex G.

Focus group discussions

Focus group discussions (FGDs) were held in each of the four communes with parents and teachers as well as children from the WASH clubs. Each of the FGD was held separately. As illustrated in Table 3, 12 children from three communes participated in the WASH club focus group discussions. The number of children in each FGD ranged from one in Kandi to six in Gogounou.

Table 3: FGDs with Child WASH Club

Commune	Number of Participants	Number of FGD
Gogounou	6	2
Kalale	5	1
Kandi	1	1
Total	12	4

A total of 34 parents participated in the parent FGDs (Table 4). The number of parents FGDs varied per commune ranging from one in Kalale to four in Malanville. Applying the principle of gender sensitivity, Et4d held same-sex FGDs when puberty issues were to be discussed. This approach helped women to feel comfortable expressing their views and enabled them to share issues and concerns not typically discussed in mixed groups due to gender norms.

Table 4: FGDs with parents

Commune [# FGD]	Number of Participants	Number of FGD
Gogounou [2]	8	2
Kalale [1]	5	1
Kandi [2]	8	2
Malanville [4]	13	4
Total	34	9

Twenty-nine teachers from four communes participated in FGDs (Table 5). The number of teachers in each FGD ranged from 5 to 10, falling within an acceptable standard for ensuring all participants' voices are equally represented.

Table 5: FGDs with teachers

Commune	Number of Participants	Number of FGD
Gogounou	9	2
Kalale	10	2
Kandi	5	2
Malanville	5	2
Total	29	8

Overall, Et4d conducted 16 FGDs with a total of 75 participants. Key Discussion Guides developed to lead the focus groups are featured in Annexes H, I and J.

Key informant interviews

Key informant interviews (KIIs) took place with partners and authority figures during fieldwork in the four communes involved in the project as well as the locality of Parakou and Cotonou, where some partners have their headquarters. For the KIIs with the partners, the evaluation team did not follow a strict guide, but focused on gaining a better understanding of the activities planned for McGovern-Dole FY17. A deeper comprehension of the activities enabled us to check that the PMP captured all the relevant outputs, and that the activities were planned in alignment with each indicator. During the meetings, we inquired about the implementation plan and coordination with other partners. This helped us identify possible risk factors for the implementation and/or potential opportunities for strengthening collaboration, which could have been missed during the planning phase. As presented in Table 6, there were a total of 17 key informant interviews with 30 participants. Unfortunately, we had to cancel the meeting in Porto Novo with INFRE and DAS because of some health issues.

We employed a purposeful sampling methodology to select participants for FGDs and KIIs. The selection criteria for parents included those who had different levels of involvement (some parents were actively involved such as APE or AME members, and some were not involved in any activity of the McGovern-Dole FY14 project), or mothers whose daughter had recently reached puberty. For teacher FGDs, we sought diversity among teachers interviewed in terms of classes taught (From 1 to 6), gender and zone type (Urban/Rural).

Table 6: Key informant interview

Organization	Location	Number
Authority-CRP	Malanville	1
Authority-CRP + CP	Kandi	3
Authority-DANA	Kandi	1
Authority-DAS	Porto Novo	0
Authority-DDEMP	Kandi	3
Authority-DDHAS	Kandi	3
Authority-DHS	Malanville	1
Authority-INFRE	Porto Novo	0
Community Health worker	Malanville	1

Organization	Location	Number
Partner for development	Cotonou	4
Partner-Alafia	Kandi	2
Partner-CARITAS	Kandi	1
Partner-Derana	Parakou	1
Partner-URP	Parakou	5
Partner-WEI	Parakou	2
Staff - CRS	Kandi	1
Staff - CRS	Kandi	1

2.3 Sampling strategy

Sampling design for schools

We applied a two-stage cluster sampling with project and control schools as the primary sampling unit and pupils as the secondary unit. The sample included a total of 50 program schools and 50 control schools plus an additional 10 replacement schools in each category.

We excluded from the population the schools with less than 120 students enrolled. These schools were likely to be new schools with only a few active grades or the numbers of students required for the sample were not likely to be available. CRS provided a list of potential control schools, among which the schools were randomly selected using a Probability Proportion Sample (PPS), while trying to be aligned with the urban/rural ratio of the project. The control schools were all located in different communes than project schools, where the local population speak different languages, and the socio-economic condition also differed slightly, which could explain some differences in the baseline results.

Among the 50 control schools surveyed, one school in Nikki commune had a school feeding program and was therefore excluded from the final sample resulting in a total of 49 control schools. The school was not replaced, as the evaluation team realized this was the case while analyzing the data. Currently, the Beninese government in collaboration with NGO and government agencies is providing canteens services in about 50% of the schools, but this ratio should increase in the upcoming years. Therefore, some of the control schools we have sampled for our baseline could be selected in the future to be part of the government target for the school feeding program. This could result in a modification of the sampling for the midline and end line evaluations. The final sample, as shown below, consisted of 99 schools (49 control and 50 program schools). There was a slightly higher proportion of rural schools versus urban (Table 7).

Table 7: School sample

COMMUNE	RURAL	URBAN	Total
Control	27	22	49
BANIKOARA	7	8	15
BEMBEREKE	6	5	11
NIKKI		9	9
SINENDE	14		14
Program	27	23	50

COMMUNE	RURAL	URBAN	Total
GOGOUNOU	4	7	11
KALALE	4	3	7
KANDI	9	10	19
MALANVILLE	10	3	13
Total	54	45	99

Table 8 presents the mean number of students enrolled in each grade. In some cases, there was more than one classroom per grade, or more than one grade per classroom; therefore, the values are not strictly equivalent to the number of students per classroom. At the school level, the samples are fairly well balanced, with no significant differences in the number of students per grade as revealed by the independent sample t-tests conducted.

Table 8: Summary statistics for schools

	Control Mean (S.D)	Program Mean (S.D.)	Difference
Number of enrolled students in kindergarten	65.9 (44.7)	51.7 (15.9)	14.2
Number of enrolled students in grade 1	65.9 (18.5)	72.4 (31.2)	-6.5
Number of enrolled students in grade 2	57.5 (16.4)	64.4 (29.7)	-6.9
Number of enrolled students in grade 3	55.5 (14.8)	54.2 (24.3)	1.3
Number of enrolled students in grade 4	48.3 (14.5)	53.5 (24.9)	-5.2
Number of enrolled students in grade 5	42.2 (14.4)	45.3 (19.4)	-3.1
Number of enrolled students in grade 6	33.5 (11.0)	37.8 (13.1)	-4.3
Number of total enrolled students	300.5 (66.2)	317.1 (129.0)	-16.6
Number of levels in the school	6.1 (0.5)	5.9 (0.8)	0.2
Girls ratio in the school	0.53 (0.07)	0.49 (0.08)	0.04

p<0.05; **p<0.01, *p<0.001*

As revealed in Table 9, independent sample t-test shows that program schools have a significantly lower percentage of female teachers than control schools. The teacher per pupil ratio is higher in program schools than control schools, however the differences are not statistically significant. The percentage of community teachers between the two groups is fairly similar.

Table 9: Summary statistics for teachers

	Control Mean (S.D)	Program Mean (S.D.)	Difference
Proportion of male teachers in %	56.9 (22.8)	71.6 (20.9)	-14.7**
Proportion of female teachers in %	43.0 (22.8)	28.4 (20.9)	14.6**
Proportion of community teachers in %	28.0 (17.5)	34.1 (21.5)	-6.1
Teacher/pupil ratio	49.8 (11.6)	58.6 (17.4)	-8.8

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

The samples are well balanced in terms of principal characteristics. There are no statistically significant differences between the two groups (Table 10) as reported by independent sample t-test for age and years of experience and chi-square test for other variables. Data for principals from all schools are available for a response rate of 100%.

Table 10: Summary statistics for principals

	Control Mean (S.D)	Program Mean (S.D.)	Difference
Average age	45.8 (8.5)	44.1 (9.1)	1.7
Average years of experience	17.3 (6.9)	17.3 (7.9)	0.0
Female director	18.4%	8.0%	10.4
Education level			
BEPC	71.4%	68.0%	3.4
BAC, DEAT	18.4%	20.0%	-1.6
DEUG, DUES	6.1%	4.0%	2.1
Licence, Maitrise, Master/DEA	4.1%	8.0%	-3.9

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

Sampling design for teachers

Teachers were randomly selected in each of the sampled schools, using a random number generator¹². The population sampled included teachers from all six grades plus the kindergarten teacher. Principals were generally excluded, unless there was no other option, since they were interviewed as principal. Two teachers were sampled in each school, for a total targeted number of 200. Precision of this sample is computed considering an intraclass correlation coefficient (ICC) of 0.2 and an expected observed proportion of 0.50. With those parameters, results will be generalized at 95% CL with a margin of error of 7.1%.

For this specific sample, we also use an observed proportion of 50% at baseline since it is the proportion where the standard error will be the largest. Probability of success for 95% of the teachers will fall between .2 and .8 and level of significance is set at 0.05. Using these

¹² The random number generator used is an android app installed on the enumerator tablet.

parameters, we will have 80% power to detect a change from 50% to 69%, a difference of 19% between the baseline and end line. Thus, all variables/ indicators from which we seek teacher input will be able to detect a 19% change. This change is relatively small; yet, it is realistic to expect a change of this magnitude at end line.

A total of 194 teachers were interviewed (98 from control schools and 96 from program schools) for a response rate of 97%. Many of the teachers reported teaching more than one grade. The sample was relatively well balanced in terms of teachers' ages and years of experience. More female teachers were interviewed in control schools, which is consistent with the fact that there are more female teachers in our sample of control schools (Table 11 and 12).

Table 11: Summary statistics for the number of teachers interviewed per grade

	Control n	Program n	Difference
Total number of teachers interviewed	98	96	2
Kindergarten [Maternelle]	1	1	0
First Grade [CI]	21	15	6
Second Grade [CP]	7	12	-5
Third Grade [CE1]	17	18	-1
Fourth Grade [CE2]	27	27	0
Fifth Grade [CM1]	32	26	6
Sixth Grade [CM2]	5	2	3

p<0.05; **p<0.01, *p<0.001*

Table 12: Summary statistics for interviewed teachers

	Control Mean (S.D)	Program Mean (S.D.)	Difference
Average age	32.7 (6.4)	32.3 (8.1)	0.4
Average years of experience	7.0 (4.7)	7.3 (5.0)	-0.3
Female	40.8%	29.2%	11.6
Male	59.2%	70.8%	-11.6

p<0.05; **p<0.01, *p<0.001*

Sampling design for parents

For each school, the target sample size was 8 to 10 parents. Fifteen parents were chosen by selecting 15 children among the students present the day before the survey and informing them that they had been selected, and that they should come to school with one of their parents, who would be interviewed on the next day. Parents of students from any of the 6 grades and kindergarten were selected, using a random number generator. Precision of this sample is computed considering an ICC of 0.2 and an expected observed proportion of 0.50. With those parameters, we will have a 95% CI with margin of error of 3.2%.

For this specific sample, we also used an observed proportion of 50% at baseline since it is the proportion where the standard error will be the largest. Probability of success for 95% of the program will fall between .2 and .8 and level of significance is set at 0.05. Using these parameters, we will have 80% power to detect a change from 50% to 66% (a difference of 16% between the baseline and end line) if we sample 5 parents by school and a change from 50% to 63% (a difference of 13% between baseline and end line) if we sample 10 parents by school. This change is relatively small, and it is realistic to expect a change of this magnitude at end line. For indicator 2, the observed value is 31.1%, given the sample size, at endline if the observed proportion is above 43.6%, the difference will be statistically significant.

The total number of parents interviewed was 1,030 for a response rate of 69.3%. The analysis showed that the samples of parents is not well balanced in terms of language. This is due to the communes in which the schools were selected. In control schools, 81.1% of parents were Bariba speakers and 6.2% were Dendi speakers, while in program schools 38.7% of parents were Bariba speakers and 37.2% were Dendi speakers. We also interviewed significantly more female parents in program schools (46.4%) versus control schools (35.3%).

In terms of educational background and literacy level, the samples are well balanced. However, control schools have a significantly higher proportion of parents speaking French, with a ratio of 41.7% for control schools and 34.2% for program schools (Table 13).

Table 13: Summary statistics for interviewed parents

	Control Mean (S.D)	Program Mean (S.D.)	Difference
Total number of Parents Surveyed	513	517	4
Average age	38.6 (10.9)	38.4 (10.4)	0.2
Parents' Gender **			
Female	35.3%	46.4%	-11.1
Male	64.7%	53.6%	11.1
Language at home **			
Bariba	81.1%	38.7%	42.4
Boo	0.2%	5.4%	-5.2
Dendi	6.2%	37.2%	-31
French	0.8%	4.5%	-3.7
Mokole	0.2%	7.5%	-7.3
Peulh	2.7%	4.1%	-1.4
Yorouba	2.3%	0.2%	2,1
Fon	1.4%	1.6%	-0.2
Other	5.1%	1.9%	3.2
Level of Literacy			
Spoke French	41.7%	34.2%	7.5*
Read French	31.9%	27.3%	4.6
Level of education			

	Control Mean (S.D)	Program Mean (S.D.)	Difference
None	49.7%	49.7%	0.0
Can read	10.3%	15.9%	-5.6
Primary	16.0%	14.7%	1.3
Secondary Cycle 1	15.0%	14.5%	-0.5
Secondary Cycle 2	5.7%	2.7%	3.0
Superior Cycle 1	1.9%	1.6%	0.3
Superior Cycle 2	1.4%	1.0%	0.4
Main occupation **			
Unemployed	3.1%	1.9%	1.2
House wife	4.3%	11.0%	-6.7
Farm worker	48.0%	51.5%	-3.5
Day laborer	5.3%	0.6%	4.7
Seller	11.5%	15.9%	-4.4
Worker	2.9%	2.3%	0.6
Craftsman	18.9%	12.4%	6.5
Retired	1.0%	0.4%	0.6
Other	5.1%	4.1%	1.0

p<0.05; **p<0.01, *p<0.001*

Sampling design for classroom observation and student attentiveness

In each school, two classes from each of the grades 4, 5 and 6 were sampled used Randomized Number Generator (RNG). Students in grade 3, were excluded because they were assessed for EGRA, and children in grades 1 and 2 were deemed too young to be able to answer the nutrition and hygiene questions.

Enumerators sampled five girls and five boys in each class using a random number generator, and attentiveness was evaluated by observing each student for three minutes.

The students sampled for student attentiveness were also given the WASH and nutrition test (10 true and false questions) and asked to answer some questions regarding their hygiene practices. Power analysis computed for the student attentiveness will also apply for the sanitation, hygiene and nutrition test. The design will have a probability of 80% to detect changes of 11% or between baseline and end line.

For student attentiveness, we also used an observed proportion of 50% at baseline since it is the proportion where the standard error will be the largest. Probability of success for 95% of the students will fall between .2 and .8 and level of significance is set at 0.05. Using these parameters, we will have 80% power to detect a change from 50% to 61%, a difference of 11% between the baseline and end line. This change is relatively small, and it is realistic to expect a change of this magnitude at end line. With this sample size, for indicator 1, a proportion of 78.9% or higher will be identified as statistically significant.

The total number of students observed for student attentiveness and WASH and Hygiene Test was 1,921 for a response rate of 97%. The student samples for the classroom observation are fairly well balanced in terms of age and gender, with no significant differences. In terms of languages, the differences are significant, particularly for Bariba, Dendi, and Mokole. The languages students speak at home are dependent on the commune and resemble the languages used by parents, as reflected in the parent survey (Table 14).

Table 14: Summary statistics for assessed students (Attentiveness indicator)

	Control Mean (S.D)	Program Mean (S.D.)	Difference
Total number of students observed	964	957	7
Average age	11.3 (1.8)	10.9 (1.9)	0.4
Student Gender			
Female	50.4%	48.5%	1.9
Male	49.6%	51.5%	-1.9
Language at home**			
Bariba	78.6%	40.3%	38.3
Boo	0.1%	7.2%	-7.1
Dendi	5.6%	28.1%	-27.9
French	0.5%	3.5%	-3.0
Mokole	0.0%	8.7%	-8.7
Peulh	3.6%	5.7%	-2.1
Yorouba	2.5%	0.7%	1.8
Fon	3.5%	2.3%	1.2
Other	5.6%	3.4%	2.2
Student level*			
Fourth Grade [CE2]	33.0%	38.8%	-5.8
Fifth Grade [CM1]	42.1%	39.2%	2,9
Sixth Grade [CM2]	24.8%	22.1%	2.7

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

Sampling design for EGRA

The target sample size for EGRA was 16 students (8 boys/8 girls) per school for all 99 schools, but in each class, we sampled 24 students, 4 boys and 4 girls served as replacement. Precision of this sample is computed considering an ICC of 0.2 and an expected observed proportion of 0.50. With those parameters, this student sample size will allow generalizing results at 95% with a margin of error of 5%. Power analysis was conducted to detect differences with an expected power of 0.8 and type-I error of 0.05, an ICC of 0.2 was also considered. At end line, the minimum detectable effect size is 0.25 standard deviation of any continuous outcome will be detected as statistically significant. For example, if a standard-deviation of 12 words per minute is observed at baseline, the design will have a probability of 80% to detect changes as small as 4 words per minute between baseline and end line.

For any dichotomous outcome, we use an observed proportion of 50% at baseline since it is the proportion where the standard error will be the largest. Probability of success for 95% of the students will fall between .2 and .8 and level of significance is set at 0.05. Using these parameters, we will have 80% power to detect a change from 50% to 63%, a difference of 13% between the baseline and end line. This change is relatively small, and it is realistic to expect a change of this magnitude at end line. With this sample size, for indicator 3, a proportion of 5.7% or higher will be identified as statistically significant.

It was decided between the consultant team and CRS that grade 3 student repeaters would be excluded from the sample, because they could not be considered as an acceptable proxy for 'end of grade 2'. To avoid stigmatizing the repeaters, students were treated as "no consent" and were asked to go back to the classroom. The eight (4 boys/4 girls) extra sampled students were used as replacement for the repeaters. However, in some cases the enumerators had to sample again, because more than four repeaters per gender had been initially sampled. The total number of students assessed for EGRA was 1,521. The response rate was 96%. As shown in Table 15, the population of EGRA students is well balanced apart from the language.

Table 15: Summary statistics for students EGRA

	Control Mean (S.D)	Program Mean (S.D)	Difference
Total number of students assessed	773	748	25
Average age	8.4 (1.6)	8.4 (1.8)	0.0
Student Gender			
Female	49.0%	46.5%	2.5
Male	51.0%	53.5%	-2.5
Language at home			
Bariba	85.4%	45.2%	40.2**
Boo	0.7%	6.2%	-5.5**
Dendi	4.9%	24.5%	-19.6**
French	3.2%	2.0%	1.2
Mokole	0.0%	8.3%	-8.3**
Peulh	3.9%	6.0%	-2.1
Yorouba	1.0%	1.2%	0.2
Fon	2.1%	2.5%	-0.4%
Other	7.5%	11.4%	-3.9%*

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

2.4 Data Analysis

Sampling weights

In order to correct estimates for unequal probability of selection caused by clustering of the sample, we applied a two-step procedure for weighting the data. In the first step, base weights were computed for each dataset; and, in the second step, adjustment factors were applied to correct for non-participation of the selected subjects as well as selection within school.

The probability of inclusion of each student in strata $s = \{\text{control urban, control rural, program urban, program rural}\}$ is:

$$\pi^s = \left[\frac{m_i^s * n^s}{M^s} \right] * \left[\frac{s^s}{m_i^s} \right] = \frac{s^s * n^s}{M^s}$$

Where

- g_i^{ab} is the total enrollment of school i in strata s
- M^s is the total enrollment of all schools in strata s
- n^s is the total number of schools sampled in strata s
- s^s is the number of students sampled per school in strata s

Thus, the school weight (inverse probability of selection) for strata s is:

$$W_s = 1/\pi^s = \frac{M^s}{s^s * n^s}$$

Adjustment factors

The probability of inclusion of participant type $k = \{\text{teacher, parent, student (Grades 4-6)}\}$ in the teacher, parent, student attentiveness and WASH surveys, respectively is:

$$\pi^k = \frac{s^{k,i}}{M^{k,i}}$$

Where

- $s^{k,i}$ is the number of participant type k sampled in school i
- $M^{k,i}$ is the total number of all participant type k in school i

Thus, the adjustment factor (inverse probability of selection) for participant type k is:

$$A_k = 1/\pi^k = \frac{M^{k,i}}{s^{k,i}}$$

Finally, for the EGRA reading assessment, the probability of selecting a non-repeating student of gender $g = \{\text{male, female}\}$ from the 3rd grade of school i is:

$$\pi^{g,i} = \frac{s^{g,i}}{M^{g,i}}$$

Where

- $s^{g,i}$ is the number of non-repeating students of gender g sampled from the 3rd grade of school i
- $M^{g,i}$ is the total number of non-repeating students of gender g in school i

Thus, the adjustment factor (inverse probability of selection) for EGRA reading scores are:

$$A_{g,i} = 1/\pi^{g,i} = \frac{M^{g,i}}{s^{g,i}}$$

Adjustment factors are multiplied by the respective school weight when weighting each observation.

Statistical analysis

For performing comparisons between control and program schools independent sample t-test was performed with continuous outcome and chi-square test with categorical outcome. For the comparisons between two groups for indicators, linear regression was used for continuous outcome and logistic regression for dichotomous outcome.

2.5 Challenges, issues and limitations

The following challenges, issues and limitations were identified for this baseline evaluation:

Time constraints

The contract was signed only a few days before the consultants' departure date, and the evaluation team had only a couple of days in country to pilot the instruments and translate the instruments into local languages. However, the evaluation team made all efforts to mitigate this challenge.

Lack of feedback during instrument design

Only the CRS M&E team gave limited feedback on the instruments, while no subject matter experts such as health and nutrition or education staff were consulted as they were not made available to the evaluation team. If they had been given the opportunity to provide feedback, they could have made sure we had captured all the information they needed to improve the specifics of the program and evaluate it.

Limited project information

Because McGovern-Dole FY17 officially started in January 2019 after the baseline data collection, the design of each activity was not completed prior to the inception of the evaluation. Discussions were still taking place with the partners, who had not hired their staff yet. As a result, it was difficult to make sure that every aspect of the program was included in the survey tools. The quantitative survey tools do not cover the menstrual health intervention among the activities.

EGRA Instrument design

As presented in section 2.2, the EGRA tool for McGovern-Dole FY14 could not be used for McGovern-Dole FY17. However, an instrument design workshop was unable to be performed by WEI and INFRE prior to the evaluation due to a lack of authorization. As a result, Et4d designed a new EGRA instrument, which did not receive INFRE's approval.

Issue with repeaters

The evaluation was supposed to be administered at the end of grade 2, but because of the teacher strikes it was not possible. Therefore, it was decided that an acceptable proxy was the beginning of grade 3. To limit the sample to the children who have completed 2 years of school and not 3, the third-grade repeaters were excluded from the assessment. To avoid stigmatization, repeaters were sampled, but not tested. This resulted in some complications, since the teacher had to know how many repeaters were present, so that the weights could be accurately estimated.

Enumerator's languages

While recruiting the enumerators, we made sure that we hired individuals who spoke the local languages, and if possible, several of them. Unfortunately, we did not know that most children in our sample, especially the control schools, spoke Bariba, while most of our enumerators spoke Dendi. This issue was partially mitigated by the fact that the student and parent questionnaires were translated into these languages.

Parent attrition

The response rate of parents was 69%. We had over sampled 15 children in order to get about 10 parents, which we did. However, we can't exclude that the parents who did not participate are different from other parents, so representativeness may be biased

Attentiveness Evaluation

The approach for measuring student's attentiveness seem as though the surveyors could become an item of distraction for the students in the room.

3 Field Work

3.1 Enumerator recruitment and training

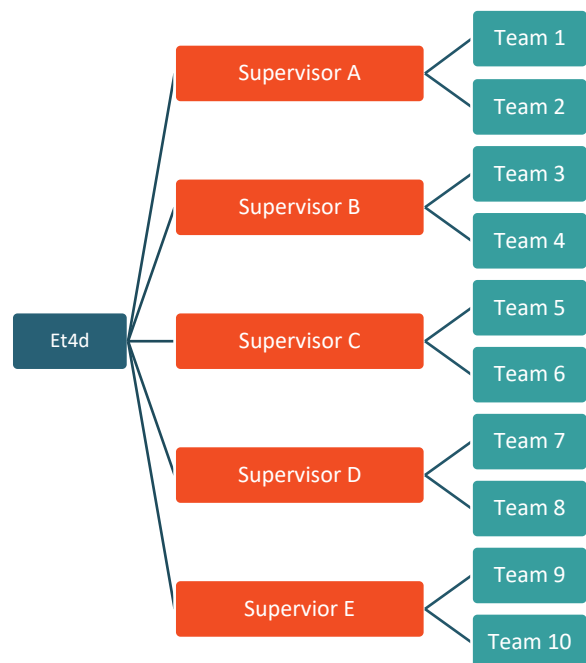
The enumerator training workshop for McGovern-Dole FY17 project was conducted in Kandi from the 19th to 23rd of November 2018. The workshop training was led by Et4d from CRS and 47 enumerators who had been pre-selected to participate. The purpose of the workshop was to train enumerators on the EGRA tool and associated data collection tools, including the student questionnaire, student attentiveness observation tool, school observation tool and the six surveys for students, teachers, principals, parents, cook and shopkeepers. The workshop also aimed to train enumerators on the fieldwork protocol to ensure high-quality and reliable data was collected. The enumerators were trained to conduct one-on-one in-person surveys using tablets or smartphones, and on how to submit the surveys electronically.

EGRA enumerators were trained over the course of five days, while the survey enumerators and the supervisors were trained in four days. All trainings were held in a classroom environment. An additional day was dedicated to a practice session which took place in a nearby primary school. Assessor Accuracy Measurement (AAM) simulations were conducted twice on EGRA in order to familiarize the enumerators with the process and examine their accuracy level. The comprehension of the survey tools was evaluated with a quiz as well as EGRA protocol. Enumerators demonstrated good performance for administration of the EGRA. The results of the quiz were acceptable, and enumerators continued to improve with further practice and proper supervision.

3.2 Data collection

Data collection for the baseline of CRS McGovern-Dole FY17 project was conducted in Alibori and Borgou departments from November 26th to December 7, 2018. A total of 10 teams comprised of four enumerators and five supervisors were engaged in data collection activities. Supervisors visited schools the day before the team arrived to conduct the following activities: 1) inform the school principal of the team visit, 2) sample parents to be interviewed, 3) interview the school principal, 4) conduct the school observation and 5) collect school-wide attendance. On the following school day, the data collection team performed the EGRA, interviewed teachers, observed student attentiveness, interviewed parents, cooks and storekeepers and collected school-wide attendance.

We organized the enumerators into sub-teams of four individuals and assigned each supervisor two teams to manage. Et4d facilitators closely followed the teams of enumerators daily to oversee the quality of the data that enumerators collected and provide them with technical support.



All enumerators regrouped with their supervisors in their respective community daily to debrief, submit their data collection logs and electronic surveys, and to plan for the next day of data collection. Teams completed fieldwork in 10 days.

3.3 Quality control and Review Board

3.3.1 Review Board

CRS completed the review board with the Benin administrative authority while Et4d ensured compliance with international best practices in the way that monitoring, evaluation and research is planned and conducted. This is particularly critical with regards to activities involving children and vulnerable groups. Et4d ensured that provisions were made to protect the confidentiality of those people involved. Et4d was attentive to the administrative, technical and physical safeguards to protect the confidentiality of the data in its storage and disposal.

Et4d has trained the enumerator to ensure compliancy with the Ethical Conduct for Research Involving Humans, including respect for human dignity, respect for free and informed consent, respect for vulnerable persons, respect for privacy and confidentiality, respect for justice and inclusiveness, recognizing the potential for harm and maximizing benefits for all who are involved.

3.3.2 Field quality control

Enumerators were observed during the first two days of data collection and when Et4d visited field teams for spot checks. Et4d observed that the sampling strategy defined by Et4d and CRS was enforced, and that quality assurance processes described in the training manuals were followed.

Et4d assisted the teams throughout the data collection process to ensure that the process was running smoothly and to address any issues the teams encountered, especially in terms of managing the schedule, due to unplanned school closures for Unité Pédagogique (UP). Et4d performed spot checks with school principals to ensure the evaluation was performed, and no issues were encountered. CRS's M&E team was also present in the field and notified Et4d any time an enumerator was not following the proper protocol so that Et4d could efficiently address the issue and reinforce the importance of following consistent protocol in the sampling or administration of the survey.

3.3.3 Data quality control

Tangerine¹³ data was downloaded daily and analyzed to make sure that the 3-second rule¹⁴ was respected.

Data from Survey CTO was downloaded daily for quality checks. The main objective was to make sure that no data was missing by comparing the school summary sheet, which showed all surveys and assessments completed by the team, and the actual data available on the server.

Other quality checks included:

- Cross checking the attendance with sampling sheets
- Making sure that we had collected attendance data on two different dates
- Checking for congruence between the number of days the school was open and the data collection date
- Checking for agreement between the number of groups sharing the same latrine

¹³ Tangerine® is a mobile data collection app developed by RTI, used to collect EGRA data

¹⁴ The student should be asked to go to the next item after 3 seconds with no response

4 Results of Questionnaires and Observation, and PMP

4.1 Strategic objective 1: Improved literacy of school-aged children

4.1.1 Improved quality of literacy instruction

MGD 1: Percent of students who, by the end of two grades of primary schooling, demonstrate that they can read and understand the meaning of grade level text

This indicator is described in detail in section 5.

Other Quality of Literacy Instruction Indicators

The following indicators (Table 16), which are dependent on project interventions, have “zero” baseline values:

Table 16: Other improved literacy of school-age children indicators

No.	Indicator	Baseline Values (2019)	Target (2022)
1	Percentage of teachers receiving merit certificates for their attendance in the previous semester	0	
2	Number of teaching and learning materials provided as a result of USDA assistance	0	187,350
MGD 3			
3	Number of teachers/educators/teaching assistants in target schools who demonstrate use of new and quality teaching techniques or tools as a result of USDA assistance	0	240
MGD 4			
4	Number of teachers/educators/ teaching assistants trained or certified as a result of USDA assistance	0	312
MGD 5			
5	Percentage of teachers who demonstrated the use of good teaching	0	
6	Number of school administrators and officials in target schools who demonstrate use of new techniques or tools as a result of USDA assistance	0	222
MGD 6			
7	Number of school administrators and officials trained or certified as a result of USDA assistance	0	288
MGD 7			

These output indicators are all linked to the project’s interventions or activities. However, some indicators might need to be precisely defined prior to collecting data in the future.

A classroom observation tool was developed during McGovern-Dole FY14 to allow the school counselor (Conseiller pédagogique) to evaluate the percentage of teachers demonstrating good teaching practices. However, the evaluation team did not find the tool used to evaluate the school administrators' and officials' use of new techniques, and we are not sure who performs the evaluation. For instance, the school's counselors (CP) have been trained to coach the teachers and could be further trained in McGovern-Dole FY17. However, we did not identify a tool evaluating the appropriate use of the new coaching techniques. It will be important to incorporate the new techniques of the administrators and officials in the list of activities planned for WEI.

4.1.2 Improved attentiveness

Percentage of students in target schools who are identified as attentive during class/instruction

Attentiveness was evaluated through classroom observation. The criteria for attentiveness were identical as criteria used for the tool developed to evaluate McGovern-Dole FY14:

A student was considered **attentive** if:

- The student is actively doing the task assigned by the teacher;
- The student actively listens to the teacher or other students while they are participating;
- The student takes notes that appear to be related to the content of the class; or
- The pupil raises his/her hand to answer the question in a sincere way.

A student was considered **inattentive** if:

- The student is reminded to act orderly by the teacher to remind him/her of the purpose of the class;
- The student makes comments that disturb the class;
- The student speaks to other students for a period when he/she should be listening;
- The student moves in his/her seat to the point that he/she disturbs the others around him/her;
- The student is sleeping;
- The student seems distracted or forgets obvious things in classroom activities

Enumerators observed the level of attentiveness from each of the 10 children randomly selected individually for about 3 minutes to establish a firm classification. As described in section 2.3, two grades were randomly selected among grades 4 to 6 for the student attentiveness observation. To evaluate the degree of attentiveness per gender, we computed the distribution of responses on attentiveness for girls and boys in control and program schools.

Based on the evaluation, 67.6% of students were deemed attentive in program schools, and 71% in control schools, with no statically significant differences between the two groups. The target for this indicator is 75%. Thus, control schools are closer to achieving the target than program schools. In terms of gender, girls showed a higher degree of attentiveness in both school types, particularly in program schools. Boys had a markedly higher level of attentiveness in control schools, but the results were not statistically significant (Table 17).

Table 17: Attentiveness

	Control	Program	Difference
Proportion of attentive students	71.0%	67.6%	3.4
Proportion of attentive students by gender			
Girls	72.0%	71.8%	0.2

	Control	Program	Difference
Boys	70.1%	63.4%	6.7

Each child was also asked a few questions related to their food consumption, in order to see whether we could establish some correlation between the food consumption and the degree of attentiveness. The results did not show any statistically significant differences among attentive child based on questions related to food consumption. (Table 18).

Table 18: Food consumption and attentiveness

	Control %	Program %	Difference
Did the child eat before coming to class?			
No	72.1%	76.2%	-4.1
Yes	70.4%	65.2%	5.2
Did the child eat during the morning break?			
No	73.6%	63.5%	10.1
Yes	70.7%	68.1%	2.6
Does the child eat a lunch provided by the school			
No	-	64.2%	
Yes	-	68.1%	

p<0.05; **p<0.01, *p<0.001*

Other Improved attentiveness indicators

The following indicators have “zero” values at baseline, as they can only be measured post-intervention (Table 19).

Table 19: Other improved attentiveness indicators

No.	Indicator	Baseline values (2019)	Target (2022)
1 MGD 18	Number of social assistance beneficiaries participating in productive safety nets as a result of USDA assistance	0	50,965
2 MGD 16	Number of daily school meals (breakfast, snack, lunch) provided to school age children as a result of USDA assistance	0	7,789,096
3 MGD 17	Number of students receiving daily school meals (breakfast, snack, lunch) as a result of USDA assistance	0	50,965
4 MGD 15	Number of individuals receiving take home rations as a result of USDA assistance	0	7,281

These output indicators are expected to have a value of zero at baseline; however, there should be activities aimed at impacting this output.

4.1.3 Improved student attendance

MGD 2 - Average student attendance rate in USDA supported classrooms/schools

USDA does not require more than one data point at baseline. However, Et4d misunderstood, and headcount was taken twice. Since multiple data points are always better than one, we decided to keep the average of the two dates.

To record attendance, both the supervisor and the lead enumerator (on the following day) went into each classroom and performed a headcount of boys and girls present that day and asked the teacher for the current enrollment figures. We did not include children in kindergarten in the results, because school is not mandatory, and enrollment as well as attendance is usually erratic. In addition, children are often sick or might stay with their parents when they are moving temporarily to another location, especially during the harvest season. Surprisingly, attendance in program schools is significantly lower than in control schools. There is no clear explanation for this phenomenon, since providing lunches usually increases school attendance. During our discussion with the school principals, some of them mentioned that the school attendance was low because it was harvest season, and some parents move temporarily with their children to be close to the field during this period.

Next, we examined gender differences in attendance rates and found that boys in program schools had the lowest attendance rates and that the differences were significant (Table 20 and 21). The geographic differences between the communes selected for control and program schools could explain partially the differences in levels of attendance. Some communes such as Malanville had a much lower attendance rate (83.9%) than others such as Sinende (93.2%) (Table 22). Communes located in the north, such as Malanville and Kandi are also more affected by the seasonal relatively cold weather, which often results in health-related absenteeism during the month of December. This could explain the relatively low attendance levels in these communes. The attendance will be taken again by CRS bi-annually. We recommend waiting until the harvest season is over to see if the differences between control and program schools remain significant, and also exploring the causes behind these findings.

This is a new indicator for USDA, and the evaluation team will be keen to watch it during the midline evaluation. This may also be an indication that the control schools do not serve as an adequate comparison group, because they are not located in the same communes.

Table 20: Student attendance

	Control Mean	Program Mean	Difference
Overall attendance	92.2%	88.3%	3.9***
First Grade [CI]	89.3%	84.6%	4.7**
Second Grade [CP]	90.2%	86.2%	4.0
Third Grade [CE1]	90.1%	86.7%	3.4
Fourth Grade [CE2]	92.9%	88.7%	4.2**
Fifth Grade [CM1]	94.6%	89.3%	5.3**
Sixth Grade [CM2]	96.2%	94.4%	1.8

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

Table 21: Attendance per gender and grade

	Control Mean	Program Mean	Difference
Overall attendance Boys	92.9%	89.9%	3.0**
Overall attendance Girls	91.9%	90.0%	1.9*
First Grade [CI] - Boys	90.6%	85.0%	5.6**
First Grade [CI] - Girls	88.4%	86.1%	2.3
Second Grade [CP] - Boys	91.8%	88.2%	3.6**
Second Grade [CP] - Girls	89.7%	90.1%	-0.4
Third Grade [CE1] - Boys	90.6%	90.6%	0.0
Third Grade [CE1] - Girls	90.1%	86.8%	3.3*
Fourth Grade [CE2] - Boys	93.0%	91.4%	1.6
Fourth Grade [CE2] - Girls	93.1%	92.7%	0.4
Fifth Grade [CM1] - Boys	95.2%	91.0%	1.8
Fifth Grade [CM1] - Girls	93.8%	90.3%	3.5*
Sixth Grade [CM2] - Boys	95.9%	93.4%	2.5
Sixth Grade [CM2] - Girls	96.4%	93.4%	3.0

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

Table 22: Attendance per commune

	Mean overall attendance
Banikoara [C]	90.4%
Bembereke [C]	92.9%
Gogounou [C]	93.0%
Kalale [C]	89.6%
Kandi [P]	88.6%
Malanville [P]	83.9%
Nikki [P]	93.1%
Sinende [P]	93.2%

Percent of parents who report spending time on literacy activities with their students within the last three days

McGovern-Dole FY17 intends to impact the literacy results by increasing the number of parents who help their children with school-related activities at home. The indicator is measured by the 'proportion of parents who declared having helped their child during the past three days'. The information was collected through the parent questionnaire. If the parent had more than one child,

s/he was asked to give the answer for the youngest child in elementary school, since the focus of the intervention is on grades 1 and 2.

The results demonstrated that parents from program schools were significantly more likely to support their children (31.1%) than parents from control schools (23.4%) (Table 23). This is likely to be the result of McGovern-Dole FY14, since a strong focus was placed on getting parents involved in their child's education through activities such as word building or study groups as well as awareness-raising campaigns. The difference in performance is especially notable in urban areas, where 39.3% of program school parents reported spending time on literacy activities with their students in the last three days compared to 19.9% of parents in control schools. There was no statistically significant difference based on the parents' gender.

Table 23: Percentage of parents who report spending time on literacy activities with their students the last three days

	Control	Program	Difference
Help student in the last 3 days	23.4%	31.1%	-7.7*
Gender of the parent			
Female	21.6%	31.4%	-9.8
Male	24.3%	30.8%	-6.5
Type of zone			
Rural	24.9%	24.4%	0.5
Urban	19.9%	39.3%	-19.4**

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

However, asking the parent whether they helped their child with their homework presents a very partial view of the situation. In most families in developing nations, the task of raising children is widely shared between family members and even the community. Therefore, we also asked the following question, "Has anyone else in your home helped your children (with homework) in the last 3 days?". The results demonstrated that children are more likely to receive help from somebody other than their parent in program schools than in control schools (see Table 24).

Table 24: Percentage parents who report that their child received help of somebody else the last three days

	Control	Program	Difference
Students receiving help from someone else in the last 3 days	48.5%	57.7%	-9.2*
Type of zone			
Rural	48.6%	52.4%	-3.8
Urban	48.5%	64.2%	-15.7

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

To triangulate parents' responses, we also asked children who performed the EGRA test whether they received any help during the past three days. It is important to consider the fact that for the parents, the children could potentially be in any grade, while all children interviewed are in third grade. The results showed a higher proportion of students receiving help from someone in the

program schools (64.8%) than in the control schools (51.1%) (Table 25). These results are likely to be the result of the McGovern-Dole FY14 intervention and are very encouraging.

Table 25: Student reporting receiving from someone else in the past 3 days

	Control	Program	Difference
Someone helped the student in the last 3 days	51.1%	64.8%	-13.7**
Type of zone			
Rural	43.8%	61.9%	-18.1*
Urban	64.8%	67.2%	-2.4

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

For the indicator, our recommendation would be not to limit the help received to the parent interviewed but consider the help received by the child in general. Since the activities are focused on first and second grades, we believe that the information reported by the student might be a more reliable indicator of the outcome of the activities undertaken with McGovern-Dole FY17. The parents' responses should, however, still be collected from the parents in order to triangulate the results. Considering the stark difference between control and program schools (13.7 points), the program might already be very close to maximizing the effect. Therefore, we recommend a target value of 70% for the students reporting receiving assistance from someone outside of the school within the past 3 days. This target would necessitate an increase of 8 percent.

Other improved attendance indicators

The performance indicators below for attendance have “zero” baseline values, as they can only be measured post-intervention (Table 26 and 27).

Table 26: Other improved attendance indicators

No.	Indicator	Baseline Values (2019)	Target (2022)
1 MGD 9	Number of students (boys and girls) enrolled in schools receiving USDA assistance	Females: 18,792 Males: 19,988 Total: 38,780	64,580

Table 27: Other improved attendance indicators – Suggested by Et4d

No.	Indicator	Baseline Values (2019)	Target (2022)
2	Output indicators include: number of radio messages broadcasted, number of participants within listening groups, number of story hours organized and number of participants in story hours and number of stories broadcasted	0	

The PMP might need to be more specific regarding the output indicators, and make sure that it matches the recently updated list of activities more closely. Et4d has identified some additional custom indicators that could be included to cover all of the project activities. For instance, number

of community libraries created, number of books distributed in the community libraries, percentage of parents or children who have participated in the story hours or borrowed books at the community library.

To evaluate the impact of the education awareness campaign on school attendance, particularly for girls, an outcome indicator, such as the student drop-out rate could be included. However, to calculate drop-out rate, a longitudinal study would be necessary.

During our focus group discussions, several parents mentioned that the main reason they do not keep their children in school is because the children have not managed to learn the basic skills. Therefore, they do not see the benefit of paying for school if a child who has not learned to read with fluency by the end of third grade will most likely never learn and will eventually drop out. Therefore, the best intervention to keep children in school might not be to go door-to-door to convince parents to send their children to school or to broadcast an awareness campaign, but to improve students' learning outcomes.

4.1.4 Foundational results

Number of classrooms assessed using the Early Grade Reading Assessment

The number of schools assessed using the Early Grade Reading Assessment (EGRA) is considered a foundational result because it is a way to raise awareness on the achievement level of children in northern Benin. Some members of the ministry might have an inaccurate perception of the students' actual learning outcome.

The base line value is "0" because it should include only monitoring use (WEI and MoE EGRA).

Other Foundational Result Indicators

The number of active Parent-Teacher Associations (PTAs) or similar "school" governance structures supported as a result of USDA assistance is null at baseline. However, some data was collected on the various school committees, which could inform program activities.

Parent and Mothers Associations

Data on parents and mothers' associations were gathered from the school principal questionnaires. Principals were asked if their schools had a parents' association (APE) and mothers' association (AME). All sampled schools had an APE and AME. It is important to note that the control schools could have been part of previous WEI interventions, which could explain the existence of AME in all the schools. WEI has been active in northern Benin for several decades, and the establishment of AME was one of their key achievements. An APE/AME was deemed active if they hold regular meetings and keep minutes.

The results (Table 28) demonstrated that the activity level of the AME varied substantially for control and program schools, while the differences for APE program and control schools were small and insignificant.

Table 28: APE and AME active

	Control	Program	Difference
APE	100%	100%	
Not at all active	0%	3.9%	-3.9
Mildly active	26.7%	32.0%	-5.3
Very active	73.3%	64.1%	9.2
AME **	100%	100%	
Not at all active	26.7%	1.9%	24.9
Mildly active	26.7%	34.1%	-7.4
Very active	46.6%	62.0%	-14.5

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

Hygiene Committee

Data on hygiene committees were gathered from school principals. Surprisingly, all of the schools had a hygiene committee (Table 29). The committees in control schools seemed to be more active¹⁵ than in program schools, with 88.5% of principals in control schools reporting a very active committee versus 78% in program schools, but the difference was not significant.

Table 29: Hygiene committee

	Control	Program	Difference
Hygiene Committee	100%	100%	
Not at all active	0.0%	0.0%	0.0
Mildly active	11.5%	22.0%	-9.5
Very active	88.5%	78.0%	10.5

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

It is also important to note that the data for hygiene committees are self-reported by the principal, who is often the president of the hygiene committee. Considering this potential bias, it might be useful for CRS to assess the efficiency of the hygiene committees by establishing standards against which to evaluate the schools and to conduct focus group discussions with committee members.

School Feeding Committees

Data on the activity level of school feeding committees were also gathered from school principals. Overall, 80% of the committees were considered very active (Table 30).

¹⁵ A committee is considered active if it holds meetings and keep minutes

Table 30: School feeding committee

	Program
School Feeding Committee	100%
Not at all active	0.0%
Mildly active	20.0%
Very active	80.0%

4.2 Strategic Objective 2: Increased use of health and dietary practices

4.2.1 Improved knowledge of health, hygiene and nutrition practices

Percent of parents in target communities who achieve a passing score on a test of knowledge of good health, hygiene and nutrition practices

The PMP did not include a test for assessing knowledge of good health, hygiene and nutrition practices. However, this information was useful for one of the research questions and was therefore collected. We also believe that it could be included in the PMP as a custom indicator for the midline and end line evaluation. The test consisted of the following 10 statements and parents were asked to state whether they were true or false.

1. Washing your hands before eating can help prevent diarrhea [True]
2. Walking barefoot can cause illnesses [True]
3. There is no way to prevent the death of a child because of diarrhea. [False]
4. We wash our hands with soap to remove germs and prevent them from getting on food [True]
5. A diet consisting solely of rice and egg is balanced. [False]
6. It is sufficient to rinse the can that contains water to drink with water to clean it. [False]
7. The best way to avoid diseases is to wash your hands with water and soap before eating and after going to the toilet. [True]
8. To improve the quality of the drinking water, a little bleach can be added. [True]
9. We brush our teeth only so that our mouth smells good. [False]
10. Balanced diet is important to ensure the good health of children. [True]

The test questions were translated from English to Bariba, Dendi, Peulh and Mokole to prevent any language barriers and ensure inclusive participation of all parents tested. Because no statements were answered correctly or incorrectly by 100% of respondents, there is no ceiling or floor effect. For Question 6, a higher proportion of parents in program schools provided correct answers, while for questions 9 and 10, parents in the control group scored higher (Table 31).

Table 31: Percent of correct answers per question (Parent Test)

Questions	Control	Program
1. Washing your hands before eating can help prevent diarrhea	96.8%	95.4%
2. Walking barefoot can cause illnesses	96.4%	95.6%
3. There is no way to prevent the death of a child because of diarrhea	64.0%	59.5%
4. We wash our hands with soap to remove germs and prevent them from getting on food	94.6%	94.0%
5. A diet consisting solely of rice and egg is balanced	25.2%	28.8%
6. It is sufficient to rinse the can that contains water to drink with water to clean it	67.9%	58.8%
7. The best way to avoid diseases is to wash your hands with water and soap before eating and after going to the toilet	96.7%	97.1%
8. To improve the quality of the drinking water, a little bleach can be added	84.7%	85.3%
9. We brush our teeth only so that our mouth smells good	40.0%	25.1%
10. Balanced diet is important to ensure the good health of children	95.0%	96.8%

The histogram in Figure 2 features the distribution of scores, which is similar for both groups. A mean score of 8 correct answers, based on the median value of scores, could be considered the passing score. As a result, the passing rate is significantly higher in control schools (54.9%) than in program schools (45.9%). If this indicator was to be maintained in the PMP, the target could be 60% of parents passing the test (Table 32 and 33).

Figure 2: Parents' test scores

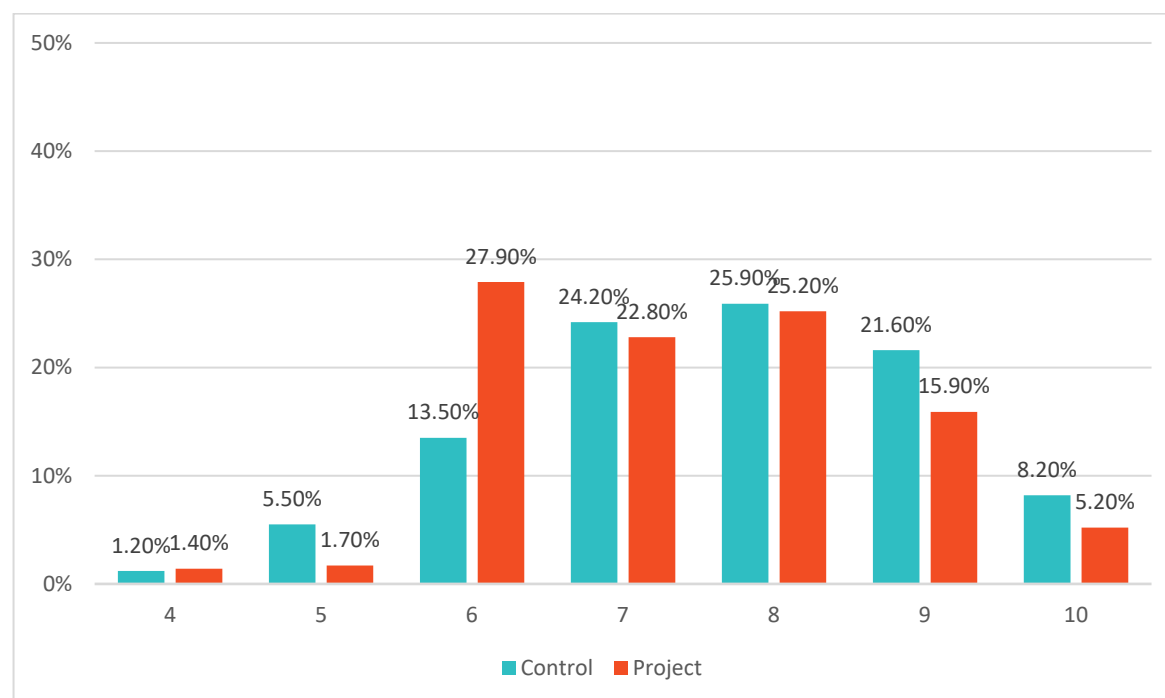


Table 32: Percentage of parents with a passing score

	Control	Program	Difference
Score of 8 correct answers or more	54.9%	45.9%	9.0*

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

Table 33: Average parent score

	Control Mean	Program Mean	Difference
Knowledge Mean score	76.1	73.6	2.5

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

Percent of children in target communities who achieve a passing score on a test of knowledge of good health, hygiene and nutrition practices

Similarly to the parent's test, the children's test included 10 true/false questions, but it was slightly different from the parents' version. The children who had been evaluated for attentiveness were selected to take the test. Therefore, all children tested were in grades 4-6.

The 10 true/false questions on the children's test were:

1. A dirty body can cause disease. [True]
2. Walking barefoot can cause illnesses. [True]
3. Diarrhea cannot cause death. [False]
4. Food protects us from diseases. [True]

5. A diet that contains only bread, rice and corn is balanced. [False]
6. It is enough to wash the bottle that contains the water to drink once a year. [False]
7. The best way to avoid diseases is to wash your hands with water and soap before eating and after going to the toilet. [True]
8. Students can make the school clean. [True]
9. We brush our teeth only so that our mouth smells good. [False]
10. To be strong, you must just eat a lot of corn. [False]

Because no statements were answered correctly or incorrectly by 100% of respondents, there is no ceiling or floor effect. There was no significant difference between the two groups (Table 34).

Table 34: Percent of correct answers per question (Student test)

Questions	Control	Program
1. A dirty body can cause disease	91.8%	89.7%
2. Walking barefoot can cause illnesses	87.2%	85.4%
3. Diarrhea cannot cause death	32.8%	39.3%
4. Food protects us from diseases	70.5%	66.7%
5. A diet that contains only bread, rice and corn is balanced	26.0%	30.7%
6. It is enough to wash the bottle that contains the water to drink once a year.	59.0%	54.2%
7. The best way to avoid diseases is to wash your hands with water and soap before eating and after going to the toilet	96.1%	96.7%
8. Students can make the school clean	98.0%	97.5%
9. We brush our teeth only so that our mouth smells good	16.5%	12.9%
10. To be strong, just eat a lot of corn	26.3%	31.2%

The histogram (Figure 3) illustrates how students' scores are distributed. The distribution is similar for both control and program groups, with most students averaging between 5 to 7 correct answers. With 7 correct answers as the passing score, the results indicate near equal pass rates for control schools (35%) and program schools (34%). For this indicator, the target could be 40% of students passing the test (Table 35 and 36).

Figure 3: Students' test scores

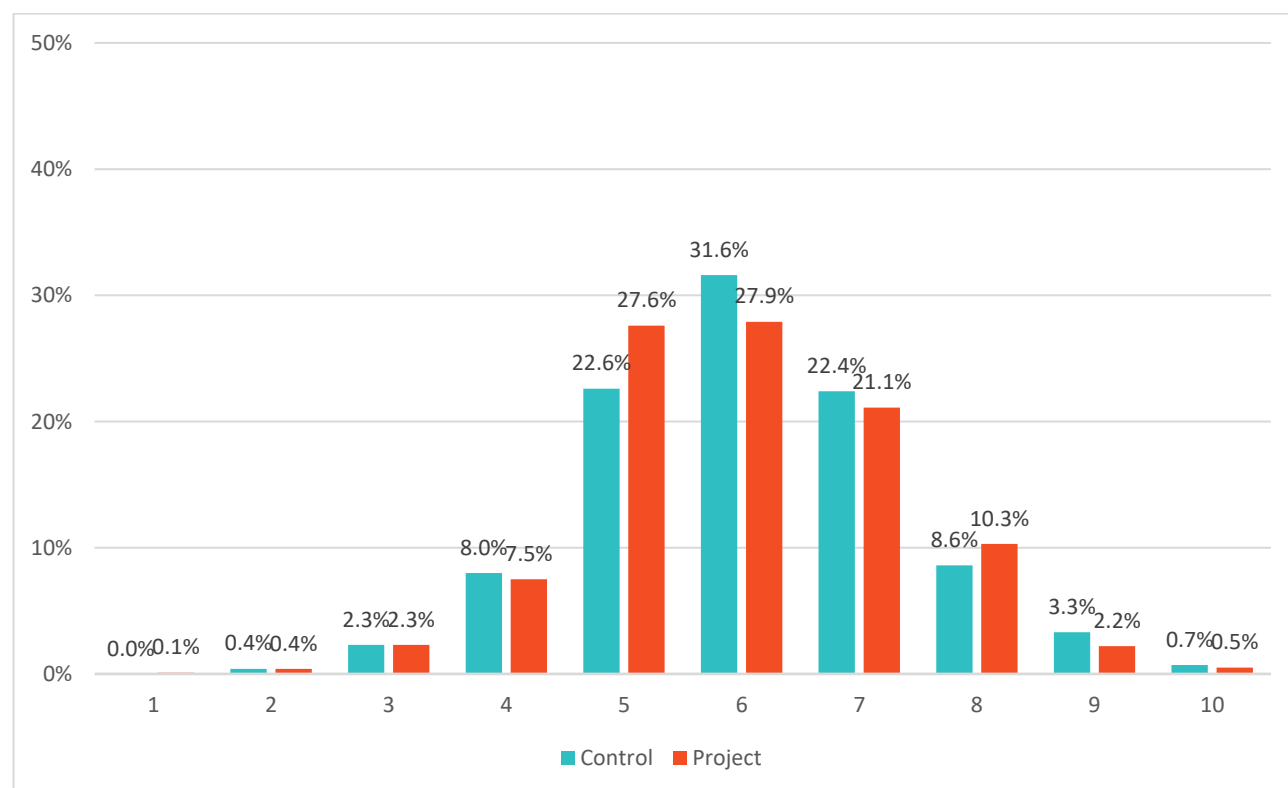


Table 35: Percentage of students with a passing score of 70%

	Control	Program	Difference
Score of 7 correct answers or more	35.0%	34.1%	0.9

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

Table 36: Average student score

	Control Mean	Program Mean	Difference
Knowledge Mean score	60.4	60.4	0.0

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

Minimum acceptable diet

The MAD was not part of the TOR. However the evaluation team was asked to collect data regarding food intake from the previous day from all the children selected for the attentiveness observation test. Therefore, our sample included 1,838 students from grades 4-6. The child was asked whether he had eaten the following food:

1. Grains, roots and tubers
2. Legumes and nuts
3. Dairy products
4. Animal flesh foods (meat, fish, poultry and liver/giblets)

5. Eggs
6. Vitamin A fortified foods, including vegetable oil, fruits and vegetables
7. Other fruits and vegetables

The tool was reviewed by a nutrition expert (Noreen Mucha) after the study had been conducted, since initially CRS had asked us to remove this indicator. The expert identified several issues which will need to be addressed for the next evaluation. The issues are:

- Grains, white roots and tubers should have been divided into two categories: 1) Pulses (beans, peas and lentils) and 2) Nuts and Seeds—they should not have been combined.
- Animal flesh foods should have been three categories when asking the students: 1) Flesh meats: beef, poultry, pork and 2) Organ meats: beef organ meat, chicken organ meat, pork organ meat and 3) fish/seafood
- Other fruits and vegetables should have been two categories while asking the questions
- There is a missing category: Dark leafy vegetables
- There is a missing category: Vitamin A-Rich Vegetables, Roots and Tubers
- There is a missing category Vitamin A-Rich Fruits

To collect the data, the enumerator also should perform a recall of what the child has eaten the previous day, and not ask whether s/he has eaten a given item.

The Minimum Acceptable Diet (MAD) indicator is one of eight core indicators for assessing infant and young child feeding (IYCF) practices developed by the World Health Organization. This indicator reflects both the minimum dietary diversity (MDD) and minimum meal frequency (MMF) indicators. We have adapted this indicator for school age children. A minimum acceptable diet was defined as eating 4 or more foods of the 7 main food groups, and a minimum frequency of 3 times a day. For each type of food group, the enumerators had a list of examples of local food or typical dishes, which they could use to describe a food category (See questionnaire in Annex D).

The McGovern-Dole FY14 test was replicated for McGovern-Dole FY17 with no modifications, only the administration procedures were altered, since the test was administered directly to students rather than parents in order to collect more accurate data. Unfortunately, the number of meals intake per day was not collected, consequently the results are not reliable.

The indicator is the proportion of children, which reported eating 4 out of the 7 food groups.

The results indicate that a higher proportion of children in program schools (68.9%) are receiving a minimum acceptable diet compared to students in control schools (60.4%); and this difference was statistically significant (See Table 37).

Table 37: Percentage of children receiving a minimum acceptable diet

	Control	Program	Difference
4 or more food groups	60.4%	68.9%	-8.5%**

p<0.05; **p<0.01, *p<0.001*

Other improved knowledge of health, hygiene and nutrition practices indicators

As the following activities have not taken place yet, these indicators have a zero-baseline value:

- Number of communities using Community-Led Total Sanitation approach
- Number of female community health workers trained in menstrual hygiene
- Number of individuals who demonstrate knowledge in Menstrual Hygiene Management (MHM)

For “Improved Knowledge of Health, Hygiene and Nutrition Practices,” focus group discussions with participants revealed a high degree of variance in quality of implementation. In some communities, nobody had heard of the community health worker, while in others, everybody knew him/her and praised the work accomplished under McGovern-Dole FY14. Therefore, it seems necessary to report on the actual number of school trainings performed.

To capture data for the “number of individuals who demonstrate knowledge in menstrual hygiene management” indicator, CRS designed a test for the community health workers to use with students. In order to assess the impact at midline and end line, we should have implemented a similar test at baseline, but it was not requested. Our recommendation is to develop a true/false test with 10 questions that will be taken by students aged 10 and above at midline and end line. Since boys and girls received the training, we should design two gender-based versions of the test.

For capturing data on the number of communities using the Community-Led Total Sanitation Approach, additional information will be needed in order to assess whether the approach is really being implemented. An observation test could be developed to that end, such as existence open defecation.

4.2.2 Increased knowledge of safe food preparation and storage practices

Increased knowledge of safe food preparation and storage practice indicators

All of the following performance indicators have “zero” at base line:

- Number of individuals trained in safe food preparation and storage as a result of USDA assistance
- Number/Percentage of individuals who demonstrate use of new safe food preparation and storage practices as a result of USDA assistance
- Number of government staff in relevant ministries /offices implicated in canteen/commodity management training

Our understanding is that data on the percentage of individuals who demonstrate use of new safe food preparation and storage practices as a result of USDA assistance will be collected by CRS. However, we recommend developing a version of the test or observation tool that could be used by the external evaluator at midline and end line, in order to triangulate the monitoring results provided by CRS's staff.

4.2.3 Increased knowledge of nutrition

All of the performance indicators below have “zero” baseline values (Table 38).

Table 38: Other increased knowledge of nutrition indicators

No.	Indicator	Baseline Values (2019)	Target (2022)
1 MGD 23	Number of individuals trained in child health and nutrition as a result of USDA assistance	0	
2 MGD 19	Number of individuals who demonstrate use of new child health and nutrition practices as a result of USDA assistance	0	
3	Custom: Number of individuals trained on improved agricultural techniques and new technologies	0	
4	Custom: Number of school gardens established and maintained	0	
5	Number of community farms contributing to school feeding	0	
6	Custom: Percentage of farmers using best practices	0	

Our understanding is that data on the number of individuals who demonstrate use of new child health and nutrition practices as a result of USDA assistance will be collected by CRS. However, we recommend developing a version of the test that could be used by the external evaluator at midline and end line, in order to triangulate the monitoring results provided by CRS's staff. The child health and nutrition practices also need to be clearly defined.

Criteria for what constitutes 'contributing to school feeding' should be clearly defined and, for the percentage of farmers using best practices, additional information will be needed in order to assess whether best practices are really being implemented. An observation test could be developed to that end if the season allows or, if not, through FGDs with parents involved in farming.

4.2.4 Increased access to clean water and sanitation services

Percent of schools with soap and water at hand washing stations commonly used by students

Data related to the percentage of schools with soap and water at hand washing stations commonly used by students was collected by supervisors through the school observation tool. Items observed were as follows:

1. Do hand washing stations have water? (Options are 100%-80%-60%-40%-20%-0%)
2. Do hand washing stations have soap (or replacement ash locally accepted)? (Options are 100%-80%-60%-40%-20%-0%)
3. Do you think hand washing stations are commonly used? (Options are: Yes, often or Yes, sometimes, Never)

To be considered “commonly used”, the answers to all three questions had to meet the following criteria:

1. Question 1: More than 40% percent
2. Question 2: More than 40% and above
3. Question 3: Yes, often or Yes, sometimes

Table 39 illustrates that over half of the program schools are maintaining good hygiene practices learned under McGovern-Dole FY14. On the other hand, less than 20% of control schools have access to soap and water at hand washing stations. For this indicator, a reasonable target would be a 25% increase over the course of the program to achieve a 68% rate of proper implementation.

Table 39: School with soap (or ash) and water at hand washing stations commonly used by students

	Control	Program	Difference
School with soap and water at hand washing stations commonly used by students	19.6%	54.4%	34.8***

p<0.05; **p<0.01, *p<0.001*

Other increased access to clean water and sanitation services indicators

All of the other performance indicators under this objective have “zero” values at baseline (Table 40).

Table 40: Increased access to clean water and sanitation services indicators

No.	Indicator	Baseline Values (2019)	Target (2022)
1	Number of schools using an improved water source	80	144
2	Custom: Number of schools with WASH-friendly action plan	0	
3	Number of educational facilities (i.e. school buildings, classrooms, and latrines) rehabilitated/constructed as a result of USDA assistance (latrines)	0	

Regarding the “WASH-friendly action plans,” it is unclear whether this activity is purely related to McGovern-Dole FY17, since there are already a lot of WASH activities taking place in the school. The WASH-Friendly approach is prescriptive, and CRS will use WASH-friendly standards.

Criteria will include hand washing station in place, a set of improved latrines, an improved water source, hygienic cooking utensils, etc.. The indicator would then be the number of schools who meet the WASH friendly standards. A competition between schools could also be organized to reinforce the messages about the importance of Hygiene.

To provide some guidance and establish some targets for what could be expected in a “WASH-friendly school, some observation data was collected, including:

1. Access to a clean, safe water source
2. Number of hand-washing stations with soap and clean water near latrines and the cooking area per school

3. Number of students per basic (improved) latrine (according to UNICEF/JMP standards)

Access to water is currently better in program schools, which all have water, even if in some cases the water source is far away from the school, or the water is not potable (Table 41). As a result of McGovern-Dole FY14 interventions, the number of hand-washing stations available is also much higher in program schools, with an average of 7.9 hand washing stations versus 2.2 in control schools (Table 42).

The number of students per latrine was calculated as the school enrollment divided by the number of latrines. The standard recommended by UNICEF is 25 students per latrine. Unfortunately, the average number of students per latrine is 105 for the program schools and 73 for control schools. However, this number should be interpreted with caution, as some schools were part of a schools' complex (several schools grouped together)—and it was not always easy to assess the number of latrines related to the sampled school only.

The percentage of latrines specifically designated for girls is less than 5% overall, which is very low. Considering the high pupil to latrine ratio, principals recommended increasing the overall percentage of latrines for all. However, all of the evidence for sexual abuse/harassment and school attendance (due to menstruation, etc.) points to having more latrines and dedicating some latrines for girls (Table 43).

Table 41: Availability of water

	Control	Program
Where is the nearest water source		
Available in the school	45.6%	65.9%
Available next to the school	29.7%	26.0%
Available far from the school	5.2%	8.1%
Not available	19.4%	0%
Is the water drinkable?	66.3%	78.0%

Table 42: Number of washing stations

	Control		Program	
	Mean	S.E	Mean	S.E
Number of washing stations per school	2.2	0.4	7.9	1.2

Table 43: Number of latrines

	Control		Program	
	Mean	S.E	Mean	S.E
Number of students per latrine	72.8	7.3	105.1	28.5
Number of students per functional latrines	111.27	10.6	134.8	32.9

Average proportion of latrines for girls	4.0 %	1.3	4.7%	1.2
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4.2.5 Increased access to preventative health intervention

Number of students receiving deworming medication

The value for this base line indicators is “zero”.

4.2.6 Foundational results

Number of government staff involved in the creation of WASH friendly school

As mentioned previously, it is not clear what the criteria for a WASH-friendly school is and how the government is involved— whether they will participate in the intervention or control the oversight of the implementation.

Through our discussions with stakeholders and school observations, we learned that government staff had their own agenda regarding health and safe food preparation services, which applied to the women selling food on the school premises during the break. The government request which was most often mentioned was the doctor consultation required to be allowed to sell food. The government-led health and sanitation services is also authorized to inspect and conduct some monitoring of food safety and make sure that the food is properly stored, and the bowls used by children are properly washed.

To be considered WASH-friendly one of the criteria could be having a common hygiene policy for the food safety standards including food selling stands and the school feeding program. In addition, possible program guidelines that follow national guidelines for food safety with school canteen saleswomen for school feeding could be introduced.

5 Results of Early Grade Reading Assessment

5.1 Improved literacy indicator

According to the CRS Benin McGovern-Dole FY17 Performance Monitoring Plan (PMP), students have met the SO1 Improved Literacy of School-Age Children impact indicator if they can read and understand the meaning of grade-level text. This indicator is measured by the percentage of second grade children who obtain three correct answers on five reading comprehension questions. As displayed in Table 44, 1% of students in program schools and 0.9% percent in control schools met this indicator. These results indicate that 99% of students in both school types cannot read and understand a simple grade 2 reading passage in French.

Table 44: Proportion of students meeting the improved literacy indicator

	Control	Program	Difference
% of students meeting indicator	0.9%	1.0%	0.1

Table 45 further illustrates that the majority of students in both program and control schools could not read and comprehend any grade-level text, with over 90% scoring zero. While roughly 2% of students in both school types comprehended 40% of text, only 1% understood between 60-100%. Poor reading comprehension is often an indication of low reading fluency and poor decoding skills.

Table 45: Distribution of reading comprehension scores by school type

Reading Comprehension Score	Control	Program	Difference
0% correct	93.7%	92.0%	1.7
20% correct	3.9%	5.0%	-1.1
40% correct	1.5%	2.0%	-0.5
60% correct	0.5%	0.5%	0.0
80% correct	0.4%	0.2%	0.2
100% correct	0%	0.3%	-0.3

5.2 Snapshot of mean and max scores by school type

The mean scores per sub-task are presented in Table 46 by school type. The sub-tasks are listed according to difficulty beginning with the pre-reading vocabulary sub-task. For this sub-task, students in both control and program schools were able to provide the correct answers for fewer than 6 vocabulary words out of a total possible of 10. With such limited vocabulary skills in French, their listening comprehension skills were also poor, with students only able to answer 17.5% of listening comprehension questions in control schools and 20.4% in program schools. This is quite surprising considering pre-reading skills should be mastered long before third grade. Low listening comprehension, however, is indicative of poor language skills. For students to read fluently and with comprehension, they must have sufficient vocabulary in the language of instruction to recognize familiar words and extract meaning. According to the Simple View of

Reading—language comprehension coupled with decoding skills are essential components of reading comprehension.¹⁶

As the EGRA tasks became more complex first with the identification of letter names and sounds, to then recognizing and decoding words and reading comprehension, the mean scores declined considerably for both school types. For the letter identification sub-tasks, students in both groups were able to identify more letter sounds than letter names, but no more than 12.8 letter sounds in program schools and 11.3 in control schools. Students in both school types could read an average of 5 correct words per minute (cwpm) on the familiar word-reading sub-task and decode an average of only 3 non-words. This result demonstrates students' limited ability to recognize familiar words and decode unfamiliar words in the French language. The key reason for students' low reading fluency is that most students speak Bariba, Dendi, or another mother tongue (Table 15) and their parents are not fluent in French, as evidenced in Table 13. The Benin national language of instruction policy requires all students to learn in French. Thus, students are learning in a language they do not understand or speak at home.

Due to the lack of pre-requisite language and reading skills in French, students scored the lowest on oral reading fluency and reading comprehension sub-tasks. Students in control schools read an average of 1.5 cwpm and comprehended 2% of the questions asked while program school students read 1.9 cwpm and answered 2.6% of the questions correctly. In order to improve student reading comprehension, teachers must focus on improving language comprehension (e.g., vocabulary and oral listening comprehension) and apply phonics to help children learn how to decode words and extract meaning from text.

Overall, students performed similarly across all sub-tasks. The low scores imply that students in control and program schools face similar challenges with learning how to read in a second language.

Table 46: EGRA mean scores by school type

	Control Mean	Program Mean	Difference
Vocabulary (%)	54.7	58.6	-3.9
Listening comprehension (%)	17.5	20.4	-2.9
Letter name (clpm)	8.4	10.6	-2.2
Letter sound (cspm)	11.3	12.8	-1.5
Familiar word (cwpm)	3.7	4.6	-0.9
Non-word (cwpm)	2.7	3.3	-0.6
Reading passage (cwpm)	1.5	1.9	-0.4
Reading comprehension (%)	2.0	2.6	-0.6

¹⁶ Hoover, W and Gough, P. (1986). The simple view of reading. *Reading and Writing: An Interdisciplinary Journal* 2: 127-160. Kluwer Academic Publishers: Netherlands

Table 47: EGRA max scores by school type

	Control Max Score		Program Max Score	
	Girls	Boys	Girls	Boys
Vocabulary (%)	100	100	100	100
Listening comprehension (%)	100	100	100	100
Letter name (clpm)	46	52	44	58
Letter sound (cspm)	63	59	61	63
Familiar word (cwpm)	47	47	46	51.6
Non-word (cwpm)	29	35	41	41
Reading passage (cwpm)	58.9	54.3	73.9	73.9
Reading comprehension (%)	80	60	100	100

5.2.1 Mean scores by school type and gender

According to EGRA results by gender in Table 48, boys performed better than girls in control schools on five sub-tasks, but both genders scored equally on reading comprehension, the highest-level subtask. In program schools, girls scored higher on five subtasks, including reading comprehension, but the differences were small and insignificant.

Table 48: EGRA mean scores by school type and gender

	Control		Program		Overall Gender
	Girls	Boys	Girls	Boys	Difference
Vocabulary (%)	51.6	58.0	57.7	59.5	6.4***
Listening comprehension (%)	15.2	20.1	19.9	20.8	4.9**
Letter name (clpm)	8.0	8.8	10.1	11.0	0.8
Letter sound (cspm)	11.4	11.2	12.9	12.8	-0.2
Familiar word (cwpm)	3.7	3.6	4.8	4.4	-0.1
Non-word (cwpm)	2.6	2.8	3.4	3.2	0.1
Reading passage (cwpm)	1.4	1.5	1.9	1.8	0.3
Reading comprehension (%)	2.0	2.0	2.9	2.3	-0.1

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

5.2.2 Mean scores by school type and location

As illustrated in Table 49, control schools in urban areas outperformed all other schools on reading comprehension and most sub-tasks. Urban control schools scored higher than rural control schools on all sub-tasks and higher than urban program schools on seven of the eight sub-tasks. It is not surprising that urban schools outperformed rural schools in both groups, since parents have higher French literacy rates and children have more exposure and access to French reading materials in urban areas. However, it is disconcerting that urban control schools outperformed urban program schools, despite interventions from the McGovern-Dole FY14 program. More research is necessary to better understand this result.

Table 49: Mean scores by school type and urban/rural location

	Control		Program		Overall
	Rural	Urban	Rural	Urban	Difference
Vocabulary (%)	49.8	64.4	55.9	60.9	14.6***
Listening comprehension (%)	11.7	29.1	17.8	22.6	17.4***
Letter name (clpm)	7.2	10.8	10.0	11.2	3.7**
Letter sound (cspm)	10.5	12.9	14.6	11.3	2.4
Familiar word (cwpm)	3.3	4.5	4.9	4.3	1.1
Non-word (cwpm)	2.5	3.1	3.7	2.9	0.6
Reading passage (cwpm)	1.3	1.9	2.1	1.7	2.1
Reading comprehension (%)	1.4	3.2	2.8	2.3	1.9

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

5.3 Zero scores by school type

The percentage of students scoring zero for both school types is displayed in Table 50. Overall, control students had a higher percentage of zero scores when compared to students in program schools. The differences ranged from 0.5% on the vocabulary sub-task to 10.7% on listening comprehension. This result is most likely attributed to the effects of the McGovern-Dole FY14 literacy interventions.

Table 50: Zero scores by school type

	Control		Program		Overall
	%	SE	%	SE	Difference
Vocabulary	0.6	0.3	0.1	0.1	0.5
Listening comprehension	51.7	2.9	41.0	2.4	10.7 **
Letter name	18.9	2.2	10.4	1.5	8.5 **
Letter sound	10.1	1.7	5.6	1.3	4.5 *
Familiar word	66.0	3.3	58.9	3.2	7.1
Non-word	70.0	3.3	61.0	2.9	9
Reading passage	67.2	3.5	58.6	3.0	8.6
Reading comprehension	93.7	0.9	91.9	1.1	1.8

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

5.3.1 Zero scores by school type and gender

In control schools, girls had a higher percentage of zero scores on every subtask (Table 51). Meanwhile, in program schools, boys scored zero more frequently than girls. Thus, the performance of girls and boys differed in each school type, but the differences were not statistically significant except for listening comprehension, which demonstrate that boys have a better understanding of French than girls.

Table 51 Zero scores by school type and gender

	Control %		Program %		Overall Gender Difference
	Girls	Boys	Girls	Boys	
Vocabulary	0.2	1.0	0.2	0	-0.4
Listening comprehension	57.7	45.2	40.0	41.9	7.5**
Letter name	20.0	17.7	10.8	10.0	2.1
Letter sound	10.5	9.6	5.5	5.6	0.7
Familiar word	67.0	64.8	56.5	61.1	-0.1
Non-word	71.9	67.9	58.7	63.1	1.3
Reading passage	69.4	64.8	56.0	60.9	1.4
Reading comprehension	94.1	93.2	90.8	93.0	-0.2

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

5.3.2 Zero scores by school type and location

In control schools, rural students had a greater percentage of zero scores than urban students, and this pattern was consistent across all sub-tasks. Within program schools, more urban students scored zero than rural students across most sub-tasks. More research is necessary to determine why the situation of rural and urban in control school versus program school is reversed (Table 52).

Table 52 : Zero scores by school type and urban/rural location

	Control		Program		Overall Difference
	Rural	Urban	Rural	Urban	
Vocabulary	0.9	0	0.2	0	0.7
Listening comprehension	63.1	29.1	42.9	39.3	22.8***
Letter name	22.2	12.2	9.0	11.5	6.3*
Letter sound	13.2	4.0	3.7	7.2	4.7*
Familiar word	67.0	63.9	55.7	61.7	0.7
Non-word	72.1	65.8	56.5	65.0	2.0
Reading passage	71.2	59.3	55.7	61.1	6.3
Reading comprehension	95.3	90.4	91.5	92.4	2.8

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

5.4 EGRA by reading categories

In order to get a better sense of students' actual reading levels, we developed a scale that measures reading fluency across five levels, from non-reader to fluent reader. Then, we computed students' scores for each level based on the results of three sub-tasks: letter name, oral reading fluency, and reading comprehension. The five levels are as follows (Table 53):

Table 53: Reading category definitions

Level	Category	Definition
1	Non-Reader	The child does not read any letter.
2	Emerging Pre-Reader	The child reads letters but no words.
3	Novice Reader	The child reads less than 20 words per minute.
4	Intermediate Reader	The child reads more than 20 words per minute but does not meet the 60% reading comprehension threshold
5	Fluent Comprehending Reader	The child reads more than or equal to 60% for reading comprehension.

As illustrated in Figure 4 and Table 54, the majority of students in this study were in the emerging pre-reader level. Nearly half of students in each school type could read some letters but no words. About one-third of students fell into the novice reader category. Less than 5% of students in the control group and 7% in the program group were in the intermediate reader category. Unfortunately, only one percent of students in both school types were fluent comprehending readers, meeting the McGovern-Dole FY17 benchmark. Unfortunately, nearly 20% of students in control schools and 10% in program schools were non-readers.

The differences in the percentage of control and program students in each level is greatest for non-reader and novice reader categories. There were 8% more control students who were non-readers versus program students. Moreover, the percentage of novice readers was 6.6 percentage points higher for program students as opposed to control students.

As noted earlier, the improved literacy benchmark is 60% correct on the reading comprehension test. Considering 99% of children are reading below the required level, the reading categories offer McGovern-Dole FY17 a way to track student progress as they advance through the program. The scale can be used to measure achievement at midline and end line to determine program impact.

Figure 4: Distribution of program and control group scores at each reading level

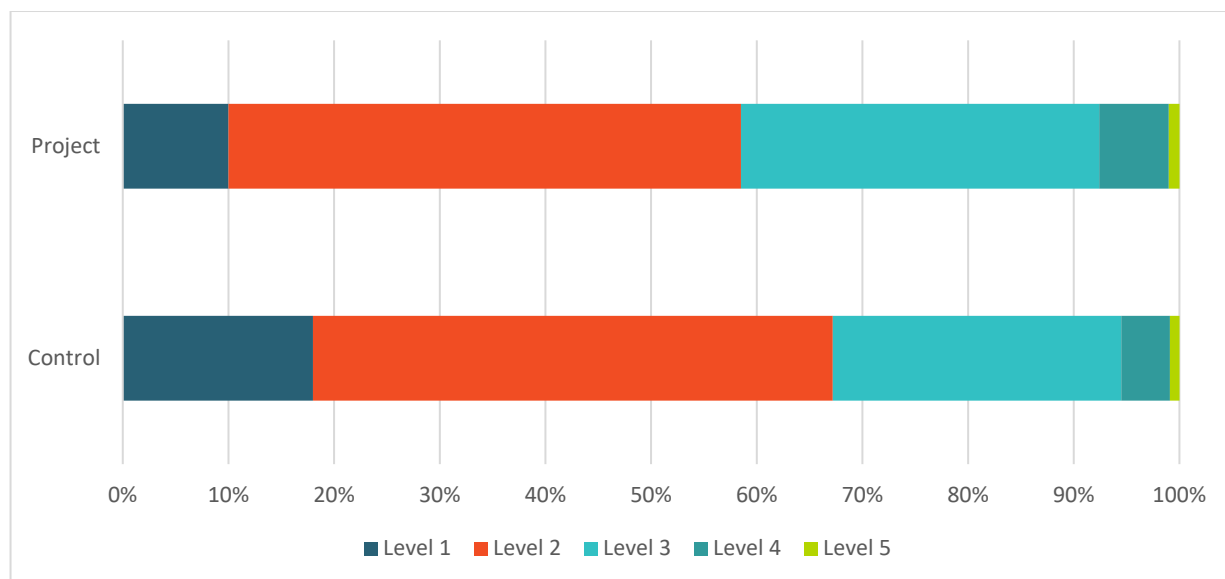


Table 54: Differences between percentage of program and control students in each reading level

	Control	Program	Difference
Level 1: Non-Reader	18.0%	10.0%	-8.0 *
Level 2: Emerging Pre-Reader	49.2%	48.5%	0.7
Level 3: Novice Reader	27.3%	33.9%	-6.6
Level 4: Intermediate Reader	4.6%	6.6%	-2.0
Level 5: Fluent Comprehending Reader	0.9%	1.0%	0.1

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

5.5 Literacy achievement index

Apart from tracking reading performance using the McGovern-Dole FY17 strategic indicators and levels noted above, another way to measure progress is to develop a literacy achievement index, which is a point system that is used to measure how well a sample of students are performing. An index system measures achievement and changes in achievement along the performance distribution rather than the very narrow focus of a proficiency indicator.

In the literacy achievement index below (Table 55), each reading level is assigned points based on a scale ranging from 0 to 100, with 100 representing the fluent comprehending reader who meets the McGovern-Dole FY17 benchmark (60% correct on Reading Comprehension) and 0 representing the non-reader. The point value for each reading level is illustrated below and increases in equal increments as students advance through the levels.

Table 55: Literacy achievement index point scale

Level	Category	Points
1	Non-Reader	0
2	Emerging Pre-Reader	25
3	Novice Reader	50
4	Intermediate Reader	75
5	Fluent Comprehending Reader	100

To determine the literacy achievement index of a given sample, we assigned points to each child for the highest level achieved and then computed a weighted average for the overall sample. For example, if none of the children could read any letters and were in the non-reader category, the literacy index would be zero. On the other hand, if all students met the reading comprehension benchmark of 60%, the literacy index value would be 100. For illustrative purposes, we provide the literacy indexes by school type, gender, commune and geographic location (urban/rural) in the subsequent sections.

5.5.1 Literacy achievement index by school type

Per the results below, the literacy achievement index is almost 5 points (15%) higher in program schools than in control schools (Table 56). The difference is statistically significant and likely due

to previous McGovern-Dole FY14 interventions. Overall, more students in program schools are making progress.

Table 56: Literacy index by school type

	Control Mean	Program Mean	Difference
Literacy Achievement Index	30.3	35.0	4.7 (15%)*

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

5.5.2 Literacy achievement index by gender

As illustrated below (Table 57), boys and girls had similar literacy indexes within each school type. Both boys and girls are reading at novice levels.

Table 57: Literacy index by school type and gender

	Control		Program	
	Girls	Boys	Girls	Boys
Literacy Achievement Index	29.7	30.9	35.7	34.4*

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

5.5.3 Literacy achievement index by geographic location (Urban/Rural)

The literacy achievement index by location presents an interesting finding (Table 58). For the control group, urban schools had higher literacy indexes than rural schools. However, within the program area, rural schools slightly outperformed urban schools. Perhaps, the rural schools, which are often neglected, embraced the literacy interventions under McGovern-Dole FY14 or had higher teacher retention rates. Albeit minor differences, it would be interesting to investigate these trends, which are consistent with earlier results, to identify any best practices or lessons learned in rural areas. The difference might be explained by the effects of last year's teachers' strike. Community-hired teacher (more prevalent in rural and more prevalent in project schools) did not strike like government-hired teachers

Table 58: Literacy index by commune by school type and location (urban/rural)

	Control		Program	
	Urban	Rural	Urban	Rural
Literacy Achievement Index	28.1	34.7	36.7	33.5*

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$

5.6 Proposed targets

The McGovern-Dole FY17 improved literacy of school-age children indicator requires that students achieve 60% correct (3 out of 5 questions) on the reading comprehension subtask, which was increased from 40% (2 out of 5 questions) under McGovern-Dole FY14. The target, as stated in the TOR, is 32% of students in program schools. The baseline results showed that only 1 % of the students in program schools met this target at baseline, and 0.9% in control schools. Therefore, this is an ambitious target.

Given that 1) the results of MCGOVERN-DOLE FY14 need to be taken with caution and cannot be strictly compared with MCGOVERN-DOLE FY17, as the tools were not identical, and the calculation rule differed 2) the McGovern-Dole FY14 end line results showed an improvement of 13% for boys and 11% for girls and 3) that the bar has been raised under McGovern-Dole FY17, the evaluation team proposes that McGovern-Dole FY17 consider lowering the target to 13%, which correspond to an additional 3% reaching the targets for each of the 4 years of implementation. This assume the program interventions will be implemented as planned.

Additionally, CRS Benin may choose to set a custom indicator and target for the literacy Achievement index. In this case, we propose to set the target at 45 points by end line, which is a realistic target above the baseline value of 35 points.

5.7 Factors associated with reading fluency

Potential factors related to oral reading fluency were identified and collected through teacher, principal and student questionnaire (See Annex D). The findings for the following topics are presented in this section:

- Student characteristics
- Reading frequency at school
- Reading books at home
- Family literacy
- Study and reading habits at home
- Parental Support
- Socio-economic status

Each section reports the results of regression analyses conducted to explore the relationship of school- and home-related factors with Oral Reading Fluency (ORF) scores. To account for clustering of the students within schools, mixed model regression was used for all these analyses. In each model, students' results were considered as a random effect and each factor was tested for their prediction independently. In order for the two variables to have a strong relationship, they must be statistically significant (<0.05) and show a notable increase or decrease in ORF scores. Please note that a strong correlation between two variables does not indicate a causal relationship. Thus, any significant regression coefficient should be seen as potentially having an impact on reading competency, and warrants further research to verify a true causal effect.

5.7.1 Student characteristics

Based on the regression coefficients in Table 59, there are no student characteristics that were strongly associated with ORF scores. In other words, there was no or minimal significant differences in student performance whether they had attended kindergarten, ate before or at school, or if they were absent from school the last week. Further analysis would be needed to see if food intake has an impact on lower level tasks.

Table 59: Regression coefficient for student characteristics

Student Characteristics	% of students	Regression coefficient	p-value
Attended kindergarten	36.5%	0.21	0.252
Ate before going to school	66.9%	-0.42	0.042
Ate during recess	88.3%	0.46	0.068
Ate at the canteen	38.3%	0.31	0.121
Was absent from school last week	25.8%	-0.35	0.057

5.7.2 Reading frequency at school

Table 60 demonstrates how frequently students read in class, according to stakeholders interviewed. Reading daily had a strong association with reading fluency scores. However, only 13% of schools read on a daily basis.

Table 60: Regression coefficient for reading in class

Reading in Class	% of students	Regression coefficient	p-value
Never (base level)	3.9%	-	-
Once every month	4.3%	0.10	0.774
Once every week	27.7%	0.62	0.055
Several times per week	51.2%	1.05	0.002
Every day	12.9%	3.53	<0.000

5.7.3 Reading books at home

The regression coefficients in Table 61 suggest that having French reading books or other French reading materials at home had little effect on reading fluency scores. Students with French reading materials at home read one more correct word per minute compared to students with no reading materials in French. Thus, although 30% of students had French reading books at home, it was not necessarily an advantage in this EGRA study. However, other factors could have influenced this result such as the type and level of the book, parents' literacy, and whether students read at home – all of these factors are explored and discussed in the following sections.

Table 61: Regression coefficient for French reading books at home

Books at home	% of students	Regression coefficient	p-value
French reading book at home	29.9%	1.06	<0.000
Other French reading materials at home	25.4%	1.44	<0.000

5.7.4 Family literacy

Family literacy results in Table 62 indicate that parent literacy is low, but most students have somebody at home who can read. Given that 74% of students have a sibling who can read, this is likely the person who most often helps them with homework and reading. However, because their knowledge of reading may also be low, there is practically no correlation with improved reading scores. On the other hand, students who had a mother or father who can read, read 1.3 more cwpm than students without a literate parent. Therefore, parent literacy may be an important factor in improving student reading fluency.

Table 62: Regression coefficient for family literacy

Family literacy	% of students	Regression coefficient	p-value
Somebody can read at home	83.7%	0.98	<0.000
Father can read	18.6%	1.29	<0.000
Mother can read	9.5%	1.29	<0.000
Brother or sister can read	74.2%	0.16	0.419

5.7.5 Home study and reading habits

The assertion above that parent literacy is an important factor related to students' reading performance is strengthened with the results in Table 63, which demonstrates a strong positive association with parents' help with homework and improved fluency scores. Unfortunately, less than 10% of fathers and mothers help their children with their homework likely due to challenges with low literacy. Other factors that were strongly correlated with improved reading fluency scores were reading or studying French at home, doing homework after school, and someone asking them to read letters or words. However, the influence on reading fluency rates was small with only one to two additional correct words per minute.

Table 63: Regression coefficient for home study and reading habits

Reading habits	% of schools	Regression coefficient	p-value
Read or study in French at home	64.1%	1.52	<0.000
Students do homework after school	21.0%	1.45	<0.000
Someone at home reads or tells stories	32.2%	1.07	<0.000
Someone at home helps with homework	64.4%	0.83	<0.000
Father helps with homework	7.1%	1.81	<0.000
Mother helps with homework	4.1%	1.74	<0.000
Brother or sister help with homework	51.9%	0.43	0.018
Someone helped in the last three days	56.9%	1.81	<0.000
Someone asks student to read letters or words	70.7%	1.79	<0.000

Parental support

When parents congratulate students, give a reward or say they are happy when students get good grades, there was a strong positive effect on ORF scores. Alternatively, when parents did nothing or were not abreast of students' grades, there was a negative association. Nearly 40% of students said their parents do nothing when they get a good grade. Although giving an incentive had the strongest positive effect on student grades, only 13.9% of students said their parents give them a reward (Table 64).

Table 64: Regression coefficient for good grades

What parents do when student has good grades	% of schools	Regression coefficient	p-value
Congratulate	22.2%	1.10	<0.000
Give a reward	13.9%	1.71	<0.000
Say that they are happy	21.8%	1.16	<0.000
Do nothing	39.3%	-1.14	<0.000
They don't know student grades	6.4%	-0.75	0.006

When students received bad grades, most parents did nothing, some scolded them, hit them or punished them, and very few tried to help them. The most effective response was trying to help them, while doing nothing or punishing them had a negative effect (Table 65).

Table 65: Regression coefficient for bad grades

What parents do when student has bad grades	% of schools	Regression coefficient	p-value
Try to help me	3.2%	2.93	<0.000
Say that I must work harder	10.4%	1.13	0.001
Scold me	23.6%	0.75	0.001
Punish me	5.6%	-0.32	0.338
Hit me	13.2%	1.23	<0.000
Do nothing	44.6%	-0.98	<0.000
They don't know student grades	6.0%	-0.89	0.001

6 Research Question #1: What are the participants' capacities, knowledge and level of application of dietary, hygiene and health practices?

6.1 Context and methodology

CRS's program strives to improve hygiene, health and dietary practices through McGovern-Dole activities, recognizing that "access to safe drinking water, sanitation and hygiene (WASH) services is a fundamental element of healthy communities and has an important positive impact on nutrition."¹⁷

CRS's intervention during McGovern-Dole FY14 initially focused on the **schools** through the creation or rehabilitation of latrines, installation of hand washing stations and improved access to safe drinking water. CRS also reached out to **children** through the school WASH clubs (Club d'hygiène), whose role is to ensure that proper sanitary regulations are in place and respected within the school. Some **parents** were trained on sanitation and nutrition best practices through the food preparation training. With McGovern-Dole FY17, CRS intends to broaden its outreach to the **community** by implementing community-led total sanitation programs (CLTS or ATPC in French). The expectation is that CLTS will systematize the use of good hygiene practice beyond the school premises. This section of the report examines the findings from the study and offers insights and suggestions to enhance CRS's WASH activities.

To assess the level of knowledge and proper hygiene and health practices among schools and students, we collected data from teachers, parents and students using questionnaires. To assess community attitudes towards hygiene and health, we organized focus groups with teachers, parents and children from WASH clubs. The qualitative component was essential to understand how McGovern-Dole FY17 could have an impact on some factors influencing their attitudes and improve the communities' knowledge and practices. We blended the results from both the quantitative data and findings from the qualitative data, and mapped out participants' knowledge and practices of hygiene, health, as well as nutrition.

Several of the KAP survey questions used a 5-point scale, which corresponds to a percentage as evaluated by a respondent. Using this scale, we calculated mean values for a defined population (Table 66).

Table 66: Scale for proportion

5	Almost all of them (80-100%)
4	Most of them (60-80 %)
3	About half (40-60%)
2	A small portion (20-40%)
1	A few (0-20%)
0	None

¹⁷ https://www.spring-nutrition.org/sites/default/files/events/05b_integratingwashandnut_who_unicef_usaid_nov2015.pdf

6.2 Analysis and findings on hygiene

Teachers were asked whether they thought that students knew the rules and practices of proper hygiene and nutrition, whether children generally put the rules into practice and what was the main reason for not applying the rules.

According to teachers surveyed, the percentage of students who know the rules of good hygiene is moderate (2.74: a small proportion for control schools, and 3.18: about half for program schools) and the difference between the control schools and the program schools was significant. The proportion of students who practice good hygiene habits was significant as well and very close to the evaluated knowledge (Control: 2.66- a small proportion; Program: 3.23 - about half) (Table 67). The difference in program schools could be attributed to the previous McGovern-Dole FY14 intervention, which included implementing a WASH club in every school, building hand washing stations, installing improved latrines, and ensuring access to clean water.

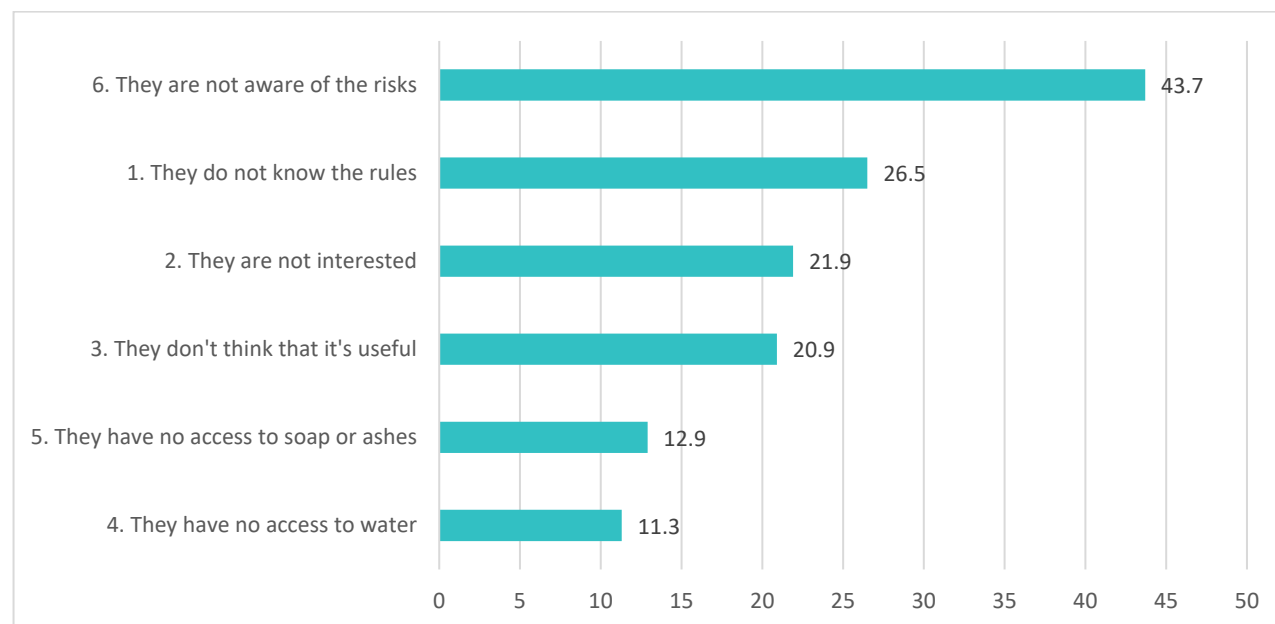
Table 67: Students' knowledge and practices of hygiene rules based on teachers' answers

	Control		Program		Overall	
	Mean	SE	Mean	SE	Mean	SE
Which proportion of children know the rules of good hygiene?	2.74	0.14	3.18*	0.12	2.90	0.10
Which proportion of children apply the rules of good hygiene?	2.66	0.12	3.23*	0.09	2.87	0.09

p<0.05; **p<0.01, *p<0.005*

The results in Figure 5 further illustrates that children do not know the rules and do not understand the health risks associated with poor hygiene. These results indicate that a health and hygiene awareness intervention is still needed, and that the program's intervention could have a strong impact on improving awareness of the risks and increase good hygiene practices.

Figure 5: Reason for not practicing proper hygiene rules



To triangulate the information collected from the teachers, we collected information from parents and students about their own health knowledge and hygiene practices. Beginning with health knowledge, Table 68 presents results regarding the number of times a parent mentioned a specific practice as being important for maintaining good hygiene and preventing illness. For most practices deemed important, there seems to be no statistically significant difference between parents in control schools and program schools, except for deworming, which was mentioned more often in control schools.

Washing hands, drinking safe water and using soap were considered most important by over 60% of the parents in both school types, while washing the drinking water container, using the latrine, purifying water and using deworming medication were considered important for less than 27% of parents. The results were similar for control and program schools, with two exceptions: use of purified water was higher in program schools, while deworming medication was mentioned nearly twice as often in control schools as being important.

Table 68: Important hygiene practices mentioned by parents

Hygiene Practices	Control	Program	Overall
Wash your hands	84.1%	82.5%	83.5%
Consume drinking water	77.6%	79.8%	78.4%
Use soap or ashes	61.6%	66.7%	63.4%
Wash drinking water container	27.3%	25.4%	26.6%
Use Latrine	22.9%	20.3%	21.9%
Use of purified water	18.5%	23.7%	20.5%
Deworming	15.3%	8.1%*	12.6%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

Additionally, we asked students and their parents a series of questions to assess their own health and hygiene practices. The first question concerned the number of times the parent or the child washed their hands. For both groups, the frequency of hand washing was notably higher in

program schools (Table 69). These results indicate that the McGovern-Dole FY14 program might have impacted children's and parents' hygiene behavior in program schools, as well as at home.

Table 69: Parent and child hand washing frequency per day

Questions	Control	Program	Overall
Parent: Number of times you wash your hands per day *			
1 to 2 times	4.0%	2.9%	3.6%
3 to 5 times	69.7%	48.6%	61.9%
6 and more	26.3%	48.5%	34.5%
Child: Number of times you wash your hands per day *			
1 to 2 times	16.2%	13.2%	15.1%
3 to 5 times	77.2%	69.2%	74.0%
6 and more	6.5%	17.6%	10.9%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

The second question was asked when parents and children washed **their hands** throughout the day at critical times—such as before eating, after working, or using the latrine, etc. Most parents in both school types wash their hands after defecation, but more parents in program schools do so compared to parents in control schools. The majority of parents in both school types washed their hands before and after eating; however, it is more common in control schools (Table 70).

Table 70: Occasion for hand washing for Parents

	Control	Program	Overall
Before eating	99.9%*	96.9%	98.8%
After eating	81.8%*	74.2%	79.0%
After defecation	59.7%	69.6%*	63.3%
After preparing a meal	20.7%	21.4%	20.9%
After working in the field	22.7%	20.7%	21.9%
After washing my children or their panties	4.8%	8.7%*	6.2%
After cleaning the latrines	6.1%	7.1%	6.4%
After cleaning the pot	4.5%	6.7%	5.3%
Before selling my products	2.3%	3.2%	2.6%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

Image 1: Tippy tap with soap



For the children, most wash their hands before and after eating, with a higher percentage doing so in control schools. More children in control schools also washed their hands after working in the field compared to program schools, mirroring the parents' results. However, a lower percentage in control schools washed their hands after defecation, which was mentioned by 52 % of the children in program schools versus 41% in control schools, and 'after cleaning the latrine', which was mentioned by 9% of the children in program schools versus 4% in control schools (Table 71).

Table 71: Occasion for hand washing for children

	Control	Program	Overall
After defecation	41.7%	52.1%*	45.8%
Before eating	98.0%*	95.5%	97.0%
After eating	77.8%*	64.5%	72.5%
After cleaning the latrines	4.9%	9.3%*	6.6%
After working in the field	7.5%	5.2%	6.6%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

The third inquiry concerned the **water treatment** method used to purify drinking water. The results clearly show a stark difference between the method used by parents in program versus control schools. Over 60% of parents in program schools use bleach, chloride solution, aqua tabs or alum compared to 37.8% of parents in control schools. Moreover, 12.5% of parents in program schools boil water versus only 8.4% in control schools. No treatment of drinking water is performed by 22% of parents in program schools and 41% of parents in control schools (Table 72).

Table 72: Water treatment used

	Control	Program	Overall
Nothing	41.6%*	22.0%	34.4%
Boil water	8.4%	12.5%*	9.9%
Add bleach, chloride solution, aqua tabs or alum	37.8%	62.7%*	50.0%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

Finally, the last question regarding hygiene practices concerned where children defecated. The parents were asked where their child usually defecates when not at school. The children were asked where they defecated the last time that they did so. Nearly half of the parents reported that their children usually defecate in the house latrine. Based on parents' responses, defecation in the bush happens less often with children in program schools (39%) than with children in control schools (44%) (Table 73). The children themselves reported similar results with nearly half of them stating that they last defecated in the house latrine. Results for defecating in the bush were less similar to parents' responses, with 26% reporting they had defecated in the bush in control schools, versus 32% in program schools. The children in program schools also seemed to be more inclined to use the school latrine; 23% versus 15% in control schools, and parents were less aware of this, with only 3.5% of parents providing similar reports. This result is somewhat

surprising since the school observations showed a higher number of children per latrine in program schools than in control schools (Table 74).

Table 73: Parents' response regarding where their children defecate when they are not in school

Defecation	Control	Program	Global
In the house latrine	46.3%	49.2%	47.4%
In the bush	44.9%	39.3%	42.9%
In a pot	3.5%	4.8%	4.0%
In the school latrine	2.3%	5.5%*	3.5%
In the latrine shared with the neighbors or the community	5.9%*	2.7%	4.7%
In courtyard and garden	1.4%	5.4%*	2.9%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

Table 74: Children's response regarding the last place they defecated

	Control	Program	Global
In the house latrine	47.7%	46.3%	47.2%
In the bush	32.9%	26.0%	30.3%
In the school latrine	15.6%	23.8%	18.8%
In the latrine shared with the neighbors or the community	3.1%	1.1%	2.3%
In the garden or the court yard	0.6%	2.7%	1.4%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

To understand the menstruation hygiene component of the project, we met with a community health supervisor, a health worker, and several mothers whose daughters had reached puberty or were about to. The participants who were directly or indirectly involved with the program unanimously praised its quality and effectiveness. They asserted that the instructional materials are very well designed and meet the needs of both boys and girls. Even among the Muslim population, the weekly class was very well accepted, according to a Muslim community health worker who was well aware of the culture. The program seemed to target specific communities. The communities where the activity was not implemented expressed their desire to be included in the McGovern-Dole FY17 program. An indicator should be included in the PMP to assess the level of participation in this activity and the impact of the intervention.

6.3 Analysis and findings on nutrition

Image 2: School garden in Gogounou



To determine stakeholders' level of knowledge regarding what constitutes a diverse, balanced diet, and to what extent the communities applied these concepts, we collected data from teachers, parents and students through a teacher survey and focus group discussions with parents and a separate FGD with children from the WASH club. We asked similar questions to all stakeholders. This approach enabled us to gain a deep understanding of community attitudes towards nutrition, the types of difficulties they face, and to determine where McGovern-Dole FY17 could potentially have an impact in

improving diet and nutrition.

Using a teacher survey, we collected data on whether teachers thought that children could demonstrate knowledge about good nutrition and apply this knowledge into practice. With respect to the knowledge of a balanced diet, teachers scored the children's knowledge of proper nutrition at 2.42 which corresponds to 'a small portion' on the 5 points scale. Although the mean score was slightly higher in program schools, the difference between control schools and program schools was small and not statistically significant. Meanwhile, the percentage of students applying good nutrition practices was even lower for both groups, with 2.5 (a small portion) in program schools and 1.96 (a few) in control schools, which is a statistically significant difference. These encouraging results can most likely be attributed to the canteen in place in the McGovern-Dole schools, which resulted in an improvement of the children's diet (Table 75).

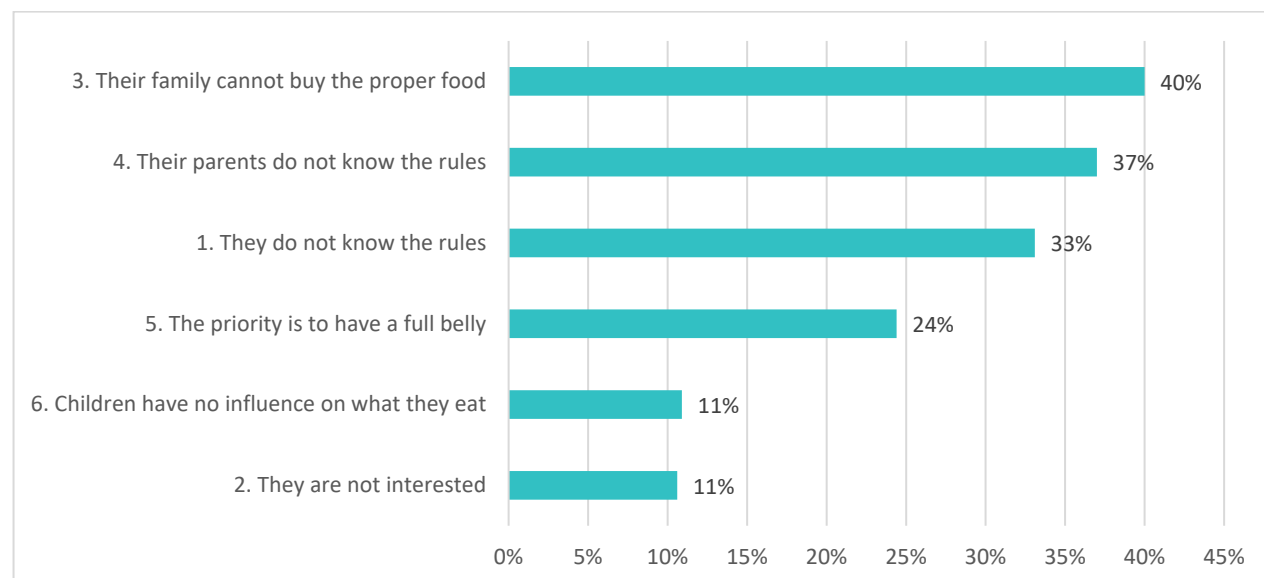
Table 75: Knowledge and practices of nutrition's rules based on teachers' answers

	Control		Program		Global	
	Mean	SD	Mean	SD	Mean	SD
In which proportion children demonstrate good nutrition knowledge	2.35	1.19	2.58	1.43	2.42	1.29
In which proportion children follow good nutrition rules	1.96	0.99	2.50**	1.52	2.14	1.19

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

Based on the teachers' survey, the two main reasons for children not eating a nutritious diet are 1) that their parents cannot afford to buy nutritious foods, and 2) that both children and parents do not know what constitutes a good diet (Figure 6). McGovern-Dole FY17 should include activities on improving parents' and students' understanding of what constitutes a balanced, dietary diverse diet through targeted behavior change activities.

Figure 6: Reasons for not having a balanced diet



During focus group discussions, parents were asked what constitutes a balanced diet. The enumerators did not propose any answer, but they classified the answers received into one of the four categories below:

1. Includes the five main food groups (dairy, meat and fish, fats, fruit and vegetables)
2. Includes food containing vitamins
3. Includes food containing vitamin A (such as red palm oil)
4. Includes fruits and vegetables

If any response did not fall into one of the four categories, enumerators selected “other” and recorded the answer (Table 76).

Table 76: Parental knowledge of well-balanced diet

Rules	Control	Program	Overall
Include the five main food families	70.4%***	58.1%	65.9%
Include foods containing vitamins	25.1%	28.4%	26.3%
Include foods containing vitamin A	12.9%**	6.5%	10.6%
Include foods containing vegetables	17.7%	18.9%	18.2%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

Image 3: Child Eating Fruit

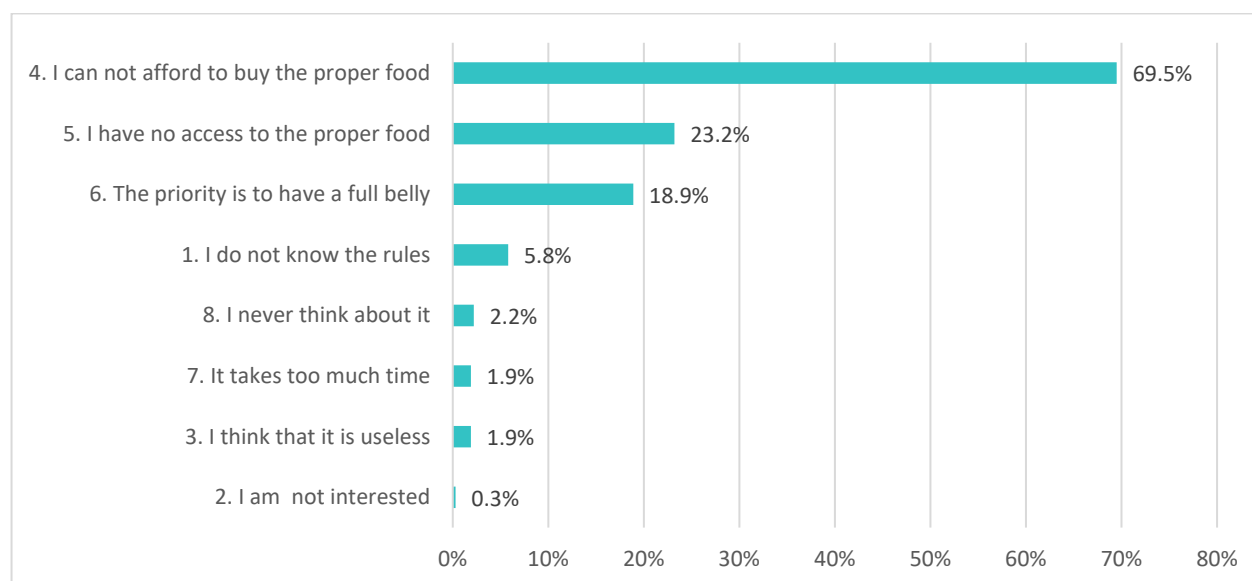


Based on the results and understanding that a balanced diet includes the five main food groups, parents in control schools seemed to be more knowledgeable than parents in program schools. However, these results are limited since very often even if parents understand that there are different types of foods, they do not know which food belongs to which category/food group. For instance, for the True/False test, about 73% of parents said that a diet consisting solely of rice and egg was balanced. During the focus groups with parents, we asked more specific questions and often received wrong answers, especially concerning which food contained vitamins. Parents overall seemed to value the importance of including meat more often than vegetables and fruits. We also observed that parents who were involved in the canteen had an excellent knowledge of what constitutes a balanced diet, while most other parents did not. The knowledgeable parents also seemed to feel that they should share their understanding of nutrition only with other cooks.

We also asked parents why they could not provide a well-balanced diet to their family. An overwhelming

majority of parents mentioned that they could not afford to buy the food necessary to prepare balanced meals (69.5%) or that the specific food items were not available either because they lived in a remote area or because it was not in season. (23.2%) (Figure 7). Even if only 5.8 % of parents mentioned that they did not know the rules, we feel that McGovern-Dole FY17 should include activities on improving parents' understanding of what constitutes a balanced diet, and how it can impact their children's health.

Figure 7: Reasons for not being able to provide a balanced diet



The students' questionnaire, unlike the parents' questionnaire, did not include any questions related to their knowledge of nutrition apart from the question related to what they ate the day before (24-hour recall) and the nutrition question included in the true/false test, for which about 72% of students said that a diet that contains only bread, rice and corn was balanced, which shows their low level of understanding.

Most of the children surveyed (Grades 4 to 6) are too young to have been taught what a balanced diet consists of, because in Benin, the lessons on nutrition and food groups is part of the sixth-grade curriculum. Therefore, none of the students interviewed were expected to be familiar with these concepts. Children themselves usually have limited influence on their food consumption. However, they are remarkably open to new types of food, and their willingness to try new food can help promote new practices within the community. For instance, the moringa plant, which has recently been introduced and promoted in Benin because of its high nutrient content, has been successfully introduced in some of the McGovern-Dole schools and has become part of the family diet.

For McGovern-Dole FY17, we encourage CRS and its partners to introduce nutrient-dense crops including iron-rich leafy greens and vegetables, Vitamin-A rich vegetables and fruits, legumes and nuts as well as fruit trees into the children's diets via school gardens and school farms. They can rely on the children's willingness to try new food since the participants reported that most common complaint was children's reluctance to eating corn.

"Children are more open to what's new in terms of diet, and sometimes they bring back a portion of their meals home to allow their brothers to taste."

Conclusion

Overall, the data demonstrates that hygiene best practices are fairly well known by children and parents alike across all schools, even if it could still be notably improved by increasing children's knowledge regarding the risk factors involved in not following the best hygiene practices.

Regarding the extent of good hygiene practices, we have found small, yet statistically significant differences between control schools and program schools on some practices. These results are very encouraging, and it is very likely that these levels of practice are due to the program activities implemented during McGovern-Dole FY14, but, unfortunately, because we are establishing baseline data, we cannot use mathematical modeling to establish causation. Another interesting result is that some practices do not seem to improve only at school, but also in the home environment. For instance, children from program schools use the latrine more frequently than the bush to defecate whether they are in school or at home.

During the discussion with the parents, the teachers and the children, the participants all shared similar views. Basically, the knowledge is mostly in place, but adoption of practices and behaviors—and the measurement of this behavior change could still be improved. Some of the most interesting discussions we had were with children from the WASH Clubs. They shared with us that they were very honored to have been selected as members of the WASH club, but sometimes felt threatened by the children who do not follow the hygiene rules, and they do not dare to tell them to act properly because they fear retaliation if they report them to the teacher. Their role seems to be focused on acting as “hygiene police,” rather than as “hygiene advocates and promoters”. The children of the WASH club were trained, and they are very knowledgeable. However, they did not seem to be inclined to share their knowledge with their peers, and they have no instructional material support to do so.

Regarding improved nutrition, unfortunately, among parents, knowledge regarding the importance of a properly balanced, diverse diet remains very low. Mother Association members (AME) have been trained on nutrition education, but their acquired knowledge did not spread to other community members. Practices are also very poor, partially because of lack of awareness, but mostly because parents have no access to nutrient-dense, dietarily diverse food, or no means to acquire them.

For McGovern-Dole FY17, we encourage CRS and its partners to introduce new nutrient-rich crops¹⁸ into children's diets via school gardens and school farms¹⁹, to identify locally nutrient rich food and to introduce them to recipes. To initiate behavior change, CRS should also encourage AAM members, who have been trained in nutrition, to share their knowledge with the communities to increase parents' awareness of how nutrition impacts their children's health and the importance of a giving their children a diverse diet.

¹⁸ A crop is defined as nutrient-rich if it meets any of the following criteria: 1. Is bio-fortified 2. Is a legume, nut, or some seeds such as sesame, sunflower, pumpkin seeds, wheat germ, or sprouted legume seeds 3. Is a dark yellow or orange-fleshed root or tuber 4. Is a fruit or vegetable that meets the threshold for being a “high source” of one or more micronutrients on a per 100 calorie and per 100 gram basis.

¹⁹ “USAID Multisectoral Nutrition Strategy 2014–2025. Technical Guidance Brief. Nutrition-Sensitive Agriculture: Nutrient-Rich Value Chains.” Guidance. USAID, December 3, 2015. <https://www.usaid.gov/sites/default/files/documents/1864/nutrition-sensitive-agriculture-508.pdf>.

7 Research Question #2: What is the parents' knowledge, attitude and practices regarding supporting their children to be successful at school?

7.1 Context and methodology

Families who engage with their children's learning have the potential to encourage their children to spend more time learning and increase their motivation to learn.²⁰ Family and community engagement is a key factor contributing to children's educational achievement.²¹

In our survey, we looked at parents' or caregivers' involvement with the children broadly. We did not limit our inquiries to structured help such as assisting students with homework and practicing reading lessons, but we also included activities such as telling stories, discussing school experiences or encouraging their children to do well in school.

First, to estimate the extent to which parents are engaged in their children's education, we surveyed principals, teachers, parents and students. To complement our understanding of parents' attitudes towards supporting their children to be successful in school, we organized focus groups with teachers and parents, and conducted in-depth interviews with CRS's partners, who had been involved in the implementation of the school-related activities during McGovern-Dole FY14. The information collected through focus group discussions was essential for deepening our understanding of how McGovern-Dole FY17 could influence parents' attitudes and behaviors, which in turn, could improve students' academic achievement.

When analyzing parents' participation in their children's literacy activities at home, we tried to see if we could identify differences based on the parents' characteristics, such as gender, education, language and location (urban/rural), as well as control schools versus program schools.

For McGovern-Dole FY14, WEI worked with two local NGOs: Alafia and Derana, who implemented a series of interventions with support from parent associations (AME, APE). Such activities included study groups, word-building workshops, parent discussions on the importance of education, and reading competitions. Most of these activities had been discontinued when we performed the evaluation; however, we sporadically found some study groups that remained active and some parents who were still using the letter cards received from McGovern-Dole FY14 to practice word-building activities with their children.

7.2 Findings and analysis

The information provided by parents on their level of involvement in their children's education was triangulated with information provided by the children, teachers and school principals.

In section 4.1.3, we presented the results for the custom indicator *'percentage of parents who report spending time on literacy activities with their students within the last three days'*, which demonstrated that parents in program schools are more likely to provide support to their children than parents in control schools. The same is also true for help provided with homework by other family members. The findings from parents were triangulated with student responses, and both

²⁰ Banerji, R., Berry, J., & Shotland, M. (2017). The impact of mother literacy and participation programs on child learning: Evidence from a randomized evaluation in India. *American Economic Journal: Applied Economics*, 9(4).

²¹ McNeal, R. B. J. (1999). Parental involvement as social capital: Differential effectiveness on science achievement, truancy, and dropping out. *Social Forces*, 78(1), 117-144.

were consistent. This demonstrates that the previous intervention had a lasting impact on parents' behavior. There was no difference in terms of support received by mothers or fathers. In program schools, parents were more likely to help if they lived in an urban setting.

During our focus group discussions with teachers, we were often under the impression that teachers did not feel that parents were providing enough support and attention to their children's schoolwork. They felt that parents often barely knew which grade their children were enrolled in and whether they were able to follow instruction appropriately in class. In the teacher survey, we asked teachers what percentage of children were most likely to receive help with their homework. The answers were based on a 5-point scale, identical to the previous research question (See section 6.1).

"Parents do not ask their children anything about their school activities. Children are left wandering by themselves without any supervision."

Teacher, Malanville

Teachers in program schools reported a significantly higher proportion of students received help in program schools than in control schools which may be attributed to McGovern-Dole FY14. However, it seems that teachers underestimate the help received by students, since 64% (approximately 4 on the 5-point scale) of students in program schools and 51% (approximately 4 on the 5-point scale) in control schools reported having received help in the last 3 days, while by teachers' estimations only a few students (1.74) in control schools and a small portion (2.35) in program schools received help (Table 77).

Table 77: Proportion of students receiving help based on teachers' perception

	Control		Program		Overall	
	Mean	SD	Mean	SD	Mean	SD
Which proportion of children receive help?	1.74	1.09	2.35***	1.57	1.96	1.30

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

The three types of parents' engagement for which we collected data are telling stories, discussing school experience and encouraging their children to do well in school. These components of parents' engagement are related to some of the activities planned for McGovern-Dole FY17 such as radio story time and awareness campaigns on the importance of being involved in children's education.

We asked the parents and children whether someone at home **read or told stories to children**. For this question, there was no difference between control and program schools, or rural and urban schools. Overall, about 60% of parents reported that someone in their home told stories to the children.

Unsurprisingly, parents who are literate are more likely to tell stories to their children (70%), than parents who cannot read (55%). We also found a significant difference based on the languages spoken at home. Sixty-two percent of Bariba speakers reported telling stories, while only 45.7% of Dendi speakers did. This might be partially explained by the fact that many Dendi speakers are located in the commune of Malanville, which also has the highest proportion of illiterate parents (over 80% in our sample) (Table 78).

Table 78: Proportion of parents reporting that someone tells stories to their children at home

Control	Program	Overall
---------	---------	---------

Does someone read or tell stories to your child at home?	59.9%	59.7%	59.8%
Location type			
Rural	61.3%	60.8%	61.1%
Urban	56.9%	58.3%	57.5%
Parent literacy			
Parent can read	66.6%	75.2%	69.5%
Parent cannot read	56.9%	53.9%	55.7%
Home Language			
Bariba	60.1%	68.4%	61.8%
Dendi	58.0%	43.7%*	45.7%*
Other	59.9%	69.2%	65.2%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

Overall, the proportion of parents who reported that their children were told stories is higher than we would have expected, based on the discussion we had in focus groups with teachers, who did not believe that parents told stories to their children. The results were triangulated with the children's responses to the same question. Unfortunately, the results were very different, with only 32% of children reporting that they were being told stories. Interestingly, the results were significantly higher in program schools, where 44% of students reported that someone told them stories versus 24% in control schools (Table 79). Based on these data, it seems that awareness campaigns from McGovern-Dole FY14 might have produced some lasting behavioral changes for parents of children in early grades. However, more work needs to be done to improve reading or storytelling at home. McGovern-Dole FY17 planned interventions should identify ways for literate and illiterate parents to get involved in their children's literacy development and results should be monitored.

Table 79: Children reporting being told stories

	Control	Program	Overall
Does someone read or tell you stories at home	22.8%	47.7%***	32.2%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

The second aspect of engagement we considered was whether **parents talk with their children about their experience at school** on a daily basis. Parents overwhelmingly said that they asked their child what they had learned that day. The analysis shows that this was more likely to be the case in program schools (76%) than in control schools (69%). Parents' education is also a major factor, with 89% of literate parents inquiring about their child's day versus 64% of non-readers (Table 80).

Table 80: Proportion of parents reporting talking to their children about their school experience

	Control	Program	Overall
When your children come back from school, do you ask them what they have learned	69.7%	76.0%	72.1%
Location type			
Rural	70.1%	77.4%	72.4%
Urban	68.9%	74.4%	71.5%
Parent literacy			
Parent reads	87.1%***	95.1%***	89.8%***
Parent does not read	61.7%	68.9%	64.5%
Home Language			
Bariba	69.7%	72.5%	70.3%
Dendi	67.7%	73.2%	72.1%
Other	71.1%	85.4%	79.3%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

Since parents are likely to report desirable behaviors, we suspected some social desirability bias could influence their answer, and therefore we asked children the same question. Over half of children (44.5%) reported that they were asked what they did in school (Table 81), which is much lower than the percentage (72.1%) reported by parents (Table 80). Children in control schools were more likely to report higher engagement of their parents (Table 81).

Table 81: Children reporting being asked what they did at school

	Control	Program	Overall
When you come back from school, does someone ask you what you did today?	39.3%	52.9%***	44.5%
Home Language			
Bariba	36.2%*	42.6%*	37.6%*
Dendi	56.3%	61.1%	60.1%
Other	58.4%	59.3%	59.0%

* $p < 0.05$; ** $p < 0.01$, *** $p < 0.005$

While there is no consensus among researchers upon the benefit of praising children when they get good grades, it is widely recognized that rewarding positive behavior, such as hard work, reinforces and encourages children to repeat the same behavior. Thus, parents should be proactive with setting expectations and rewarding the behaviors they want their children to learn.

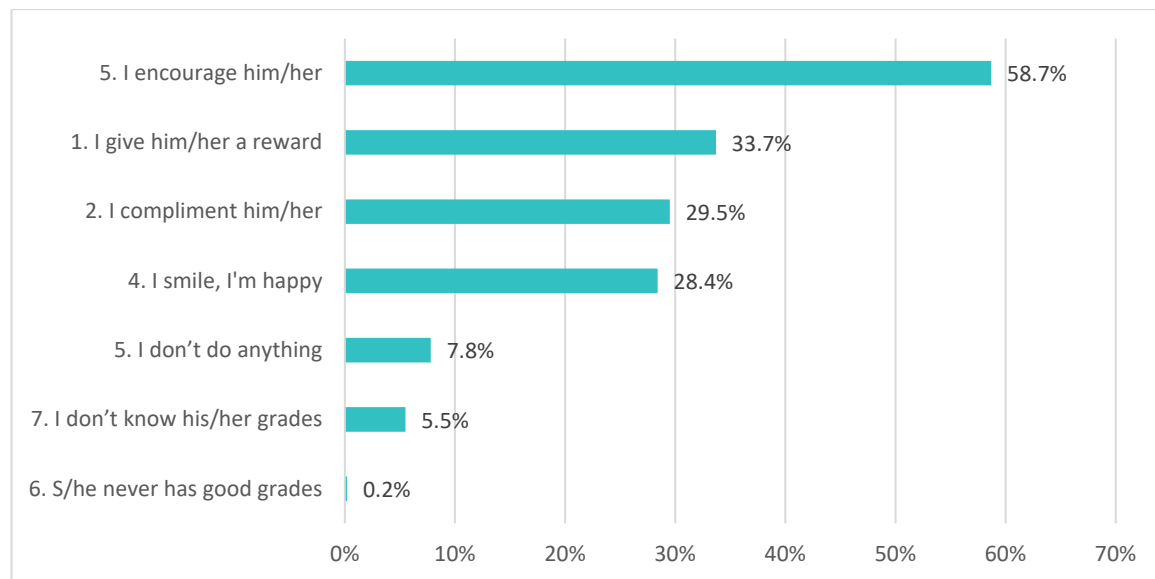
The regression analysis of the EGRA results (See section 5.7.6) also showed that when parents congratulate students, give a reward, or say they are happy when students get good grades, there was a strong positive effect on ORF scores. Alternatively, when parents did nothing or were not abreast of students' grades, there was a negative association. Nearly 40% of students said their

parents do nothing when they get a good grade. Although giving an incentive had the strongest positive effect on student grades, only 13.9% of students said their parents give them a reward.

In order to evaluate parents' behavior, we asked them what type of feedback they gave to their children when they had good grades and when they had bad grades. We then asked children what type of feedback they received in order to triangulate our data since parents' responses are likely to be biased.

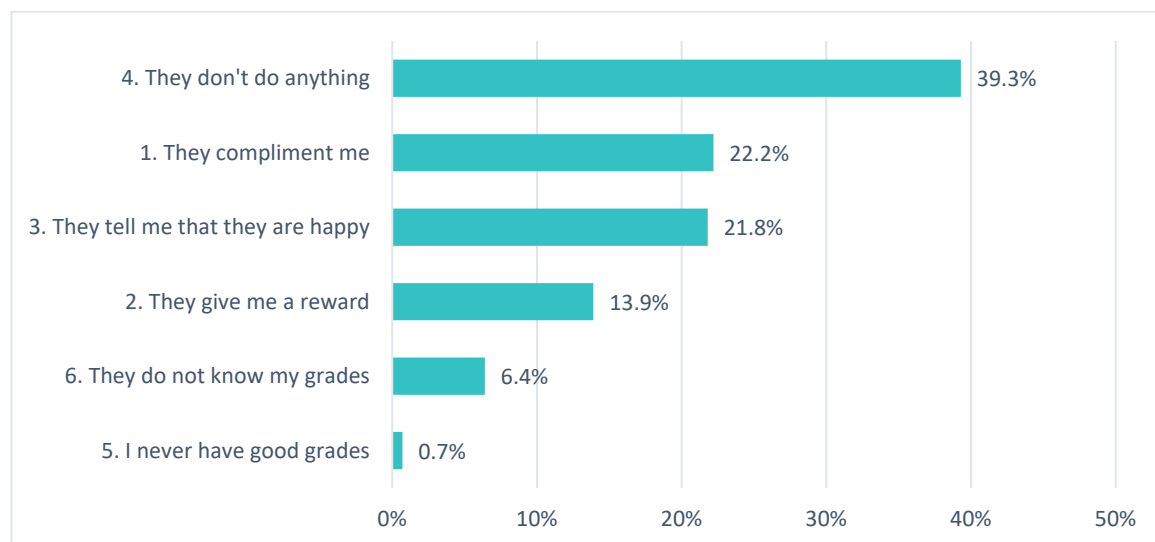
Among parent responses, the most common was "I encourage him/her" for 58.7% of respondents, followed by "I give him/her a reward" for 33.7% of parents surveyed. Only 7.8% of parents reported doing nothing (Figure 8).

Figure 8: Types of feedback parents report giving when their child gets good grades



As we suspected, the children's responses were quite different. Only 22% of children reported receiving encouragement and 13% reported receiving a reward, while 39% reported that their parents did nothing (Figure 9).

Figure 9: Types of feedback students report receiving when they get good grades

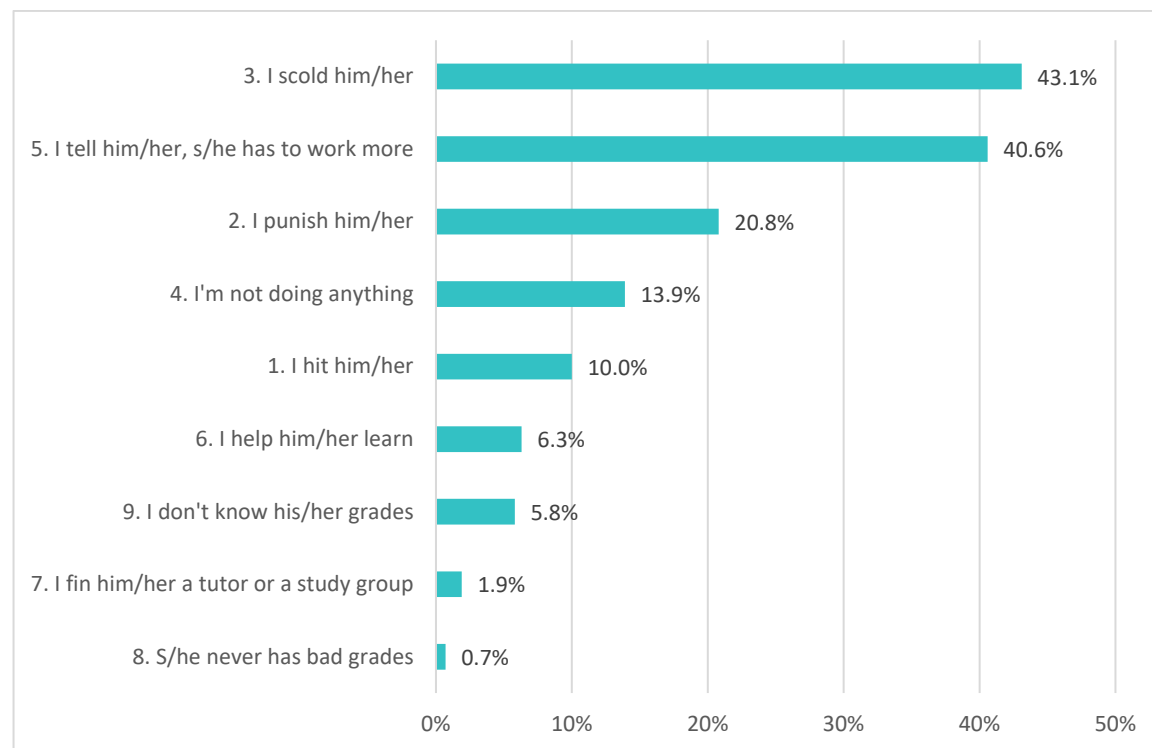


A large body of research has demonstrated that punitive parenting strategies are likely ineffective in promoting achievement when it does not directly address the underlying problem that is causing academic underperformance.²² However, in Benin, there is still a widely held belief that harsh parental action leads to higher academic achievement. While being asked what their reaction was when their child received bad grades, parents reported punishing and/or hitting their child in 30.8% of the cases, scolding him/her in 43% of the cases, and only in 6% of the cases did a parent report taking action to help the child to learn (Figure 10).

“When children do not do well in school the parents are angry with the children but also at the teacher”.

Caregiver, Kandi

Figure 10: Types of feedback parents report giving when their child gets bad grades



Children reported receiving similar feedback. When they receive bad grades, only 3% reported receiving help from their parents and 13% reported being hit. The main discrepancy in parent and child responses was that 44% of students reported their parents doing nothing, while only 13% of parents reported doing nothing (Figure 11). During the discussion with the teachers, the general feeling was that a lot of parents did not really know how their child was performing at school, and only reacted at the end of the year if the child had to repeat the class.

²² Tang, Sandra & Davis-Kean, Pamela. (2015). The Association of Punitive Parenting Practices and Adolescent Achievement. Journal of Family Psychology. 29. 10.1037/fam0000137.
https://www.researchgate.net/publication/280628899_The_Association_of_Punitive_Parenting_Practices_and_Adolescent_Achievement

Figure 11: Types of feedback students report receiving when they get bad grades

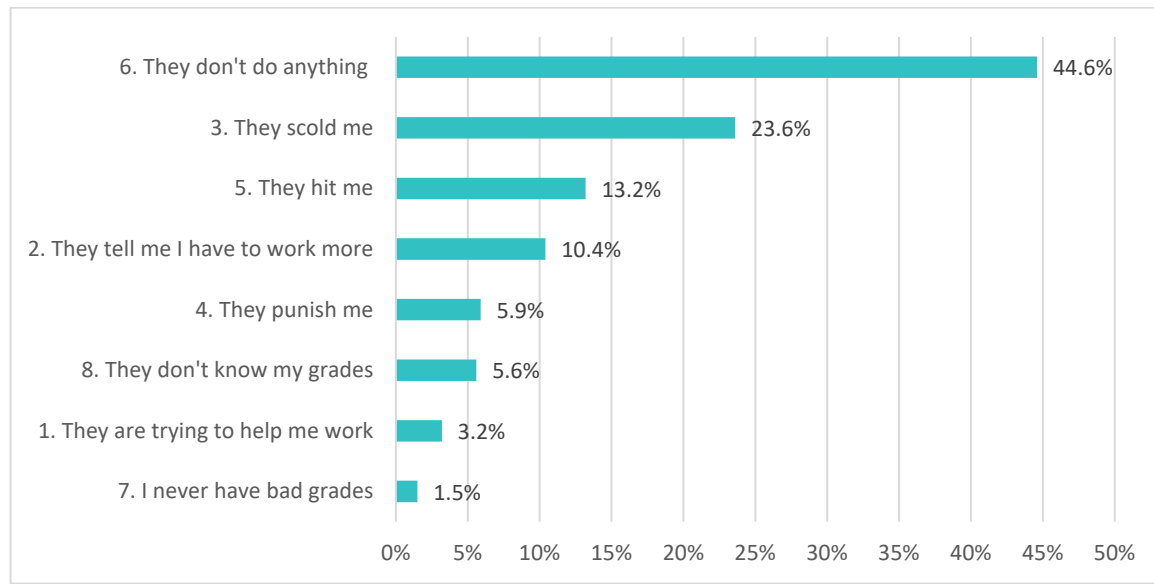


Image 4: Mothers of students and interviewer in focus group discussion



Conclusion

Despite the empirically proven benefits of family and community engagement, there are many factors that impact families' ability or willingness to support their children's learning. These factors include:

- Parents' motivational beliefs, including their sense of responsibility for their children's educational outcomes
- Parents' sense of efficacy, perceptions of invitations to engage, including those from schools, teachers, their children, or other actors; and
- Life-context variables, including parents' understanding of their own skills and knowledge, time or energy, and local culture of family involvement in education.²³

"Living conditions make work at home difficult. The huts have no light, and there is no table or chair. Children have nothing to write with."

Teacher Kalale

One of the key aspects to keep in mind is that about 70% of parents in northern Benin are illiterate. Therefore, most of them feel a sense of inadequacy when it comes to helping their children with their homework. During our focus group discussions, some parents shared the belief that their involvement would not have a positive influence on their children's educational outcomes because of their own lack of education. Illiterate parents may be embarrassed about their lack of reading and writing skills; however, many such parents have a strong desire for their children to become literate.

In order to increase parents' engagement, CRS's interventions should not be limited to advocacy but should also include activities helping or even teaching illiterate parents how to help their children. A toolkit could be designed on how parents can develop early literacy skills, assist children with their homework, and encourage them even when they are not performing well. In order to nurture literacy, children should also be given more opportunities to listen to stories, which can be provided by the radio, or told by story tellers or caregivers using wordless picture books in the local language or French, since fluency in the first language builds the foundation for second language learning. Given the inconsistency of results among teachers, parents and students, CRS Benin should develop a monitoring system for tracking if literacy activities are taking place at home, working with all stakeholders involved. For instance, teachers can send books home with students or provide homework that can be done orally, along with a sheet for the parent and student to sign to show that the activity has taken place. Other ways to confirm activities have taken place are to involve multiple families or form community reading groups.

²³ Hoover-Dempsey, K., Walker, J., Sandler, H., Whetsel, D., Green, C., Wilkins, A., & Closson, K. (2005). Why Do Parents Become Involved? Research Findings and Implications. *The Elementary School Journal*, 106(2), 105-130.

8 Research Question #3: Based on lessons learned from community participation, what strategies should be adopted to make this a success for McGovern-Dole FY17

8.1 Context and methodology

CRS's staff mentioned that in some localities during McGovern-Dole FY14, the staff confronted some challenges to achieve the level of community participation necessary to operate the program smoothly and successfully. CRS identified three main areas of possible concern: 1) difficulties finding volunteers, 2) frequent complaints from the cooks, and 3) challenges to collect parents' financial contribution for the school meals.

Data was collected from parents' and principals' questionnaires to evaluate the level of participation. Unfortunately, no systematic data was collected in regard to the parents' financial contribution.

During focus group discussions with the APE and AME members, we explored these issues in order to identify strategies to enhance community participation.

8.2 Findings and analysis

First, we asked the parents whether they participated in McGovern-Dole's activities, and then in which activity they were involved. Of the total respondents, 21.3% of parents mentioned participating in McGovern-Dole activities. This number is to be taken with caution, since we feel that the notion of "participation" was not understood by all respondents in the same manner. Some parents understood it as intending to volunteer for the program, while others thought participation meant assisting during an event or presentation.

Table 82 illustrates the program-related activities mentioned by parents. When we only consider the parents, who could mention one of the six program activities below, then the percentage of parent participation drops to 11.6%. Because of the low numbers, we cannot assert that this represents the actual distribution of activities among parents who are directly involved in the McGovern-Dole program, but it gives us a sense of the activities they are familiar with.

Table 82: McGovern-Dole activity involvement

Activities	Quantity n	Frequency
Canteen	25	23%
Store	6	6%
Garden/Farm	4	4%
Construction/Maintenance	9	8%
Literacy Event	9	8%
WASH Club	10	9%

Next, the evaluation team asked principals how often they experienced **challenges with recruiting volunteers** to get a sense of the magnitude of problem. As illustrated in Figure 12,

72% of school principals stated they have never had issues with recruiting volunteers, while 26% said it was sometimes difficult. Only one school principal said that it was always difficult. In this case, parents had contributed materials for constructing teacher accommodations and the construction was never completed, so they were reluctant to participate in other activities. In general, however, recruitment of volunteers was not a key concern of school principals.

Figure 12: Difficulty finding volunteers

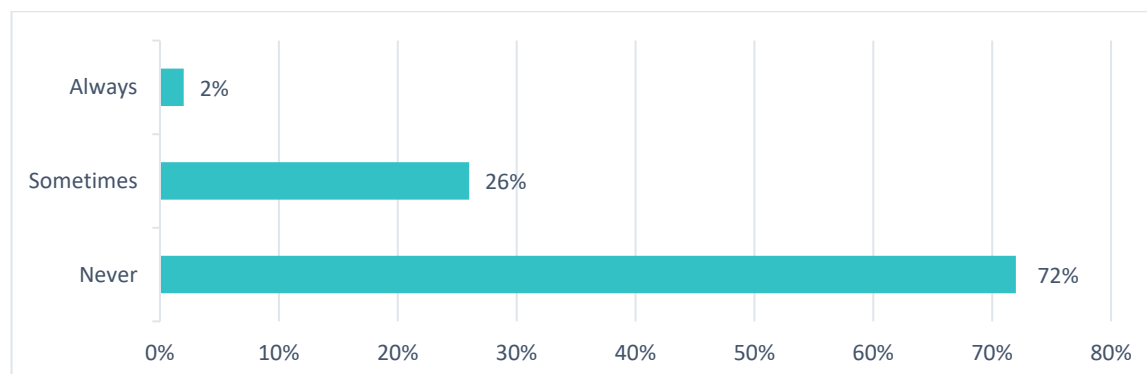


Image 5: Cook distributing food



Based on the quantitative and qualitative data collected, Et4d does not anticipate that community participation will be a challenge for McGovern-Dole FY17. However, it is advised to exercise caution in communities where farms or CLTS will be implemented, as these activities might require a higher level of community engagement leading to volunteer fatigue.

We interviewed cooks to find out their level of satisfaction with their work. All the cooks are women and most of the **cooks** interviewed shared similar complaints, the first one being the lack of compensation for their work. They mentioned that in other programs cooks receive a salary. However, after investigating this presumption, we learned that this is no longer the case. For McGovern-Dole FY17, cooks will

receive take home rations, which could improve their level of satisfaction.

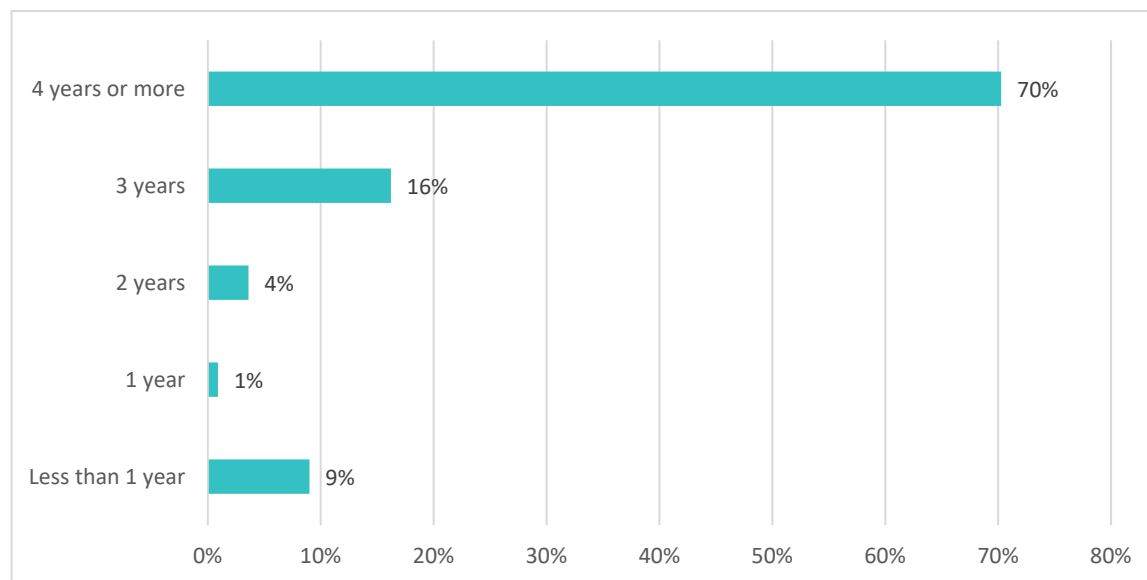
A few cooks complained about the perceived level of effort and consider that the cooking activity is taking too much of their time. Very few schools seem to have a rotation of cooks, and about 90% of the cooks reported working 5 days per week. A few schools have two teams who rotate, which might to be a better approach, granting mothers more free time to spend on personal and household tasks.

Some cooks compared their working conditions to the vendors, who are required by law to have a yearly medical check-up, while McGovern-Dole cooks are not. If budget allows, Et4d believes that it would make sense to harmonize practices. It was also mentioned on several occasions that

cooks have to pay themselves for the soap to wash their apron, and they suggested that detergent could be provided by the program.

Overall, despite a few complaints, recruitment and retention of cooks did not seem to be a challenge. Most cooks have been working since the beginning of the program and have shown no intention to quit (Figure 13). The only cooks who are being replaced are the ones who no longer have children enrolled in the school.

Figure 13: Number of years working as cook



Several principals mentioned difficulties encountered in collecting parents' **financial contributions**. The contribution was initially established at 25cts/day, but very few schools manage to collect this amount from all parents. We discussed this issue with principals and parents, but unfortunately no systematic data was collected with the survey tools. What resulted from the discussions was that different modes of collecting the contribution are being implemented based on the community and parents' revenues. We have identified four main modes of collection:

1. Collecting the contribution from the students daily via the teachers
2. Collecting the contribution from the students weekly via the teachers
3. Collecting the contribution from the parents monthly or per term via the AME/APE
4. Collecting the contribution from the harvest fund yearly

The principals, in agreement with the APE, had often tried different modes over the course of McGovern-Dole FY14 to see which one was easier and yielded the best return. Very few communities seemed to collect the contribution daily, even if many of them started that way. In the rural communities, the yearly collection after the harvest seems to be emerging as the best practice because parents are mostly farmers, and they have little to no cash during most of the school year. The community as a whole sells the harvest, and part of the revenue is retained by the school to pay the community teachers. With McGovern-Dole FY17, an additional amount of money will be contributed to the canteen for the procurement of the condiments.

Based on discussions held with several APE members and school principals, it seems that the difficulties encountered in collecting contributions from parents for the canteens have lessened over the course of the program. However, Et4d believes that some APEs could benefit from the

experience of others, and CRS could provide some guidance on the different possible ways to collect financial contributions from parents.

Conclusions

Et4d does not anticipate that community participation will be a challenge for McGovern-Dole FY17 for the activities which were already part of McGovern-Dole FY14, such as the canteen. However, we advise some caution in communities where farms or CLTS will be implemented, as these activities might require a higher level of community engagement leading to volunteer fatigue.

If budget allows, some of the cooks' complaints could be addressed, such as the procurement of soap and ensuring cooks receive an annual health check-up.

Regarding parents' financial contribution, it might be beneficial for CRS to provide some guidance on best practices, as experienced by different participating schools.

To improve community participation, CRS might also want to strengthen the dynamic of the collaboration between its partners. Indeed, during discussions with participants, one of the recurrent comments was the lack of perceived coherence of the "McGovern-Dole Program". The different components, such as literacy intervention and school canteen, are often perceived by participants as being implemented by different organizations. For instance, an AME could get a visit from a CRS staff person related to the food preparation, and on the same day, a visit from one of the NGOs working on parental involvement, without coordinating the visit or activities. With McGovern-Dole FY17, three new partners will be involved, Caritas for CLTS, and URP and PfD for the creation of community farms. Therefore, we recommend that CRS pays close attention to improving the coordination between partners. The lack of coordination between partners can create confusion and frustration among the participants and could hinder community engagement.

9 Recommendations

9.1 Performance Monitoring Plan

The performance monitoring plan is not perfectly aligned with the interventions, as some activities do not have indicators. In addition, some indicators do not have a clear set of activities which could impact the results. Et4d's suggestions include modifications or clarification of the indicators and target values, and clarification of tools used for assessment.

1. Clarify what tool will be used to evaluate the schools' administrators' use of new techniques.
2. For the indicator "Percent of parents who report spending time on literacy activities with their students in the last three days" our recommendation would be not to limit the help received to the parent interviewed but consider the help received by the child in general, and since the activities are focused on grades 1 and 2, we believe that the information reported by the student will be a better indicator of the outcome of the activities undertaken with McGovern-Dole FY17. The target value could be 70%.
3. If new EGRA instruments are designed in 2019, Et4d recommends equating the subtasks with the instruments used for the baseline of McGovern-Dole FY17, which would enable us to use the new instruments for midline and endline, unless INFRE validates the McGovern-Dole FY17 baseline instruments. Et4d does not recommend using the same instrument for evaluation and monitoring purposes.
4. The target of 32% of students reaching the reading comprehension target (3/5) seems high considering the current achievement is less than 1%. We would advise to lower it to 13% (3% per year)
5. Add a custom indicator to measure the progress on the EGRA lower level tasks, which could be the literacy achievement index as outlined in the current report.
6. Add specific custom output indicators for the activity undertaken by WEI based on the updated program design. They could include literacy events organized, library created, community of practice meeting held, etc.
7. Add a custom indicator to evaluate the level of implementation of the activities of the WASH clubs, not only their existence.
8. Include the indicator "Percentage of Children Receiving a Minimum Acceptable Diet" in the updated PMP. MAD is an indicator measuring the proportion of children age 6-23 months who receive the minimum acceptable diet. This indicator will need to be modified for school age children²⁴
9. The indicator "Percent of parents in target communities who achieve a passing score on a test of knowledge of good health and hygiene practices" is currently not in the PMP. However, we feel that parents outside of the AME benefit from some activities or awareness campaign on hygiene and nutrition. The test used for the baseline evaluation could be included in the PMP with a passing score of 80% correct answers and a target of 60% of parents passing the test.
10. The indicator "Percent of children in target communities who achieve a passing score on a test of knowledge of good health and hygiene practices" could have a passing score of 70% correct answers and a target of 40% of students passing the test.
11. If the activity related to menstruation training is maintained, an output indicator should be included to the PMP, such as the number of training sessions, and an impact indicator which could be a knowledge test with 10 true/false questions, for instance. Inadequate and

²⁴ see: <http://www.fantaproject.org/monitoringand-evaluation/iycf-indicators>

unsafe sanitation facilities in schools-combined with insufficient menstrual hygiene materials, fear of menstrual accidents and limited access to extra uniforms can lead to up to 20% of girls missing school.²⁵ Menstruation hygiene management is defined by WHO/UNICEF Joint Monitoring Program as “women and adolescent girls using clean menstrual management material to absorb menstrual blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required and having access to facilities to dispose of used menstrual management materials.” Future activities and indicators to measure could include: 1) Number of students trained on making re-usable sanitary pads, 2) other activities to increase hygiene materials, 3) increased safe and improved latrines.

12. For the indicator “Percent of schools with soap and water at hand washing stations commonly used by students” a reasonable target would be a 25% increase over the course of the project to achieve a 68% rate of proper implementation.
13. For the indicator “Number of community farms contributing to school feeding”, criteria for what constitutes ‘contributing to school feeding’ should be clearly defined.
14. For the indicator “Percentage of farms using best practice”, additional information will need to be collected to assess whether best practices are being implemented. Also, these best practices will need to be clearly defined. An observation test could be developed to that end, if the season allows, or another evaluation tool can be developed.
15. Values might need to be set to declare that a community farm contributes to school feeding.
16. For the communities using the Community-led Total Sanitation approach, additional information will be needed in order to assess whether the approach is really implemented. An observation test could be developed to that along with an associated indicator.
17. Regarding the indicator “Number of schools with WASH-friendly action plans” it is unclear whether this activity is purely related to McGovern-Dole FY17, since there are already a lot of WASH activities taking place in the school. A WASH-friendly criterion, in alignment with national standards, needs to be clearly defined with guidance developed and adhered to.

²⁵ Sommer, Marni, Jennifer S. Hirsch, Constance Nathanson, and Richard G. Parker. “Comfortably, Safely, and Without Shame: Defining Menstrual Hygiene Management as a Public Health Issue.” *American Journal of Public Health* 105, no. 7 (July 2015): 1302–11. <https://doi.org/10.2105/AJPH.2014.302525>.

9.2 Information to collect at midline

In order to improve our analysis or triangulate some of the data collected directly by CRS, some additional information should be collected at mid-line and end line. This list should be considered as a reminder for the development of the future instruments.

1. **Gender:** In each school, for each class collect the gender of each teacher, and whether s/he is a community teacher, an intern or a government teacher
2. **Materials:** Collect information on material distributed by WEI (Activity sheets, booklet, big books)
3. **Coaching:** Teachers' feedback on coaching performed by "conseiller pédagogique"
4. **Safe Food Preparation and Storage:** Our understanding is that the indicator "Percentage of individuals who demonstrate use of new safe food preparation and storage practices as a result of USDA assistance" will be measured by CRS. However, we recommend developing a version of the test which would be used by the external evaluator at midline and end line in order to triangulate the results provided by CRS's staff. One indicator to measure would be "Knowledge of Food Preparation Safety Practices: Percentage of School Principals/Cooks Knowledge of Food Preparation Safety Practices". This could include: 1. Wash hands with clean water and soap before preparing food or before eating, 2. Protect food from flies, cockroaches and dust, 3. Respect the shelf-life dates, 4. Avoid food with mold, 5. Avoid breaking the cold chain, 5. All raw consumed food (fruits and vegetables) must be cleanly washed before consumption.
5. **Child Health and Nutrition Practices:** Our understanding is that the indicator "Percentage of individuals who demonstrate use of new child health and nutrition practices as a result of USDA assistance" will be measured by CRS. However, we recommend developing a version of the test which would be used by the external evaluator at midline and end line in order to triangulate the results provided by CRS's staff. These health and nutrition practices need to be clearly defined. For example-what are the nutrition-related practices? Consumption of iron-rich foods? Consumption of nutrient-dense foods? Eating a balanced, dietarily diverse diet? Deworming?
6. **Meal Frequency:** Include a question on the number of meals eaten for the child nutrition survey. "How many times did (CHILD NAME) eat foods other than liquids yesterday?"
7. **Food type:** Update the list of food types to follow the Minimum Acceptable Diet (MAD) indicator developed by the World Health Organization
8. **WASH Clubs:** Collect systematic information from the WASH Club, such as the frequency to which latrines are washed, playgrounds swept, water stations filled and cleaned, etc.
9. **Teacher Language:** Capture the language spoken by the teacher in the EGRA, so that we can see whether the fact that the teacher does or does not speak the language spoken by the child affects his/her reading outcome.

9.3 Intervention design

The baseline evaluation was not designed to provide feedback on the intervention design. However, we feel that we should share a few findings and some recommendations for CRS's feedback, which are mostly the result of in-depth interviews with the partners involved in McGovern-Dole FY17. However, we are aware that new activities under McGovern-Dole FY17 cannot start until the baseline report is approved by USDA. This is a limitation to take into consideration when recommendations regarding the timing of activities.

1. Teachers' turnover is a major challenge because the training provided is lost when the teacher is transferred. In order to mitigate this challenge, we suggest designing a video training kit, which could be built using the best practice videos which were created during

- McGovern-Dole FY14. This could be especially useful for interns, who are usually young and likely to be familiar with video training techniques.
2. To encourage schools to be more WASH friendly, CRS might consider creating a WASH-friendly label/sticker or badge. A competition between schools could also be organized to reinforce WASH messages and motivate participants to improve their school.
 3. CRS could systematize knowledge-sharing about nutrition and WASH activities, currently the focus for only the AME and WASH Club members, but there is no mechanism in place to ensure the knowledge is shared with other students and with the community. Mobilizing that knowledge-sharing within the school and across the community would have some important multiplier effects.
 4. Some schools have implemented successful practices in regard to parents' contributions, school cleanliness, or water sanitation. CRS could be more proactive in sharing success stories between the schools, so that the good practices could be used in more schools.
 5. The role of the children in the WASH-Club seems to be focused on acting more like hygiene police rather than advocating and promoting good hygiene practices. The children were trained, and they are very knowledgeable, however they don't seem to be inclined to share their knowledge with their peers, and they have no didactic support to do so.
 6. Regarding CLTS activities, the planning shared with us by Caritas did not seem realistic. One of the challenges is that the implementation of such a program takes about 9 months, and it is recommended to start working with the villagers on the diagnosis around the end of the harvest season so that the most time-consuming activities take place when the farmers' activity is very low. Because McGovern-Dole FY17 started in January, the timing will be off. Our recommendation is to quickly select only a few communities and not 25 as originally planned and to use these communities as learning pilots. Caritas has never implemented the CLTS activity before, so it might also be helpful to ask for assistance from the local government, which has conducted it recently in the region and has national standards that need to be followed.
 7. McGovern-Dole FY17 has two partners working on the school farm program, URP and PfD. Based on our interviews, it seems that the two partners have very different ideas about how the farm project should be implemented in terms of planning, responsibilities, size of the farm, type of culture etc. During the workshop to be organized between the two partners, they will come to an agreement on a common approach while clarifying the responsibility. Home gardens are classified into three types: "traditional", "improved" and "developed" gardens. Our recommendation is to promote "developed gardens", which produce a wide variety of vegetables and fruit on a fixed plot of land throughout the year. This model relies on the dedication of participating schools/households. The model also builds linkages with local health and agriculture structures to provide additional services to participating schools/households and builds the capacity of local partners to provide sustained technical assistance on both agriculture and nutrition, to both schools and beneficiary homestead food producers after the life of the program. The school gardens should serve as a place for training and demonstrations on improved agricultural techniques and technologies, as well as a source for inputs for the school breakfasts/lunches. This includes looking at quality inputs such as low-cost quality seeds, seedlings, saplings and access to small scale irrigation. Nutrition education is an essential component, and leaders such as school teachers should facilitate sessions for parents to emphasize the importance of eating nutritious food, the food groups and dietary diversity, while teaching parent groups how to improve their households' dietary diversity and micronutrient consumption through cooking demonstration sessions using locally grown foods.
 8. The WEI component of the project seems to be for the most part re-conducting McGovern-Dole FY14 intervention and tools such as the activity sheets. The activity sheets were designed to help the children practice at home, and participants responded very positively.

Nonetheless, the activity sheets are not reusable and not sustainable. We recommend developing a version of the activity sheets as laminated posters which could be used in the classroom.

9. To improve knowledge sharing, CRS could develop some documentation which could be similar to the ones developed for the menstruation training. This could help the parents and children who have been trained to share their knowledge with other people.
10. It might be useful to harmonize hygiene practice and collaboration with the school vendors. More collaboration could take place and sharing of knowledge could be encouraged. This could be a way to ensure sustainability. In many schools the vendors could become the canteens' cooks when the funding from the USDA comes to an end.
11. Some cooks compared their working conditions to the vendors, who are required by law to have a yearly medical check-up, while McGovern-Dole cooks are not. If budget allows, Et4d feels that it would make sense to harmonize practices. It was also mentioned on several occasions that cooks have to personally pay for the soap to wash their aprons, and they suggested that detergent could be provided by the program.
12. It is not clear how building accommodations for teachers could be an incentive for teachers to stay in some of the remote schools. In fact, teachers do not decide whether they stay or not in a given school, and 90% of teachers express the desire to remain in the same school, despite their lack of accommodation.