Integrated Support for Sustainable School Canteens and Early Grade Reading in Ivory Coast (2016–2020)

Baseline Report

July 2016

Submitted by:

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ACRONYM LIST

ASER	Annual Status of Education Report
AVSI	Associazione Volontari per il Servizio Internazionale
CAFOP	Centre d'Animation et de Formation Pédagogique
EGRA	Early Grade Reading Assessment
DPFC	Direction de la Pédagogie et de la Formation Continue
HH	Household
HHH	Head of Household
INS	National Statistical Institute
ISSSC&EGRP	Integrated Support for Sustainable School Canteens and Early Grade Reading program
MENET	Ministère de l'Education Nationale et de l'Enseignement Technique
MGD	McGovern-Dole
PASEC	Programme for the Analysis of Education Systems in Francophone Countries
WFP	World Food Program

EXECUTIVE SUMMARY

This report presents the evaluation plan and baseline levels of key reading indicators for the *Integrated Support for Sustainable School Canteens and Early Grade Reading program (ISSSC&EGRP)* implemented by the World Food Program (WFP) in collaboration with AVSI in Ivory Coast. The program is funded by U.S. Department of Agriculture McGovern-Dole Program. The main activities of ISSSC&EGRP are setting up school canteens and providing school lunches in Ivory Coast. Additional activities include supporting the Ivory Coast Ministry of Education (MENET) to operationalize a new reading instruction method. The combined goal of ISSSC&EGRP is to reduce hunger and improve the reading skills of young children in Ivory Coast. The program will begin in 2016 and continue until 2020.

WFP and AVSI partnered with the National Statistical Institute (INS) to design the overall evaluation of the ISSSC&EGRP and to collect baseline data in April 2016. However, given INS's lack of experience in measuring reading proficiency, WFP and AVSI also contracted with IMPAQ International, LLC (IMPAQ) to partner with INS and support the evaluation team. IMPAQ worked closely with AVSI, WFP, and INS to design and implement an evaluation study to measure the progress of the program on reading indicators.

The IMPAQ team designed an evaluation of the reading component of the program, and developed, adapted, and calibrated a student reading assessment to fit the educational context in Ivory Coast. We developed a student questionnaire and provided training and support to enumerators to administer the reading assessment. We also selected a sample of program and control schools in which INS field teams collected the students' data. Finally, we performed descriptive and statistical analyses. Here, we present the findings related to the baseline reading indicators.

This report presents the baseline findings on 1,181 students from 99 primary schools in the 7 program regions: Cavally, Bafing, Bagoue, Poro, Tchologo, Boukani, and Gontougo. We derived these findings from the data from the students' reading assessment and survey, listed in the appendix, and augmented them with school and household survey data to capture essential school and home environment factors. The key findings include the following:

- Very few students can read at grade level: only 5 percent of first graders passed the acceptable reading threshold for the grade.
- The reading proficiency levels were low across all grades: 14 percent of second graders, 22 percent of third graders, 11 percent of fourth graders, 6 percent of fifth graders, and 8 percent of sixth graders read at grade level.
- Girls demonstrated lower reading skills than boys across all grades.
- There were substantial regional differences in the proportion of students who demonstrated grade-level reading ability.
- One in three students reported that they read at home with a parent or a sibling.
- Regardless of the low parental engagement in reading, three out of four students reported that they liked reading.

CHAPTER 1. INTRODUCTION

The World Food Program (WFP) in collaboration with AVSI are implementing the *Integrated Support for Sustainable School Canteens and Early Grade Reading program (ISSSC&EGRP)* in Ivory Coast, funded by U.S. Department of Agriculture McGovern-Dole Program (2016–2020). The main purpose of this 5-year school feeding project is to support 1,634 school canteens in high priority areas and to reach more than half a million beneficiaries. The project sets up school canteens and provides school lunches to alleviate hunger, reduce food insecurity, and improve rates of school enrollment and attendance among disadvantaged primary school students. In addition, the ISSSC&EGRP also aims to increase and improve the reading skills and literacy outcomes of primary school students in 613 rural schools by supporting the Ivory Coast *Ministère de l'Education nationale et de l'Enseignement Technique* (MENET)[1] to operationalize a new reading instruction method. The combined goal of ISSSC&EGRP is to reduce hunger and improve the reading skills of young children in the Ivory Coast.

WFP and AVSI partnered with the National Statistical Institute (INS) to design the overall evaluation of the ISSSC&EGRP and to collect baseline data in April 2016. However, given INS's lack of experience in measuring reading proficiency, WFP and AVSI also contracted with IMPAQ International, LLC (IMPAQ) to partner with INS and support the evaluation team.[2] Specifically, IMPAQ joined the evaluation team to accomplish the following:

(1) design an evaluation of the reading component of the program,
(2) prepare and adapt a student reading assessment,
(3) develop a student questionnaire,
(4) provide training and support on administering the reading assessment,
(5) analyze the reading data, and,
(6) report the findings related to the reading indicators.

After joining the evaluation team in March 2016, IMPAQ worked closely with AVSI, WFP, and INS to design and implement an evaluation study to measure the program's progress with respect to the reading indicators.

In the following sections, we discuss the context in which the intervention was designed, and describe the program's activities, and the involvement of the different partners in the evaluation of the ISSSC&EGRP.

1.1 Context

The core objective of the McGovern-Dole (MGD) Program is to reduce child hunger by providing school meals. Furthermore, by providing commodities and nutrition supplements to students, and teacher training and related support, MGD's projects aim to boost school enrollment and academic performance,

[1] Ministry of Education.
[2] The IMPAQ team has extensive experience in evaluating McGovern Dole Programs in West Africa. Our current portofio includes evaluations in Burkina Faso, Senegal, Mali, and Ghana. As part of these evaluations, we have designed study approaches, selected samples, prepared and adapted student reading assessments to country and language context, developed student, teacher, director, and mother survey questionnaires, provided training and oversight for field data collection, performed data analysis, and reported on findings. Through these evaluations, we have added value to clients, partners, and ministry staff by delivering high-quality products, by making practical recommendations for program improvement, and by building their technical capacity through workshops and dissemination.

especially for girls. The program is expected to improve literacy and primary education achievement by reducing hunger and bringing children into the schools.

Recent research has indicated that *learning* (e.g., reading skills) contributes more to a country's economic growth than *school attendance* (e.g., years of education). Hanushek & Woessman (2009) found that a 10 percent increase in the share of students who reach basic literacy skill levels translates into an annual growth rate that is 0.3 percentage points higher than it would otherwise be for that country. As a result of this and other findings, many international development programs have refocused their missions to keep children in the school systems and to ensure that the children are learning while at school.

The mastery of reading–the basis of student performance–develops gradually throughout all years of schooling. However, a child's most sensitive period to learn to read is between four and seven years of age. Children who learn to read in the early grades are better prepared to absorb more advanced skills and content that rely on reading in later grades. In contrast, children who experience reading difficulties in early grades are seriously disadvantaged compared to their peers. Specifically, young children who struggle to maintain the same reading level as their peers risk falling behind in other academic subjects. The children who experience early reading difficulties often are unable to absorb printed information, follow written instructions, or communicate in writing.

According to a 2009 administration of a Programme for the Analysis of Education Systems (PASEC) assessment, a diagnostic assessment in language and mathematics used in Francophone countries, Ivory Coast was classified in the group of countries with the lowest scores in reading and mathematics (MENET, 2012). The PASEC assessment showed that the quality of primary education in Ivory Coast had deteriorated since 2002.[3] A detailed analysis of the results showed that the weak performances of second and fifth grade students were linked to factors such as geographic location, poverty of parents, and residence in rural areas. The 2006 UNICEF supported Multiple Indicator Cluster Survey (MICS) further revealed that a third of young adults in Ivory Coast could not read a simple sentence without difficulty (INS, 2007).

Faced with difficulties in acquiring reading skills and challenges in improving the quality of education, MENET began reforming the national educational curriculum in 2012 to use the *syllabic method* to teach reading. The syllabic method is an intuitive way for children to learn to read and is used exclusively to teach reading in African languages. The main characteristic of the syllabic approach is that it is based on the knowledge of letters and the combination of written forms and written syllables that are spoken aloud (the oral syllable is an easily recognized unit of breath). It is based on "consonant-vowel" sequences, e.g., ba, be, bi, bo, bu; ka, ke, ki, ko, ku, etc. From these, teachers prepare written "syllable charts." The charts provide the basis for various activities, particularly for teachers and students to make up different words from the chart. Such word play activities appear to be very popular with learners, and teach them that words are composed of sounds and sounds are represented by letters. This syllabic approach is well suited to French, since many words have a consonant-vowel phonological structure, e.g., ma+man = maman (mother).

[3] The PASEC international evaluation methodology is based on the comparison of education systems' performance and matches the competencies of students with the educational indicators reported at three levels: the socio-economic background of students, the teaching conditions and the policy guidelines. It is being used in Benin, Burkina Faso, Burundi, Cameroon, Ivory Coast, Congo, Niger, Senegal, Chad, and Togo.

In reframing the educational curriculum to use the syllabic method, MENET is leading an effort to design and introduce new school regulations, curriculum materials, textbooks, and teacher trainings. The objective for the reframing process is to require students to achieve the following skills by the end of six years of primary school:

1. React properly to oral or written messages,
2. Speak fluently in communication situations in everyday life,
3. Read text fluently in French, and,
4. Produce simple written text in everyday communication situations.

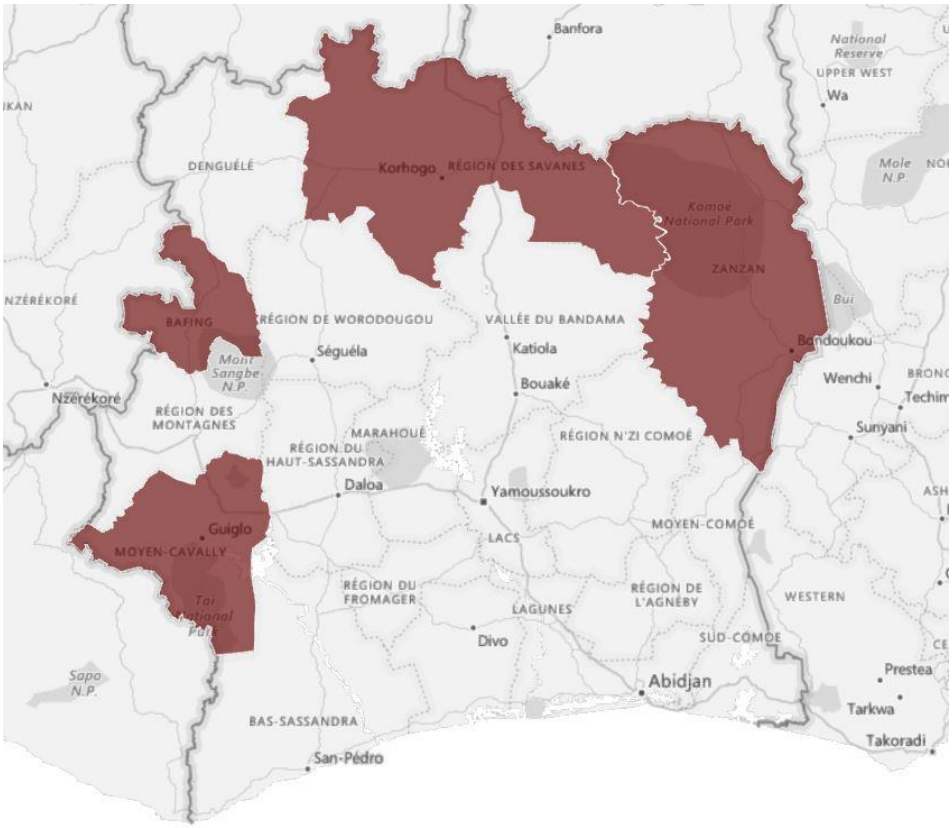
MENET introduced the syllabic method in the first and second grades of primary school. Based on this decision, the Directorate of Pedagogy and Programs operationalized the use of syllabic method through the development of new textbooks and teaching guides. The *ISSSC&EGRP* program was designed to support MENET in the reframing process. In the following section, we describe the intervention that the WFP and AVSI implemented in the Ivory Coast.

1.2 Description of the Intervention

The WFP has been implementing different school canteen related programs in Ivory Coast since the 1990s. In 2012, WFP, together with Government of the Ivory Coast and the United Nations Development Programme (UNDP), established a national strategy for school nutrition and defined ten priority zones in terms of highest level of food insecurity, highest level of malnutrition prevalence, highest poverty level, and lowest level of education. Subsequently, the WFP partnered with AVSI and the Government of Ivory Coast to implement the $35 million *ISSSC&EGRP* over a 5-year period.

Exhibit 1 presents 7 (out of the 10) high priority regions in Northern and Western Ivory Coast in which the MGD project is implemented: Cavally (Montagnes district), Bafing (Woroba district), Bagoue, Poro, and Tchologo (Savanes district), and Boukani and Gontougo (Zanzan district). These seven regions cover remote rural areas far from large urban centers. The WFP and AVSI selected these 7 regions for the program because the PASEC report found low reading indicators and learning difficulties in these regions.

Exhibit 1: Map of targeted regions in Ivory Coast



The program uses MGD supplied commodities and cash funding to achieve MGD's two highest level Strategic Objectives (SOs):

(1) improve literacy of school-aged children, and
(2) increase use of health and dietary practices.

These SOs are described further in Exhibit 2. As indicated in the exhibit, to achieve SO1, the implementer provides school meals, home rations, reading and other materials. To achieve SO2, the implementer trains management staff, provides tools and equipment, and provides other support to improve students' health and dietary practices.

Exhibit 2: List of Program Activities by Program Objectives

Program Objectives	Program Activities
Improve literacy of school-aged children (MGD-SO1)	▪ Provide school meals ▪ Provide take home rations for girls ▪ Train school management committees ▪ Develop local capacity to supply food to schools ▪ Provide reading materials ▪ Provide improved literacy instruction materials ▪ Conduct literacy instruction workshops ▪ Develop reading improvement toolkits

Increase use of health and dietary practices (MGD-SO2)	▪ Train canteen management staff ▪ Train school management committees ▪ Provide food preparation and storage tools and equipment ▪ Distribute deworming tablets

In the ISSSC&EGRP, the WFP's main focus is to deliver the canteen, nutrition, and health related program activities; AVSI's main focus is to deliver literacy related activities at the national, school, and individual level. AVSI's component activities are outlined in brief below:

- **At the national level**, AVSI supports MENET with improving and maintaining control of inventories of textbooks, toolkits, and resources.
- **At the school level**, AVSI manufactures mobile libraries, which are locally produced, to offer material and support to encourage recreational and cultural activities, and mobilize French language children's book donations.
- **At the teacher level**, AVSI provides training to teachers of first and second grade in the skills necessary to teach the syllabic method to students to enable them read more easily. Teachers also receive additional materials and supplies to enable them to conduct classroom exercises using the syllabic method.

Following the trainings and throughout the life of the project, teachers gather informally to share their difficulties and to facilitate exchange of experience. This peer support aims to promote collaboration among teachers in the same schools and in the same regions.

WFP and AVSI designed the *ISSSC&EGRP* to serve about 125,000 students each year in a total of 613 rural schools, representing about a quarter of all schools and students in the 7 regions. As part of the evaluation, INS identified 200 schools of similar socio-economic characteristics but without lunch canteens from the 7 regions to serve as comparison group. For the baseline data collection, INS drew a random sample of 169 program schools and 56 comparison schools stratified by region. At a second stage, INS selected a random sample of 3,636 households (12 households in Cavally, Bafing, Boukani, and Gontougo and 24 households in Bagoue, Poro, and Tchologo). The IMPAQ team used the sample of 169 program and 56 compariosn schools to design the evaluation component aimed at measuring the effect of the program on the reading indicators (see next chapter for more detail on the evaluation approach and data sources).

CHAPTER 2. EVALUATION APPROACH AND DATA

In this section the IMPAQ team describes the evaluation's approach to measure the effect of overall ISSSC&EGRP on reading indicators. We first list the research objectives, then describe the methodology, sample selection, and data sources that we used.

2.1 Research Objectives

This study has the following research objectives:

1) To provide detailed baseline data and establish benchmarks against which to measure the WFP-AVSI program's effectiveness;
2) To estimate the extent to which the ISSSC&EGRP improves reading outcomes for students after they have participated in the program for two and four years; and,
3) To estimate the impact of the WFP-AVSI program on participating boys and girls.

2.2 Methodology

This evaluation seeks to identify the causal impact of the WFP-AVSI program using a five-year nonexperimental design. We estimate how the WFP-AVSI program affects students' reading skills by applying a difference-in-differences (DID) design. Using DID design, we will compare the changes in reading outcomes over time between students who attend schools that receive the program (treatment group) with the changes in reading outcomes over time for students who attend schools that do not receive the program (comparison group).

Difference-in-Differences Design

The IMPAQ team uses DID to estimate the counterfactual for the change in outcome for the treatment group by calculating the change in outcome for the comparison group. This method enables the team to take into account any differences between the treatment and comparison groups that are constant over time. The advantage of the DID approach is that the treatment and comparison groups do not necessarily need to have the same pre-intervention conditions. However, for the DID to be valid, the comparison group must accurately represent the change in outcomes that would have been experienced by the treatment group in the absence of treatment. To apply DID, the team measures the outcomes in the group that receives the program and the group that does not both before and after the program.

To isolate the effects of ISSSC&EGRP, we will compare the changes in reading abilities of students who attend program schools with the changes in reading abilities of students enrolled in comparison schools. The difference between the two will indicate the program's effect. The DID approach is depicted in Exhibit 3 for second grade students.

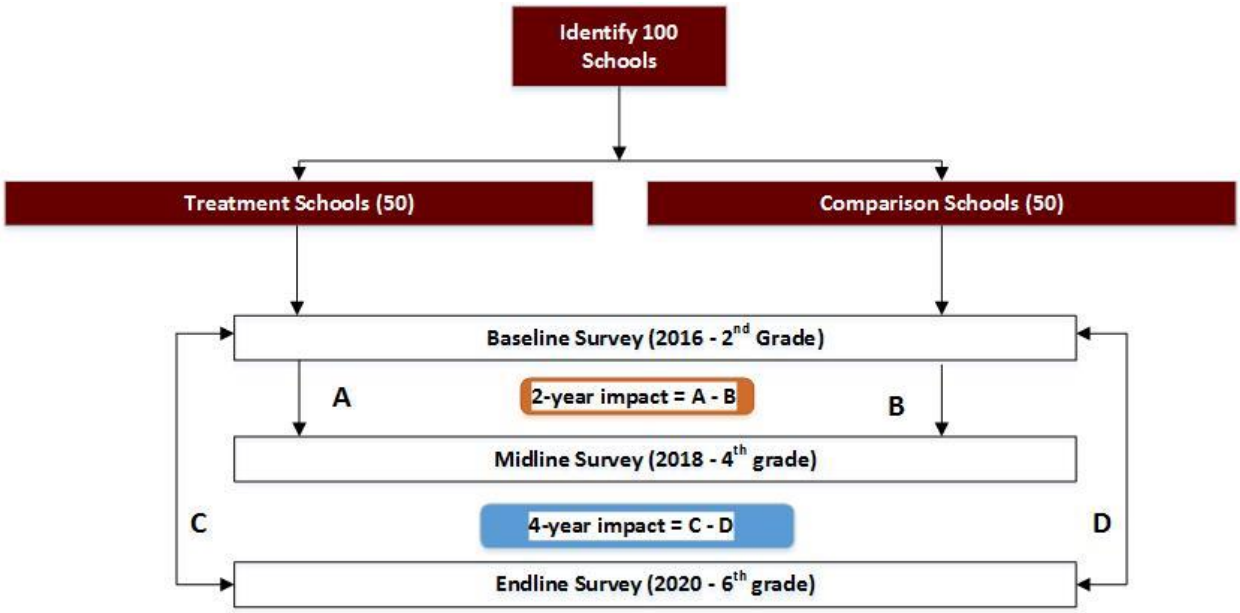
- A represents the difference in reading outcomes between baseline and midline for the treated group (change in reading scores after two years);
- B represents the difference in reading outcomes between baseline and midline for the comparison group (change in reading scores after two years);
- C represents the difference in reading outcomes between baseline and endline for the treated group (change in reading scores after four years); and,

- D represents the difference in reading outcomes between baseline and endline for the comparison group (change in reading scores after four years).

In summary, we compute the impact of the program as the difference between two differences:

- 2-year DID impact = A – B
- 4-year DID impact = C – D

Exhibit 3: Difference-in-Differences Evaluation Design



The IMPAQ team received from INS baseline reading outcomes from students from all six primary grades (CP1, CP2, CE1, CE2, CM1, and CM2) in 2016. The team plans to collect midline reading outcomes in 2018 from the students who were in the first four grades at baseline (CP1, CP2, CE1, and CE2). The students who were in the two highest grades at baseline (CM1 and CM2) will have graduated by the time of the midline follow-up (in 2018) and, thus, will not be included in the midline. In 2020, we will follow and collect endline reading assessments from the students from the first two grades at baseline (CP1 and CP2). The students who were in CE1 and CE2 in 2016 will have graduated by 2020 and will not be followed at endline (in 2020).

Two-year program effects: We will use the change in reading outcomes between 2016 and 2018 for students who were in grades CP1, CP2, CE1, and CE2 at baseline from the treatment group who received the program and the change in reading outcomes between 2016 and 2018 for students who were in grades CP1, CP2, CE1, and CE2 at baseline from the control group who did not receive the program. We will compare the change in reading outcomes of the treatment group with the change in reading outcomes of the comparison group to estimate the two-year program's effect on literacy growth.[4]

[4] We will survey the same students from the same schools so that we can construct the change in reading outcomes for each individual student.

Four-year program effects: We will use the change in reading outcomes between 2016 and 2020 for students who were in grades CP1 and CP2 at baseline from the treatment group who received the program and the change in reading outcomes for students who were in grades CP1 and CP2 at baseline from the control group who did not receive the program. We will compare the change in reading outcomes of the treatment group with the change in reading outcomes of the comparison group to estimate the four-year program's effect on literacy growth.

We will analyze the program's effects on reading for boys and girls separately and will take into account initial household and school characteristics in our analyses.

Descriptive Cohort Comparison

Reading proficiency at the end of first two years of primary education is an essential and required MGD performance indicator. Accordingly, the IMPAQ team will examine how the reading performance of first and second graders changes over the life of the program. As the schools and communities participate in the program over time, the team anticipates that teachers will improve their classroom instruction and parents will increasingly engage and support their children in learning to read. To investigate if students' early grade reading improves over time, the team will contrast the reading proficiency of first and second grade students at baseline (2016) with the reading proficiency of first and second grade students at midline (2018) and with first and second grade students at endline (2020). As these students will be from different cohorts, the team will use this descriptive analysis to report changes over time in the Ivory Coast.

In summary, the team's descriptive analysis will include new cohorts of students from the two lowest grades (CP1, CP2) in 2018 and again in 2020. In 2018, the team will collect reading assessments form a new cohort of CP1 and CP2 students. In 2020, the team will collect reading assessment from a new cohort of CP1 and CP2 students. This analysis will provide a clear picture of the changes in reading proficiency of the two lowest grades across time in the Ivory Coast.

Qualitative study

At midline and endline, the IMPAQ team's program evaluation will include a qualitative component to capture contextual information and provide in-depth knowledge about the program's mechanisms of change. In 2018, the team will conduct key informant interviews that focus on how the program has implemented the reading instruction program's activities, what, if any, challenges the program has encountered, and how the program addressed the challenges to improve the program. At the end of the evaluation period, the team will collect qualitative data to learn about the program's sustainability, including program activities that can continue after the end of the program, and key lessons learned. Potential key informants will include MENET and local education administrative staff.

2.3 Sample Selection

The IMPAQ team determined sample selection and sample size jointly with the implementing partners WFP and AVSI and with their evaluator and data collection partner INS. Prior to IMPAQ's involvement, INS applied a proportional sampling to select 169 schools out of the 613 beneficiary schools. From a pre-established group of 200 comparison primary schools with similar socio-economic and geographic characteristics, INS drew a sample of 56 comparison schools to be included in the evaluation study.

For the impact evaluation of reading outcomes, we took advantage of the prior sampling approach and incorporated it into the design. We aimed to include a balanced sample of 50 treatment and 50 comparison schools. The 50 treatment school were deteremined by drawing a random sample of from the 169 program schools already selected by INS for data collection. The team selected the 50 treatment schools across the 7 regions by maintaining the regional distribution of schools in order to ensure that in each region there are equal number of treatment and comparison schools.[5] The comparison schools were selected from the available 56 comparison schools already selected by INS for data collection.

At each identified treatment and comparison school, the team selected a random sample of 12 students.[6] Specifically, in each school, the team randomly selected 2 students from CP1, 2 students from CP2, 2 students from CE1, 2 students from CE2, 2 students from CM1, and 2 students from CM2 (12 students total). To ensure equal proportion of boys and girls, the team sampled one boy and one girl from each class. The total sample was 1,200 students across 100 schools.

By following students for 2 years, the team will have a sample size of 800 students (8 students per school from grades CP1, CP2, CE1 and CE2, 100 schools). This size enables the team to estimate a relatively small 2-year impact on reading for students from grades 1 through 4 (effect size of 0.30 standard deviations).[7] By following students for 4 years, the team will have a sample size of 400 students (4 students per school from grades CP1 and CP2 , 100 schools), which will enable the team to estimate some moderate 4-year impacts on students' reading abilities from grades 1 through 2 (effect size of 0.40 standard deviations).

2.4 Data Sources

INS, as part of the baseline data collection, developed four survey instruments: household survey, school survey, school management committee survey, and women's community group survey. To supplement these materials, IMPAQ designed an early grade reading assessment and additional student questionnaire, which we describe next.

Reading Assessment

Overview

IMPAQ developed and adapted the ASER-Reading test (and the test's administration instructions) to measure reading levels at baseline. IMPAQ will use the same tool to measure the program's effects on students' literacy outcomes at the midterm and endline.[8] The Annual Status of Education Report (ASER)

[5] We planned for 100 schools distributed as follows: 8 schools in Bafing (4 T and 4 C), 8 schools in Cavally (4 T and 4 C), 22 schools in Poro (11 T and 11 C), 12 schools in Tchologo (6 T and 6 C), 12 schools in Boukani (6 T and 6 C), 12 schools in Bagoue (6 T and 6 C), and 26 schools in Gountougo (13 T and 13 C).

[6] Our initial design called for a sample of six students from first grade and six students from second grade as the research focus was to measure the impact of the program on students' early grade reading abilities. However, INS's evaluation plan called for drawing a random sample of students from all six primary grades as their objective was to get a representative sample of all primary students. As this study needed to be integrated into the overall program evaluation, the team revised its plan to use a sample of 100 schools and a random draw of 2 students in each grade.

[7] The standardized effect sizes are estimated using Optimal Design software for 2-level cluster randomized trial under assumptions of 100 clusters, 8 observations per cluster, conservative inter-class correlation of 0.15, and 5 percent confidence level.

[8] To measure progress in reading over time, our design calls for using ASER assessment at midterm and endline. Other measures such as EGRA may be included to provide additional measures of reading competencies per minute.

Center pioneered in 2005 a nationwide survey, composed of a reading and math test, to measure the achievements of children in primary school in rural India in reading and math. Since 2005 inception, adapted versions of the tests have been implemented in Pakistan, Kenya, Mali, Senegal, Tanzania, Uganda, Ghana (Pratham 2015; USAID, 2012), Burkina Faso, and now Ivory Coast.

The ASER tests are designed as criterion-referenced assessments to categorize children on an ordinal scale indexing mastery in each of the basic skills in reading (letter identifications, word decoding, etc.) and math (number recognitions, subtraction, etc.). For example, the ASER-Reading test can classify children at the 'nothing', 'letter', 'word', 'sentence, or 'story' levels based on defined performance criteria or cut-off scores that allow testers to classify children as masters or non-masters of any given level. For example, a child's inability to correctly identify four out of five letters will classify the child at the 'nothing' level. Researchers administer the test orally and individually in about 10 minutes. Empirical research that has been conducted to evaluate the reliability and validity of the ASER testing tools shows that the tools have substantial reliability of decisions across repeated measurements, satisfactory inter-rater reliability, and suitable evidence for concurrent and convergent-discriminant validity (Vagh, 2009).

During the inception phase of the evaluation, IMPAQ convened a team of education and literacy experts to discuss early grade reading assessments and identify the most appropriate assessment to use in this evaluation. The team considered the two best-known oral early-grade reading assessments: ASER-Reading and Early Grade Reading Assessment (EGRA) developed by RTI. The team also reviewed PASEC, the reading assessment previously used in Ivory Coast. Following the team's in-depth analysis, as well as extensive further research on the topic, IMPAQ selected the ASER test for the following reasons:

- The ASER-Reading test is more appropriate to measure *grade-level* reading skills, and, thus, more appropriate to answer the evaluation's research question as related to McGovern Dole indicator: *"What are student's reading levels? What percent of students (male and female) can read and understand grade level text?*" In fact, the ASER-Reading test measures students' reading performance against a fixed set of learning standards (such as national curriculum standards for each grade) while EGRA is a reading fluency assessment measured by words read per minute that is not specific to a learning standard (Simons, 2012).
- The ASER-Reading test likely is more appropriate for the French language (the instructional language in Ivory Coast), than the EGRA test, as evidence suggests that the EGRA method has complexities such as sight words or short words that are more appropriate for the English language (Abadzi, 2011).
- The ASER-Reading test is a less complex assessment tool to design, train on, and administer with students and a more suitable assessment given the limited time to prepare before implementing field operations. Therefore, since the test is technically more appropriate for answering research questions related to MGD school feeding programs as compared to the EGRA test, ASER, thus, is a more cost-effective test for the purposes of such evaluations.

Calibration

In collaboration with AVSI staff, IMPAQ conducted an adaptation workshop in April 2016 at MENET in Abidjan to ensure that the IMPAQ-developed test and test administration instructions were culturally appropriate and consistent with Ivory Coast's learning standards for each grade level in primary school (Exhibit 4).

For the half-day adaptation workshop, IMPAQ convened a group of local reading, curriculum, and assessment experts from Directorate of Teacher Education and Continued Training (DPFC) within MENET to assess the appropriateness of the test and its administration instructions with respect to the following factors: (1) the language; (2) the grade level; and (3) the research questions. The following high level local experts participated in the workshop:

- Hili Baba, Assistant Director, responsible for pedagogical programs, didactic materials, and school libraries, DPFC
- Fofoua Adama, Communication Manager, DPFC
- Kane Soumaila, Program Director, Center for Teacher Training and Professional Development (CAFOP)
- Adaye Abenan Madeleie, responsible for Teacher Training programs
- Kouame Kossonou, textbook and manual designer
- Biley Jean Magloire, coordinator of the French language discipline, CAFOP
- Yao Kouassi Francois, regional coordinator of the French language discipline
- Bomah Eboi, responsible for primary school programs
- Niango Veronique, regional coordinator of the science disciplines
- Dally Vincent, national coordinator in mathematics, CAFOP.

Exhibit 4: Adaptation Workshop at MENET in Abidjan

The final version of the test included 11 levels (A-K), which correspond to the practical reading standards for each grade level. Exhibit 5presents the structure of the ASER-Reading test, including the test's levels

and corresponding grades and reading skills. Appendix 2 presents the ASER-Reading assessment and the test administration instructions.

Exhibit 5: ASER-Reading Test Structure

Level	Corresponding Grade	Reading Skill
Level 0	None	None
Level A	Grade 1 (CP1) – Lower level	Identify letters
Level B	Grade 1 (CP1) – Upper level	Read simple sounds
Level C	Grade 2 (CP2) – Lower level	Read complex sounds
Level D	Grade 2 (CP2) – Upper level	Decode simple words (1-2 syllables)
Level E	Grade 3 (CE1) – Lower level	Decode complex words (2-3 syllables)
Level F	Grade 3 (CE1) – Upper level	Read simple sentences
Level G	Grade 4 (CE2) – Lower level	Read complex sentences
Level H	Grade 4 (CE2) – Upper level	Read simple stories
Level I	Grade 5 (CM1) – Lower level	Answer reading comprehension questions on simple stories
Level J	Grade 5 (CM1) – Upper level	Read complex stories
Level K	Grade 6 (CM2)	Answer reading comprehension questions on complex stories

Source: IMPAQ.

Student Survey

We developed a brief student survey to collect students' demographic data such as age, gender, and grade; information about presence of books at home, including children's books; parental involvement in reading; reading alone practices; students' reading preferences; and to record the reading level of each student. The team fully integrated the brief survey with the remaining questionnaires to enable the team to link the students' information with the households' information from the household survey and school information. The team recorded each student with the same unique identifier as the unique identifier of his or her household.

IMPAQ led a one day training of enumerators in the Northern town of Bouake on how to administer the reading assessment in a classroom setting and then pilot tested the tool in a nearby school so that each enumerator had a chance to practice assessing students from all six grade levels (Exhibit 6 and Exhibit 7).

Household and School Survey

For this baseline report, we also drew from the INS developed household and school surveys questionnaires, which collected detailed information about family background as well as school characteristics. INS administered the household survey to collect information such as gender, marital status, and education level of the household head, household size, and distance between home and school. INS administered the school survey to collect school-level information such as urban vs. rural locality, presence of school library, total number of students and teachers. The team partners shared the results of the household and school surveys so that the IMPAQ team could incorporate the data in the analysis.

Exhibit 6: Training of Enumerators in Administering the ASER Assessment

Exhibit 7: Pilot Testing of the ASER Assessment at a Nearby School in Bouake

CHAPTER 3. EVALUATION SAMPLES

In the following sections we describe the sample of schools, students, and their household environments.

3.1 Schools

After the team made adjustments to the selection of sites to accommodate for the field work, the final sample consisted of 1,181 students from 99 primary schools (59 treatment and 40 comparison schools) across the 7 regions: Bafing, Bagoue, Boukani, Cavally, Gontougo, Poro, and Tchologo.[9] In each primary school, the team surveyed on average 2 students randomly drawn from each grade–one boy and one girl, or a total of 12 students in each school.[10] For each surveyed student, enumerators also surveyed their household. Exhibit 8 shows the distribution of sample respondents by region.

Exhibit 8: Sample Distribution by Region and Type of Respondent

Region	Type of Respondents		
	Schools	Students	Households
Bafing	10	120	120
Bagoue	10	120	120
Boukani	9	108	108
Cavally	12	145	145
Gontougo	21	252	252
Poro	28	328	328
Tchologo	9	108	108
Total	99	1,181	1,181

Source: Surveys of Student, Household, School; authors' calculations.

Exhibit 9 shows the distribution of school characteristics by region. Almost all schools were located in rural areas and only two percent were from urban localities (Poro region). Libraries were reported in seven percent of the schools (Bafing, Cavally, and Poro regions). The average primary school size was 198 students. Across regions, schools were the smallest in Bafing (113 students) and the largest in Poro (249 students). There were 41 students per teacher on average. The student-teacher ratio ranged across regions from as low as 35 to 1 in Bafing and 44 to 1 in Poro.

[9] We updated our sample of schools to accommodate for the reality on the ground and the data collection planning of the enumerators teams. First, we realized that the INS lists included fewer comparison schools than initially anticipated. Second, 15 out of 20 enumerator teams included a trained person to administer the ASER assessment, so we ensureed that these 15 trained teams covered all the sample schools. Therefore, we included all the 43 comparison schools to be surveyed. To make up for the shortatge in comparison schools, we compensated with additional treatment schools, a total of 57. Furthermore, during the field operations, we learned that 2 schools were in fact only one school and 11 comparison schools were replaced because they were inaccessible or for other reasons. Finally, INS reported that 2 comparison schools were to be removed because they had canteens and could not serve as comparison. We ended up with 99 schools (59 T and 40 C) distributed as follows: 10 schools in Bafing (5 T and 5 C), 12 schools in Cavally (4 T and 8 C), 28 schools in Poro (17 T and 11 C), 9 schools in Tchologo (5 T and 4 C), 9 schools in Boukani (6 T and 3 C), 10 schools in Bagoue (7 T and 3 C), and 21 schools in Gountougo (15 T and 6 C).

[10] The total number of students is 7 students short because 3 schools were short of a total of 9 students and 2 schools had 2 extra students. This is not problematic for the results as it represents less than 0.6% of the sample of students.

Exhibit 9: School Characteristics by Region

Region	Percent Urban Area	Percent with Library	Average School Size	Average Student to Teacher Ratio
Bafing	0	10	113	35 to 1
Bagoue	0	0	234	40 to 1
Boukani	0	0	215	42 to 1
Cavally	0	17	185	43 to 1
Gontougo	0	0	172	40 to 1
Poro	6	14	249	44 to 1
Tchologo	0	0	153	41 to 1
Total	2	7	198	41 to 1

Source: School Survey; authors' calculations. Total number of schools = 99.

3.2 Students

At baseline, the IMPAQ team received data from 1,181 primary school students from grades 1 through 6. Within each grade in each school, the team randomly selected one girl and one boy to maintain an equal ratio of boys-to-girls in the sample of students. This selection enables the team to disaggregate the data by boys and girls and to explore differences across grade levels.

Exhibit 10 presents the composition of the student sample in terms of grade, gender, and average age.[11] While students in each grade are in the correct age group on average, it is apparent that students vary in age in each grade. The implication of mixed ages classroom is that teachers are teaching children at different developmental skill levels.

Exhibit 10: Student Sample Composition

Grade	Percent Female	Average Age	Age Range	Observations
CP1— 1st grade	49%	7	4 – 12	235
CP2— 2nd grade	49%	8	6 – 16	212
CE1— 3rd grade	51%	9	6 – 14	205
CE2— 4th grade	48%	10	7 – 15	194
CM1— 5th grade	50%	11	8 – 15	189
CM2— 6th grade	49%	12	9 – 16	146

Source: Student survey; authors' calculations. Total number of students = 1,181.

[11] Our monitoring team indicated that 27 schools did not include all 6 grades. We instructed the enumerators to oversample from the adjacent grades to make up the necessary number of students, if possible. Most often smaller schools were missing the CM levels. Also, many schools had only 3 grades (CP, CE, and CM) and enumerators drew 4 students from each grade. Four schools in the sample only had CP grades where all 12 students were from those grades. This adjustment to the nature of the schools resulted in a sample with more students in the early grades and fewer in the higher grades. This is not problematic for the evaluation because our aim is to track the younger students for two and four years.

3.3 Household Environment

For each student, the household head was surveyed as well to collect family background information. Exhibit 11 and Exhibit 12 show key household characteristics, which are often described in the literature as important factors contributing to students' achievement and performance in school.[12] In the team's sample, most students lived in married households (90%). Only 12 percent of households were headed by women. The average household size was 10 people including 5 children aged 14 or younger. Most students lived less than 1km away from their school and only 13 percent of students lived 1 or more kilometers away.

Exhibit 11: Household Charachteristics

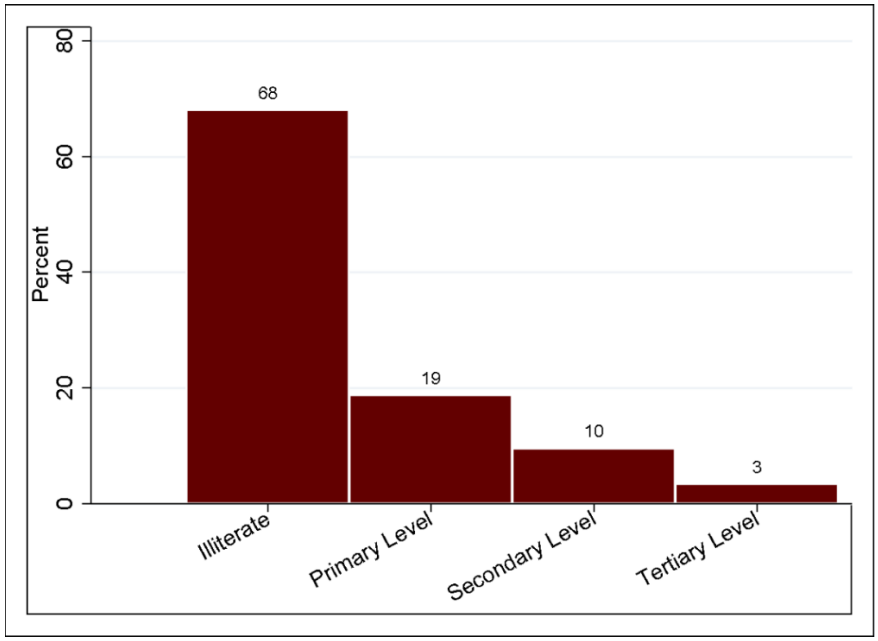
Indicator	Percentage	Observations
Female headed households	12%	1,181
Married headed households	90%	1,181
Indicator	**People**	**Observations**
Average household size		
Average number of people 14 years old or younger	5	1,181
Average number of people 15 years old or older	5	1,181
Indicator	**Percentage**	**Observations**
Household Size		
6 or less people	28%	1,181
Between 7 and 12 people	50%	1,181
13 or more people	22%	1,181
Distance between HH and school		
Less than 1 kilometer	87%	1,181
1 kilometer or above	13%	1,181

Source: Household Survey; authors' calculations.

The majority of students in the team's sample come from families in which the head of household had no formal education (68%). Nineteen percent of household heads completed primary education, 10 percent completed secondary education and 3 percent completed tertiary education (Exhibit 12).

[12] For example, empirical evidence suggests that mothers' level of educational attainment and the distance students live from school are associated with students' academic outcomes.

Exhibit 12: Head of Households' Educational Attainment (in Percentages)



Source: Household Survey; authors' calculations.

CHAPTER 4. BASELINE LEVELS AND BALANCE TEST

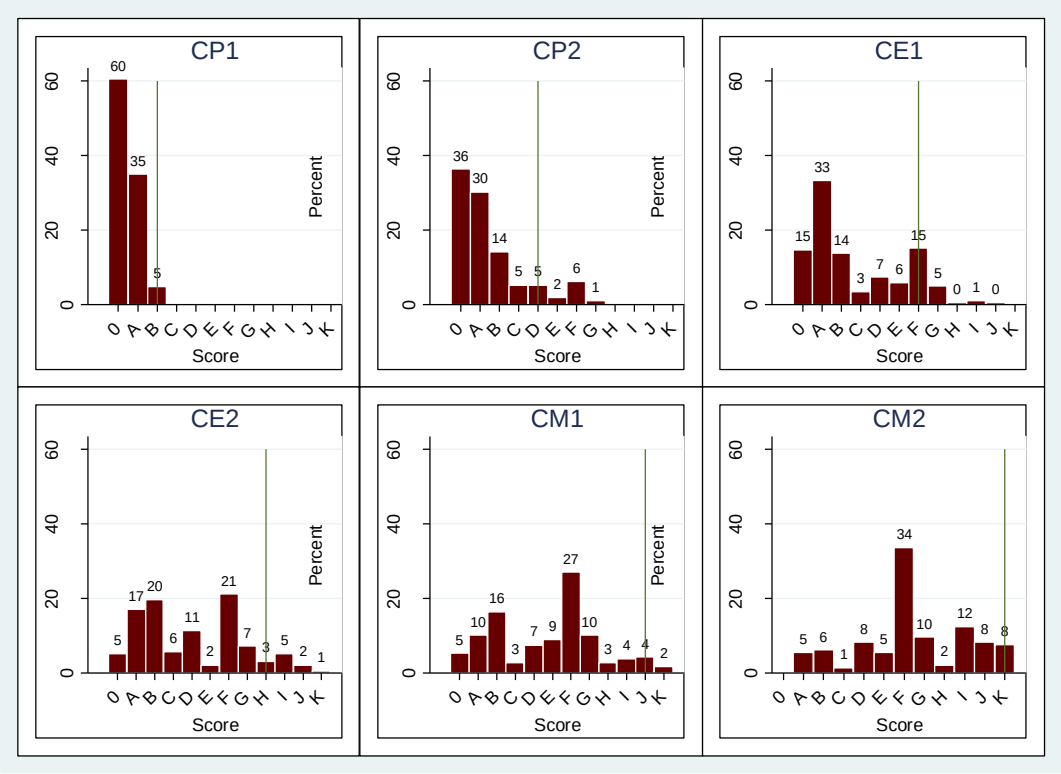
In the following sections, we present the baseline levels of the reading assessment, the other reading-related outcomes, and the balance tests between the program and comparison groups.

4.1 ASER Proficiency

Exhibit 13 shows the distribution of the ASER Literacy assessment's results and the acceptable thresholds by grade level. The threshold for each grade is represented with a vertical green line. We determined the thresholds for an acceptable reading level at each primary school grade according to Ivory Coast's curriculum guidelines and the calibration workshop that IMPAQ and AVSI held in April 2016 (refer to Exhibit 5 for the structure of the assessment levels). For example, the outcome of the calibration is that level B in the ASER test is the minimum acceptable level at the end of CP1. Level B corresponds to a student's demonstrated ability to read simple sounds. At baseline, only 5 percent of students from CP1 were at the threshold level; the remaining 95 percent of students were below. In CP2 only 14 percent of students were at the threshold or above--5 percent were able to decode simple words, 2 percent decoded complex words, 6 percent were able to read simple sentences, and 1 percent read complex sentences. The remaining 86 percent of CP2 students were below the threshold level D.

The six panels show that while some students demonstrated higher reading skills in the higher grade levels, many students showed limited basic reading skills that were below the thresholds for their grade levels.

Exhibit 13: Distribution of Reading Skills by Grade Level (Percentage of Students)



Source: Reading Survey; authors' calculations.

Exhibit 14 shows the proportion of students who demonstrated reading ability at the threshold level or above for Grade 1 (CP1) through Grade 6 (CM2). The data indicate that the majority of students, regardless of grade, did not pass the proficiency level of reading competencies. In fact, only six percent of students in CM1 could read complex stories and respond to comprehension questions after five years of schooling. Across all primary grades, third graders performed slightly better, with 23 percent of third graders able to read at grade level (read simple sentences).

Exhibit 14: Proficiency in Reading by Grade Level

Reading Ability	Percentage	Observations
Proportion of proficient CP1 (1ST grade) students at reading	5%	235
Proportion of proficient CP2 (2nd grade) students at reading	14%	212
Proportion of proficient CE1 (3rd grade) students at reading	22%	205
Proportion of proficient CE2 (4th grade) students at reading	11%	194
Proportion of proficient CM1 (5th grade) students at reading	6%	189
Proportion of proficient CM2 (6th grade) students at reading	8%	146

Source: Reading Survey; authors' calculations. Total number of students = 1,181.

Girls demonstrated lower reading skills than boys across all grades (Exhibit 22 in Appendix). There were also significant differences in the proportion of students who demonstrated grade-level reading ability across the sampled regions (Exhibit 23 in Appendix). Primary school students did not achieve grade level reading competencies in any of the regions. However, students in some regions performed better their counterparts in other regions. To note, the Bafing region performed the best among all sampled regions: 27 percent of students were able to read at grade level. The Tchologo region, on the other hand, performed the least well, with zero students able to read at grade level.

ASER Proficiency by Household Characteristics

We examined students' proficiencies in reading by key household characteristics, including the gender, marital status, and level of education of the head of households, as well as the households' sizes and the distance between the households and the schools.

As shown in Exhibit 15, there were no significant differences in students' reading abilities if the head of household was female or male and if the head of household is married or single (including divorced and widower). However, there were some difference in students' reading abilities depending on the level of education of the head of household. In fact, students from households whose head of household had completed secondary or tertiary levels of education performed better, between 6 to 12 percentage points more, than their counterparts from households whose head was illiterate or had only a primary level of education.

Exhibit 15: Proficiency in Reading by Characteristics of Household Head

Household Characteristic	Percentage	Observations
Gender		
Female	10%	140
Male	11%	1,041
Marital Status		
Married	11%	1,062
Divorced, Widower, Single Parent	10%	119
Highest Level of Education		
Illiterate	11%	809
Primary Education	8%	223
Secondary Education	17%	108
Tertiary Education	20%	41

Source: Reading and Household Surveys; authors' calculations. Total number of students = 1,181.

Exhibit 16 shows the students' grade-level reading abilities did not vary by household size or proximity to school.

Exhibit 16: Proficiency in Reading by Household Characteristics

Household Characteristic	Percentage	Observations
Household Size		
6 or less people	11%	332
Between 7 and 12 people	11%	591
13 or more people	10%	258
Distance between HH and school		
Less than 1 kilometer	11%	1,024
1 kilometer or above	13%	157

Source: Reading and Household Surveys; authors' calculations. Total number of students = 1,181.

ASER Proficiency by School Characteristics

We also examined students' proficiencies in reading by key school characteristics, including the locality of the school (urban versus rural), the presence of school library at the school, and the size of the school as well as the student-teacher ratio.

As shown in Exhibit 17, students in schools located in urban areas performed significantly better than their counterparts in schools in rural areas. In fact, 68 percent of students in urban schools achieved grade-level reading ability compared to only 10 percent of students in rural schools. Similarly, students who attended smaller schools (in terms of the student population size) or who were in classrooms with smaller student-teacher ratios performed slightly better than their counterparts in larger schools or in classrooms

that had larger student-teacher ratios. On the other hand, there was no significant differences in students' reading abilities if the school had a library.[13]

Exhibit 17: Proficiency in Reading by School Characteristics

School Characteristic	Percentage	Observations
Locality		
Urban	68%	19
Rural	10%	1,162
Presence of School Library		
With a Library	9%	82
Without a Library	11%	1,099
School Size		
Fewer than 100 students	14%	265
Between 101 and 250 students	9%	596
More than 250 student	13%	320
Student-Teacher Ratio		
Fewer than 30 students	17%	217
Between 31 and 50 students	8%	724
More than 50 students	14%	240

Source: Reading and School Surveys; authors' calculations.

4.2 Other Reading-Related Outcomes

We examined additional students' reading related outcomes in light of factors including the presence of books at home, whether students like to read, and whether students read at home. Access to books and supportive parental involvement are essential factors contributing to improved reading skills. As shown in Exhibit 18, 22 percent of students reported that there are books at home and only 7 percent reported having children's books at home.[14] Regardless of the low presence of books outside school, 3 out of 4 students reported that they liked reading,[15] about half reported that they read alone by themselves and 33 percent of students reported that they read at home with a parent or a sibling.

Exhibit 18: Presence of Books and Reading Activities at Home

Indicator	Percentage
Proportion of students that have books at home	22%
Proportion of students that have children's books other than textbooks at home	7%

[13] The data should be interpreted with caution as the number of urban schools and schools with libraries are very small.

[14] These outcomes should be interpreted with caution, since data may be subject to social desirability bias. With self-reported data, respondents may respond based on the answer they believe is expected of them. After consultations with our local partners, we believe that students may be over-reporting the availability of books at home. In follow up rounds, such data can be confirmed with observations.

[15] The data should be interpreted with caution as they may be subject to social desirability bias under the form of over-reporting "good behavior."

Proportion of students that like reading books	73%
Proportion of students that read books by themselves at home	51%
Proportion of students that read books with their parents or siblings at home	33%

Source: Reading Survey; authors' calculations. Total number of students = 1,181.

Boys were more likely to report that they had books at home than girls; however, girls were more likely to report liking to read books and reading with a parent or a sibling at home than were boys (Exhibit 24 in Appendix). There were differences in the presence of books at home by region. For example, in Bagoue, half of the students reported that there were books at their homes versus only eight percent of students in Bafing. Across all regions, while few students reported that they had any books at home, even fewer reported that had children's books other than textbooks at home (Exhibit 25 in Appendix).

ASER Proficiency by Presence of Books at Home, Parental Involvement, and Student Reading Preferences

We examined students' proficiency in reading by other characteristics, such as availability of books at home, students who like to read, and students who read at home. As shown in Exhibit 19, reading proficiency was higher among students who reported having books at home than among those who reported that they did not have books at home (17% vs. 9%). The presence of children's books, even though rare, also was indicative of higher reading proficiency–22 percent of students who reported having children's books were proficient in reading compared to 10 percent of students who reported that they did not have children's books at home. We found that parental involvement, as expected, is associated with higher proficiency in reading. Among students whose parents read with them at home, 17 percent were proficient in reading compared to 8 percent of students whose parents did not read with them. Finally, among students who revealed their preferences to read, 12 percent of them were reading proficiently compared to 9 percent among students who reported that they did not like to read.

Exhibit 19: Proficiency in Reading by Other Reading-Related Outcomes

Other Reading-Related Outcomes	Percentage	Observations
Presence of any books		
Have books	17%	259
Do not have books	9%	922
Presence of children's books		
Have children's books	22%	85
Do not have children's books	10%	1,096
Parental involvement		
Parent read with student	17%	386
Parent do not read with student	8%	795
Student reading preference		
Like to read	12%	858
Do not like to read	9%	323

Source: Reading Survey; authors' calculations.

4.3 Balance Test

The tables in this section show balance checks for key variables pertaining to the impact evaluation of the program. The team used balance checks to show that students in the control and treatment groups were similar on average, which enables the team to use the control group students as counterfactual, and represent the students who received the intervention, *had they not received it*. The criteria of interest to judge the balance test is the p-value of the statistical test of the difference of the means. A p-value above 0.10 indicates that there is no statistically significant difference between the control and treatment groups at baseline.

The IMPAQ team's tests indicated that there were no significant difference between the control and the treatment groups in most student, household, and school characteristics, as well as in student grade-level proficiency and other reading at home outcomes (Exhibit 20 and After inspecting the data more closely, the team found that the proportion of illiterate household heads in the treatment group was lower than the proportion of illiterate household heads in the control group. Additionally, among those households who have completed some schooling, the proportion of highly educated household heads in the treatment group was greater than the proportion of highly educated household heads in the control group. At the school level, schools in the control groups were significantly smaller in terms of number of students than schools in the treatment group which may have been related to the fact that they were more likely to be in or closer to urban areas. Finally, the proportion of students who reported that they liked reading was lower in the treatment group than the proportion of students who reported that they liked reading in the control group.

Exhibit 21). However, the team found some statistically significant differences in parental education, school size, and student preferences for reading variables (see bolded p-values). The team will be able to control for all three variables in the impact analysis, but mentions them here nonetheless.

Exhibit 20: Student, Household, and School Characteristics

Indicator	Control group		Treatment group		Difference
	Mean	Obs.	Mean	Obs.	p-value
Student level					
Proportion of girls	0.49	478	0.49	703	0.99
Age	9.39	478	9.61	703	0.27
Household level					
Proportion of female headed HH	0.14	478	0.12	703	0.92
Proportion of married headed HH	0.92	478	0.89	703	0.52
Proportion of illiterate headed HH	0.74	478	0.64	703	**0.02**
Proportion of highly educated headed HH	0.32	122	0.44	250	**0.05**
HH Size	10.03	478	9.57	703	0.43
Distance between HH and school	1.14	478	1.13	703	0.76
School level					
Proportion of urban schools	0.00	478	0.03	703	0.17
Proportion of schools with library	0.09	478	0.05	703	0.48
School size	147.48	478	231.67	703	**0.00**
Student—Teacher ratio	40.08	478	42.29	703	0.41

Source: Reading Survey; authors' calculations.

After inspecting the data more closely, the team found that the proportion of illiterate household heads in the treatment group was lower than the proportion of illiterate household heads in the control group. Additionally, among those households who have completed some schooling, the proportion of highly educated household heads in the treatment group was greater than the proportion of highly educated household heads in the control group.[16] At the school level, schools in the control groups were significantly smaller in terms of number of students than schools in the treatment group which may have been related to the fact that they were more likely to be in or closer to urban areas. Finally, the proportion of students who reported that they liked reading was lower in the treatment group than the proportion of students who reported that they liked reading in the control group.

[16] We defined highly educated household if the household head has completed secondary or tertiary education.

Exhibit 21: Student Reading Outcomes

Indicator	Control group		Treatment group		Difference
	Mean	Obs.	Mean	Obs.	p-value
Reading proficiency by grade					
Reading Proficiency in CP1 (% students)	0.04	124	0.05	111	0.65
Reading Proficiency in CP2 (% students)	0.15	87	0.14	125	0.80
Reading Proficiency in CE1 (% students)	0.17	86	0.25	119	0.34
Reading Proficiency in CE2 (% students)	0.11	80	0.11	114	0.92
Reading Proficiency in CM1 (% students)	0.03	63	0.07	126	0.33
Reading Proficiency in CM2 (% students)	0.11	38	0.06	108	0.55
Other reading-related outcomes					
Proportion of students that have books at home	0.22	478	0.22	703	0.90
Proportion of students that have children's books other than textbooks at home	0.05	478	0.09	703	0.16
Proportion of students that like reading books	0.81	478	0.67	703	**0.03**
Proportion of students that read books with their parents or siblings at home	0.28	478	0.36	703	0.19
Proportion of students that read books by themselves at home	0.54	478	0.48	703	0.39

Source: Reading, School and Household Surveys; authors' calculations.

CHAPTER 5. CONCLUSIONS

IMPAQ designed the methodology, and developed, adapted, and calibrated a reading assessment and student survey, to conduct an impact evaluation of the ISSSC&EGRP (2016-2020). For this evaluation, the team used data from 1,181 students from 99 primary schools (56 treatment and 43 control schools) in seven regions in Ivory Coast.

5.1 Key Findings

As discussed in this report, the IMPAQ team established baseline levels for the reading indicators against which the team will measure progress over time as the project's services are implemented. The team provided benchmarks for reading proficiency in grade 1 (CP1) through 6 (CM2).

The team found that students had particularly large deficits in their reading skills, regardless of their region or gender. The proportion of students who demonstrated reading ability at the threshold level or above was particularly low. The data indicated that the majority of students, regardless of grade, did not pass the proficiency level of reading competencies. This highlights the critical need, across all regions, for literacy-based interventions that can boost reading skills among primary school students.

The following are among the highlights from the data:

- Very few students can read at grade level: only 5 percent of first graders passed the acceptable reading threshold for their grade.
- The reading proficiency levels were low across all grades: only 14 percent of second graders, 22 percent of third graders, 11 percent of fourth graders, 6 percent of fifth graders, and 8 percent of sixth graders read proficiently at their grade level.
- Girls demonstrated lower reading skills than boys across all grades.
- There were substantial regional differences in the proportion of students who demonstrated grade-level reading ability.
- There is low presence of books in students' homes: 22 percent of students reported that there were books at home and only 7 percent reported that they had children's books at home.
- One in three students reported that they read at home with a parent or a sibling.
- Regardless of the low presence of books outside school and low parental engagement in reading, three out of four students reported that they liked reading.

5.2 Recommendations

The IMPAQ team presents the followings recommendations to AVSI and its local partners in Ivory Coast based on the team's experience in the field at baseline and after analyzing the data that the team collected.

Administer the same student reading assessment and survey at midline and endline. The evaluator should collect the same type of information at midline and endline under the same conditions and according to the evaluation design in order to make meaningful comparisons between different points of

time. While it is acceptable to add new questions to the existing survey questionnaire or include additional reading assessments such as EGRA, as needs arise, the IMPAQ team strongly advises against modifying the baseline survey questions, as modifications will make it more difficult for the evaluator to compare indicators over time. If the reading assessment is modified, then it will be hard to assess the extent to which changes in indicators between baseline and midline/endline are due to benefits from the project or to other factors.

Consider observations to complement self-reported data. Survey data on practices and behaviors are usually less reliable than observations of actual behaviors, particularly when the respondent is a child. The IMPAQ team recommends that the midline and endline data collection include observational data on presence of books at home and particularly children's books and that similar questions be added to the household survey. There is a tradeoff in collecting observational data, however, as it will require evaluators to survey household members at their homes, which was not required at baseline (e.g., a household member could have been surveyed in the field or at his or her work place). While there are advantages and disadvantages to adding observations, the IMPAQ team recommends adding observational data to provide a more nuanced picture of the presence of and students' access to books outside of school.

Plan the qualitative data to complement the quantitative data. The IMPAQ team recommends that AVSI and the evaluator should thoughtfully develop the interview protocols to facilitate cross-validation of findings and to produce robust conclusions. An integrated mixed-method approach, including both quantitative and qualitative methods, will increase the reliability and validity of the evaluation findings. The IMPAQ team recommends the following possible areas on which to focus the qualitative component:

- Project implementation, including what challenges were faced, how challenges were addressed, and what lessons can be learned that can help inform improvements to the project.
- Relevance and usefulness of specific project activities, such as the director and teacher literacy and pedagogical training, or the collection and distribution of children's books.
- Project sustainability, including what activities have been taken up by beneficiaries and what activities can/will continue even after the project's funding and support have stopped.

Keep detailed project records. The project should implement a comprehensive monitoring plan with unique identifiers for schools, directors, teachers, students and other project beneficiaries in order to track the project's progress over time and indicate if sites or beneficiaries are receiving the project's services as planned. In addition to a detailed monitoring plan, the project should ensure that the data are collected regularly (whether daily, weekly, or monthly) and ensure that someone is in charge of verifying the quality of the data. Finally, the project should ensure the consistency of project records in order to reduce the data cleaning burden at the end.

REFERENCES

Abadzi, H. (2011). *Reading fluency measurements in EFA FTI partner countries: Outcomes and improvement prospects* (GPE Working Paper Series on Learning, No. 1). Washington, DC: World Bank.

CONFEMEN et MINISTERE DE L'ÉDUCATION NATIONALE COTE D'IVOIRE. (2012). Rapport PASEC Côte d'Ivoire. *Evaluation diagnostique de l'école primaire : pistes d'actions pour une amélioration de la qualité*.

Hanushek, E. and L. Woessmann. (2009). *Schooling, cognitive skills, and the Latin American growth puzzle.* NBER Working Paper 15066.

Institut National de la Statistique. (2007). *Enquête à indicateurs multiples, Côte d'Ivoire 2006*. Rapport final. Côte d'Ivoire.

Pratham. (2015). Pratham Around the World. Retrieved from http://www.prathamusa.org/programs/pratham-around-world.

Simons, K.A. (2012). Discussion Document #1: Multi-Country Assessments of Learning. Washington, DC: Center for Universal Education at the Bookings Institution.

Vagh, S.B. (2009). *Evaluating the reliability and validity of the ASER testing tools*. New Delhi: ASER Centre.

USAID. (2012). *2011 USAID education strategy reference materials*. Washington, DC.

APPENDICES

1. **Gender/Regional Differences in Reading Outcomes**
2. **Student Survey Instruments**

APPENDIX 1: GENDER/REGIONAL DIFFERENCES IN READING OUTCOMES

Exhibit 22: Proficiency in Reading by Grade Level and Gender

Reading Ability	Girls	Boys
Proportion of proficient CP1 (1ST grade) students at reading	4%	5%
Proportion of proficient CP2 (2nd grade) students at reading	13%	16%
Proportion of proficient CE1 (3rd grade) students at reading	19%	25%
Proportion of proficient CE2 (4th grade) students at reading	11%	11%
Proportion of proficient CM1 (5th grade) students at reading	6%	8%
Proportion of proficient CM2 (6th grade) students at reading	7%	8%

Source: Reading Survey; authors' calculations.

Exhibit 23: Proficiency in Reading by Region

Region	Reading Proficiency
Bafing	27%
Bagoue	11%
Boukani	8%
Cavally	12%
Gontougo	9%
Poro	11%
Tchologo	0%

Source: Reading Survey; authors' calculations.

Exhibit 24: Reading Outcomes at Home by Gender

Reading Ability	Girls	Boys
Proportion of students that have books at home	20%	24%
Proportion of students that have children's books other than textbooks at home	7%	7%
Proportion of students that like reading books	74%	72%
Proportion of students that read books by themselves at home	49%	50%
Proportion of students that read books with their parents or siblings at home	35%	30%

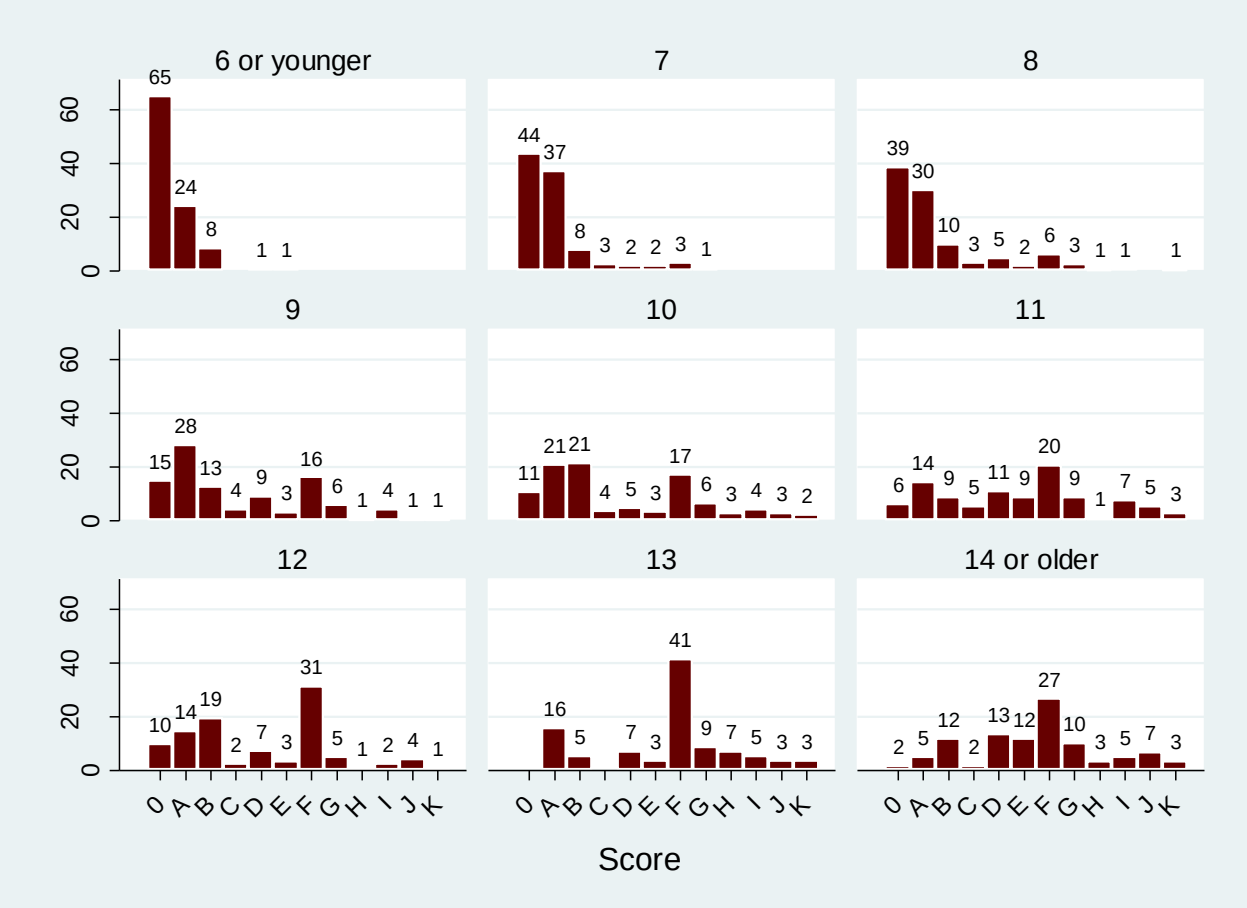
Source: Reading Survey; authors' calculations.

Exhibit 25: Presence of Books at Home by Region

Region	Any Books	Children's Books
Bafing	8%	1%
Bagoue	50%	22%
Boukani	19%	8%
Cavally	24%	8%
Gontougo	15%	2%
Poro	25%	6%
Tchologo	14%	10%

Source: Reading Survey; authors' calculations.

Exhibit 26: Distribution of Reading Skills by Age (Percentage of Students)

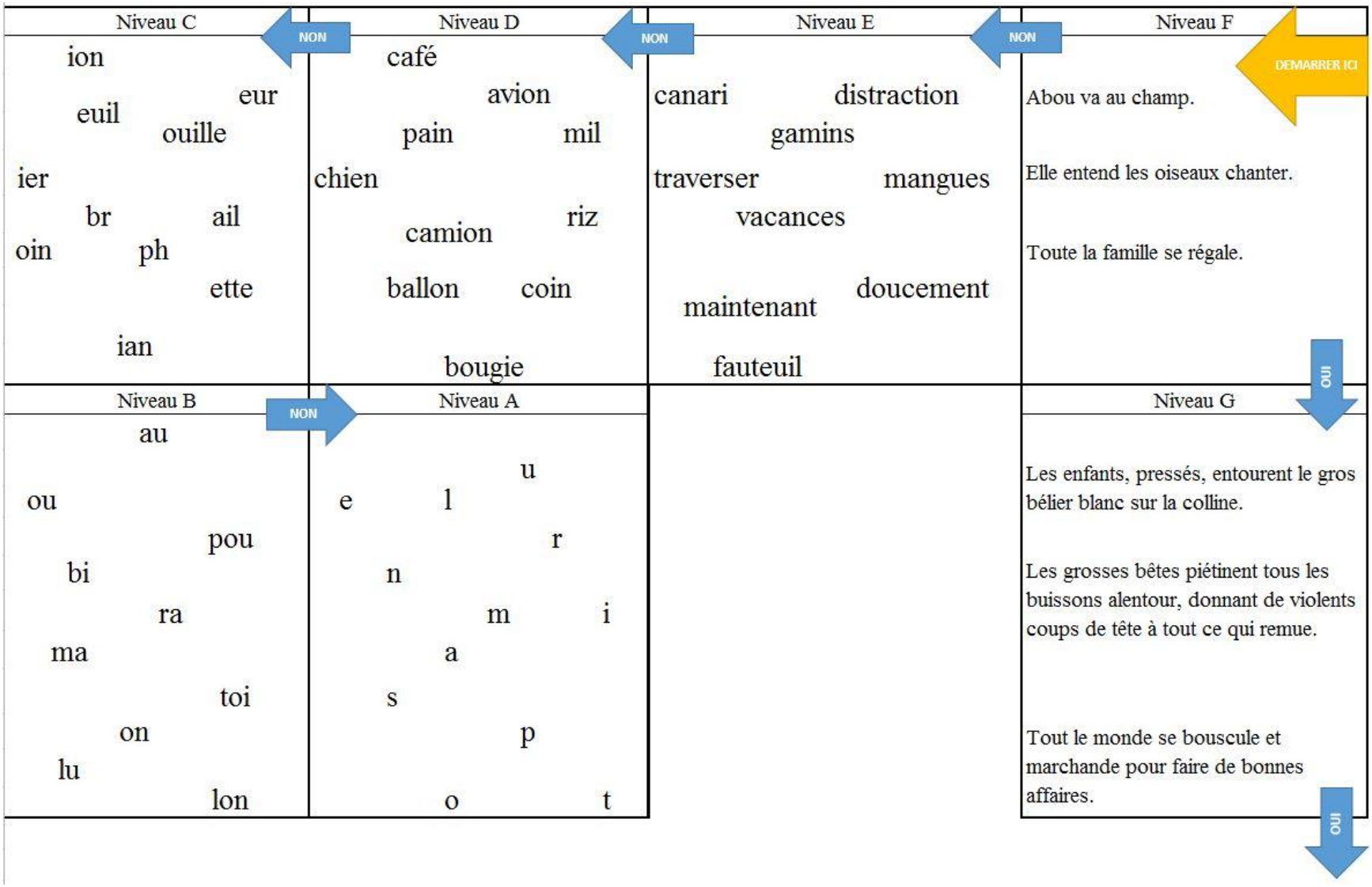


Source: Reading Survey; authors' calculations.

APPENDIX 2: STUDENT SURVEY INSTRUMENTS

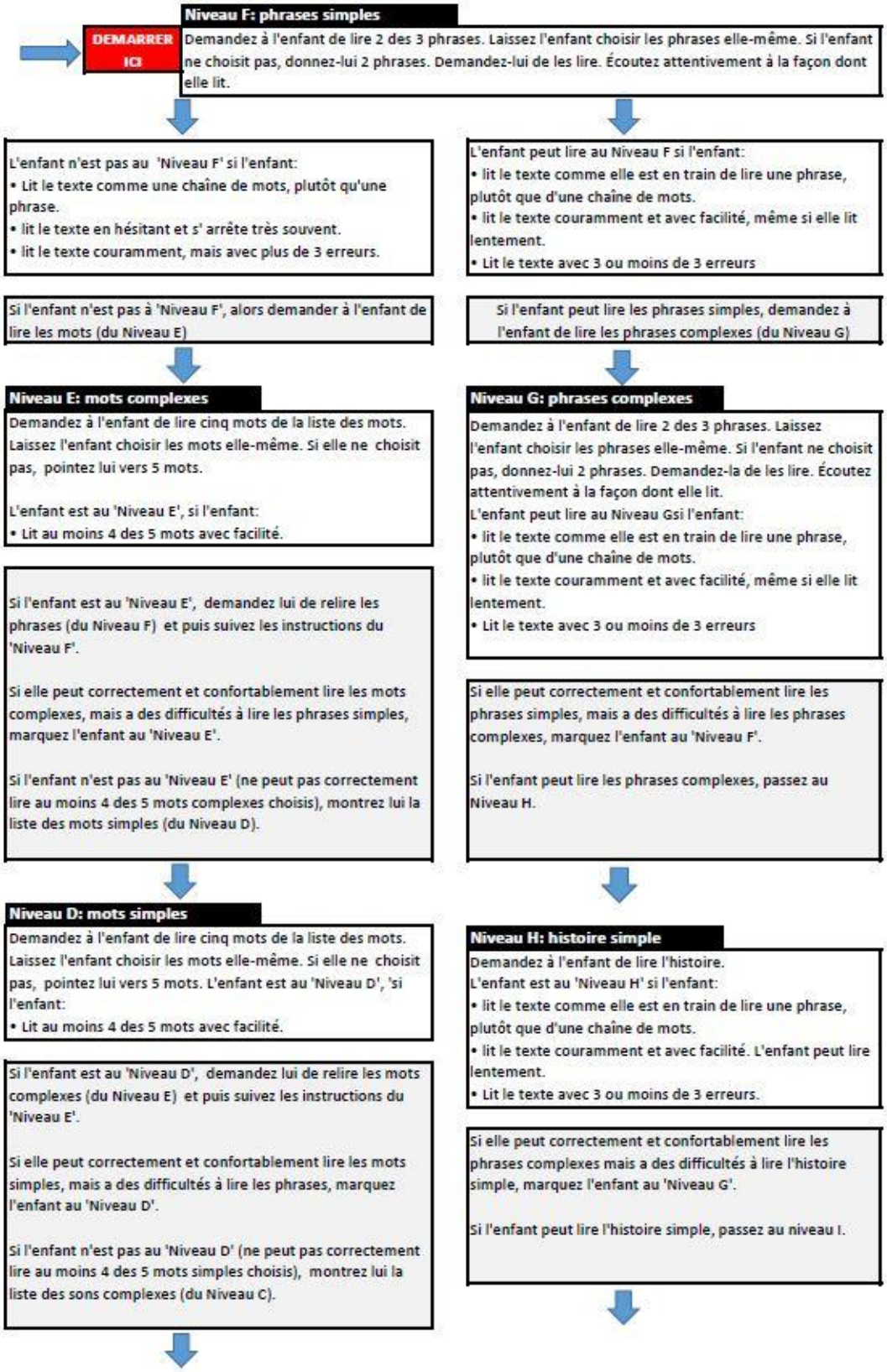
ASER Reading Assessment
ASER Test Administration Instructions
Student Survey

ASER Reading Assessment



Niveau I	Niveau H
Questions de compréhension (sur l'histoire du Niveau H): 1. Qu'est-ce que Samba et Nafi aiment ? 2. Où vont Samba et Nafi ? 3. Qu'est-ce que les oiseaux font quand le vent a soufflé ? 1 chasse, 2 aux champs, 3 se sont envolés	Samba et Nafi aiment la chasse. Un beau matin, ils vont dans les champs. Il y a partout des mange-mil, des moineaux et des perdrix. Les enfants sourient et sortent leurs lance-pierres. Tout d'un coup, un grand vent souffle, les oiseaux s'envolent. Quel dommage!
Niveau J	**Niveau K**
Un soir, pendant l'hivernage, Zézé revenait d'une promenade, alors qu'il faisait déjà nuit. Arrivé sous le tamarinier qui se trouvait non loin de notre concession, il entendit un bruissement de feuilles. Il aperçut une silhouette bizarre. La peur le prit. il cria de toutes ses forces : -Au secours ! Au secours ! Armés de machettes et de bâtons, les voisins arrivèrent en courant. Son cœur battait fort et il n'arrivait pas à répondre à leurs questions qu'il percevait a peine. Depuis ce jour, il prit la ferme résolution de ne plus rentrer tard à la maison.	**Questions de compréhension** (sur l'histoire du Niveau J): 1. Zézé revenait d'une promenade: - En début de journée - En fin de journée - En mi-journée? 2. Pourquoi Zézé a-t-il pris peur ? 3. Quelle décision Zézé a-t-il prise ?
1 en fin de journée, 2 il a aperçu une silhouette, 3 de ne plus rentrer tard à la maison	

ASER Assessment Administration Instructions



Niveau C: sons complexes

Demandez à l'enfant de lire cinq sons de la liste des sons. Laissez l'enfant choisir les sons elle-même. Si elle ne choisit pas, pointez lui vers 5 sons.

L'enfant est au 'Niveau C', 'si l'enfant:
• Lit au moins 4 des 5 sons avec facilité.

Si l'enfant est au 'Niveau C', demandez lui de relire les mots simples (du Niveau D) et puis suivez les instructions du 'Niveau D'.

Si elle peut correctement et confortablement lire les sons complexes, mais a des difficultés à lire les mots simples, marquez l'enfant au 'Niveau C'.

Si l'enfant n'est pas au 'Niveau C' (ne peut pas correctement lire au moins 4 des 5 sons complexes choisis), montrez lui la liste des sons simples (du Niveau B).

Niveau B: sons simples

Demandez à l'enfant de lire cinq sons de la liste des sons. Laissez l'enfant choisir les sons elle-même. Si elle ne choisit pas, pointez lui vers 5 sons.

L'enfant est au 'Niveau B', si l'enfant:
• Lit au moins 4 des 5 sons avec facilité

Si l'enfant est au 'Niveau B', demandez lui de relire les sons complexes (du Niveau C) et puis suivez les instructions du 'Niveau C'.

Si elle peut correctement et confortablement lire les sons simples, mais a des difficultés à lire les sons complexes marquez l'enfant au 'Niveau B'.

Si l'enfant n'est pas au 'Niveau B' (ne peut pas correctement lire au moins 4 des 5 sons simples choisis), montrer lui la liste des lettres.

Niveau A: lettres

Demandez à l'enfant de lire cinq lettres de la liste des lettres. Laissez l'enfant choisir les lettres elle-même. Si elle ne choisit pas, pointez lui vers 5 lettres

L'enfant est au 'Niveau A', 'si l'enfant:
• Lit au moins 4 des 5 sons avec facilité.

Si l'enfant est au 'Niveau A', demandez lui de relire les sons simples (du Niveau B) et puis suivez les instructions du 'Niveau B'.

Si elle peut correctement et confortablement lire les lettres, mais a des difficultés à lire les sons simples marquez l'enfant au 'Niveau A'.

Si l'enfant n'est pas au 'Niveau A' (ne peut pas correctement lire au moins 4 des 5 lettres choisis), marquez l'enfant au 'Niveau 0'

Niveau I: question de compréhension du text H

Lisez à l'enfant les trois questions de compréhension et demandez à l'enfant de répondre aux 3 questions.
L'enfant est au 'Niveau I' si l'enfant:
• Peut répondre correctement à au moins 2 questions de compréhension.

Si elle peut correctement et confortablement lire l'histoire simple mais a des difficultés à répondre correctement à 2 questions de compréhension marquez l'enfant au 'Niveau H'.

Si l'enfant peut répondre correctement à 2 questions de compréhension, passez au Niveau J.

Niveau J: histoire complexe

Demandez à l'enfant de lire l'histoire.
L'enfant est au 'Niveau J' si l'enfant:
• lit le texte comme elle est en train de lire une phrase, plutôt que d'une chaîne de mots.
• lit le texte couramment et avec facilité. L'enfant peut lire lentement.
• Lit le texte avec 3 ou moins de 3 erreurs.

Si elle peut correctement répondre à 2 questions de compréhension mais a des difficultés à lire l'histoire complexe marquez l'enfant au 'Niveau I'.

Si l'enfant peut lire l'histoire complexe passez au Niveau K.

Niveau K: Question de compréhension du text J

Lisez à l'enfant les 3 questions de compréhension et demandez à l'enfant de répondre aux 3 questions.
L'enfant est au 'Niveau K' si l'enfant:
• Peut répondre correctement à au moins 2 questions de compréhension.

Si elle peut correctement et confortablement lire l'histoire complexe mais a des difficultés à répondre correctement à 2 questions de compréhension marquez l'enfant au 'Niveau J'.

Si l'enfant peut répondre correctement à 2 questions de compréhension, marquez l'enfant au 'Niveau K'.

QUESTIONNAIRE LECTURE

Student Survey

FICHE LECTURE

OBJECTIFS : CETTE FICHE DE LECTURE A POUR OBJECTIF PRINCIPAL D'EVALUER LE NIVEAU DE LECTURE DES ELEVES DES SIX NIVEAUX DE CLASSE, APRES AVOIR REALISE UN TEST DE LECTURE. LES CODES A ENREGISTRER POUR LES NIVEAUX DE LECTURE, A LA QUESTION **1.10** SONT PRESENTES DANS LE TABLEAU SUIVANT :

Niveau	**0**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**
code	O	A	B	C	D	E	F	G	H	I	J	K

I/- A COMPLETER PAR LE CHEF D'EQUIPE		
I.1	Nom et *Code enquêteur* _____|__|__|	
I.2	**Date: |__|__| / |__|__| / 2016** *Jour* *Mois*	
	Identification de l'école	
I.3	DREN	|__|
I.4	IEP	|__|__|
I.5	Ecole	|__|__|__|
I.6	Type école |__|	**1. Bénéficiaire /2. Non bénéficiaire**

Enquête de base cantine scolaire/ Mc Govern-Dole dans les régions Bafing, Bagoue, Boukani, Cavally, Gontougo, Poro et Tchologo – Avril 2016

QUESTIONNAIRE LECTURE

L.0 Numéro d'élève	L.1 Nom / prénoms	L.2 Sexe Inscrire le code correspondant au sexe 1= Masculin 2= Féminin	L.3 Age (en années révolues)	L.4 Inscrire le code correspondant à la classe 1=CP1 2=CP2 3=CE1 4=CE2 5=CM1 6=CM2	L.5 Est-ce que ta famille a des livres à la maison ? 1= OUI 2= NON 9=Ne sais pas	L.6 As-tu des livres pour enfant à la maison en dehors des livres scolaires ? 1= OUI 2= NON	L.7 Est-ce que tu lis avec une personne/ tes parents à la maison ? 1= OUI 2= NON	L.8 Est-ce que tu lis tout seul à la maison ? 1= OUI 2= NON	L.9 Est-ce que tu aimes lire ? 1= OUI 2= NON	L.10 Après évaluation, indiquer le code correspondant au niveau de l'élève en lecture
1	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
2	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
3	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
4	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
5	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
6	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
7	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
8	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|

Enquête de base cantine scolaire/ Mc Govern-Dole dans les régions Bafing, Bagoue, Boukani, Cavally, Gontougo, Poro et Tchologo – Avril 2016

QUESTIONNAIRE LECTURE

L.0 Numéro d'élève	L.1 Nom / prénoms	L.2 Sexe Inscrire le code correspondant au sexe 1= Masculin 2= Féminin	L.3 Age (en années révolues)	L.4 Inscrire le code correspondant à la classe 1=CP1 2=CP2 3=CE1 4=CE2 5=CM1 6=CM2	L.5 Est-ce que ta famille a des livres à la maison ? 1= OUI 2= NON 9=Ne sais pas	L.6 As-tu des livres pour enfant à la maison en dehors des livres scolaires ? 1= OUI 2= NON	L.7 Est-ce que tu lis avec une personne/ tes parents à la maison ? 1= OUI 2= NON	L.8 Est-ce que tu lis tout seul à la maison ? 1= OUI 2= NON	L.9 Est-ce que tu aimes lire ? 1= OUI 2= NON	L.10 Après évaluation, indiquer le code correspondant au niveau de l'élève en lecture
9	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
10	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
11	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|
12	_____	_|	__| ans	_|	_|	_|	_|	_|	_|	_|

L.11 Observations