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**BASELINE ASSESSMENT OF THE
MCGOVERN-DOLE FOOD FOR
EDUCATION (FFE III) PROGRAMME
BASELINE STUDY REPORT**

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Disclaimer

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

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List of abbreviations

FFE	Food For Education
CAPI	Computer Assisted Personal Interviewing
CART	Classification and Regression Tree
CHW	Community Health Worker
CSI	Coping Strategy Index
DEQA	District Education Quality Assurers
DHS	Demographic and Health Survey
DID-PSM	Difference-in-Differences – Propensity Score Matching
ECG	Education Cascade Groups
EGRA	Early Grade Reading Assessment
FGD	Focus Group Discussion
GAM	Gender Analysis Matrix
GoT	Government of Tanzania
HH	Household
IDI	In-Depth Interview
INSET	In-Service Education and Training
MoEST	Ministry of Education Science and Technology
NECTA	The National Examinations Council of Tanzania
OLS	Ordinary Least Squares
OR	Odds Ratio
PCA	Principal Component Analysis
PCI	Project Concern International
PETS	Public Expenditure Tracking Survey
PSLE	Primary School Leaving Examination
PTP	Parent Teacher Partnership
SF	School Feeding
SRS	Simple Random Sampling
SSR	School Sustainability and Readiness
SWASH	School Water, Sanitation and Hygiene
TP	Teacher's Position
TZS	Tanzanian Shillings
UMT	Utilization of Management Tools
URT	The United Republic of Tanzania
USAID	United States Agency for International Development
PDL	Pedagogical Leadership
VGC	Village Governance Council
VSA	Voluntary Student Aide
WAEO	Ward Agricultural Extension Officer
WCDO	Ward Community Development Officer
WDC	Ward Development Council
WE	Women Empowered
WEC	Ward Education Coordinator
WEO	Ward Executive Officer
QA	Quality Assurer

1. Executive Summary

1.1. About McGovern-Dole Food For Education Programme

PCI implemented the McGovern-Dole Food For Education (FFE) programme in phase I (2010 – 2014) and phase II (2013 – 2016) and plans to implement the third phase of the programme from October 2016 to December 2021. The project is implemented in the Mara region of Tanzania in the districts of Musoma Rural, Bunda and Butiama. The FFE III programme builds on previous phases' learning and introduces new methodologies focused on making the school feeding programme sustainable at a community level and contributing positively to overall learning outcomes among children. In addition to school meals, PCI will provide a range of interventions that ultimately lead to increased overall literacy (see Annexure 1 for FFE III causal pathways). PCI engaged Sambodhi to carry out a baseline survey from April to June 2016, to establish baseline values for selected project indicators that serve as a basis to measure project progress and provide information to help refine programme strategies, activities, targets and milestones.

1.2. Baseline study scope and methodology

The study team adopted a quasi-experimental design as the overall baseline methodology. The baseline study sample for project area districts included 50 schools, 800 students, 150 teachers and 400 parents. Within the 50 project area schools, 16 are new to the FFE programme added in FFE phase III.

District	Total no. of schools	Schools continuing since FFE I	Schools continuing since in FFE II	Schools new in FFE III	Proportion of Sample (%)	Sample Continuing FFE I	Sample Continuing FFE II	Sample New FFE III
Butiama	57	9	13	35	12.0	2.	3	7
Bunda	101	51	10	40	22.0	11	2	9
Musoma Rural	73	60	13	0	16.0	13	3	0

Similarly, the baseline study sample from the Serengeti District comparison area was 50 schools, 800 students, 150 teachers and 400 parents. Serengeti district is a well-established comparison area for evaluating the FFE programme as it has similar attributes to FFE project area.

Quantitative data collected included school infrastructure assessments, classroom observations, student early reading grade assessments (EGRA) and parent, teacher and student surveys. Qualitative key informant interviews (KIIs) and focus group discussions (FGDs) were also conducted. In total, 10 FGDs were conducted with parents from project and comparison districts; 10 KIIs were conducted with head teacher in the project districts; 5 FGDs with WE groups and 5 FGDs with farmer groups were conducted in the project districts. In total, 20 KIIs were conducted with students in grade VI across project and comparison districts. Local and district government representatives, and PCI officials were also interviewed to collect qualitative insights.

Descriptive analysis included frequency distribution and summary statistics to understand the distribution of key indicators across project and comparison district schools. Descriptive analysis and comparative analysis was followed by bivariate and multivariate analysis such as chi-square test, t-test, one-way anova to comment on whether the differences in indicator values across project and comparison areas were statistically significant.

1.3. Key results

Table 1 presents the indicator values across project and comparison areas.

Table 1: Indicators for the baseline study

#	Indicators	Comparison		Project		FFE I		FFE II		FFE III	
		N	%	N	%	N	%	N	%	N	%
1	Percentage of students who score above national benchmarks in non-word reading ¹	600	4.5	600	7.5	312	7.3	96	8.3	192	7.2
2	Percentage of students who score above national benchmarks in oral fluency reading ²	600	30.3	600	32.8	312	33.6	96	39.5	192	28.1
3	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 ³	600	19.2	600	16.3	312	15.7	96	17.7	192	16.1
4	Percent of students who were “ <i>off task</i> ” at the beginning, middle and end of a classroom lesson	50	7.4	50	5.7	26	5.4	8	4.6	16	6.7
5	Percent of students who indicate that they are “ <i>full</i> ” during the school day	800	100.0	800	77.0	411	72.9	128	78.3	261	100.0
6	Percent of students who were absent from school due to illness in the past six months	800	4.2	800	4.6	412	4.6	132	5.7	256	4.1
7	Percent of school-age children receiving a minimum acceptable diet	330	41.3	327	40.9	178	43.2	40	30.3	109	42.6
8	Percent of students who can identify at least three good health/ hygiene practices	604	75.5	533	66.6	262	63.6	99	75.0	172	67.2
9	Percent of mothers (or care providers) in targeted communities who can identify at least three important preventive health practices	242	94.2	223	94.5	120	93.8	37	100.0	66	93.0
10	Percent of students that can identify at least three important nutritional/dietary recommendations	725	90.6	721	90.1	358	86.9	117	88.6	246	96.1
11	Percent of parents that can identify at least three important preventive health practices	383	95.8	381	95.3	198	95.2	62	96.9	121	94.5
12	Percent of parents/guardians who can identify three benefits of children completing primary school	361	90.3	369	92.3	190	91.3	58	90.6	121	94.5

¹ National benchmarks require more than 40 words per minute for students to be considered fluent in this sub-task

² National benchmarks require more than 50 correct words per minute for students to be considered fluent in this sub-task

³ National benchmarks require students to read more than 80% of the total comprehension

#	Indicators	Comparison		Project		FFE I		FFE II		FFE III	
		N	%	N	%	N	%	N	%	N	%
13	Number of students enrolled in the school till May 2017 ⁴	676	N/A	623	N/A	563	N/A	688	N/A	687	N/A
14	Percentage of students regularly (80%) attending supported schools in the past six months ⁵	649	81.1	663	82.9	331	80.3	112	84.8	220	85.9
15	Percentage of schools using an improved water source ⁶	17	34.0	23	46.0	11	42.3	6	75.0	5	31.3
16	Percentage of schools with improved sanitation facilities	25	80.6	32	86.5	21	95.5	5	83.3	7	77.8

⁴ Average enrollment per school sampled

⁵ Based on the number of days a student attended school in the past 6 months from the attendance register

⁶ Using DHS 2015-16 definitions

1.4. Relevance and performance

Relevance and appropriateness of the interventions was assessed using a mix of quantitative and qualitative indicators.

Early Grade Reading Assessment (EGRA) - EGRA is a standardized test consisting of five sub-tasks that assess a child's phonemic awareness, letter sound knowledge, devised word identification, oral passage reading and reading comprehension. Children receive a test score between 0 and 100 for each subtask (higher is better). We also calculated fluency rates for sub-tasks 2, 3, and 4. We used the national benchmarks for sub-tasks 2, 3 and 5 to assess the proportion of students who met or exceed benchmarks for those sub-tasks. The EGRA was administered to 1200 (600 grade II and 600 grade IV) students from among the 1600 total students participating in the baseline study.

While no significant difference in overall EGRA scores was observed between the project (36.2) and comparison (37.3) school students, within the project schools, students in the continuing schools in FFE phase I (36.4) and phase II (38.8) scored higher than new schools added in FFE phase III (34.4) ($p < 0.05$, significant).

In grade II, 16.3% of the students in the comparison schools scored above the national benchmarks compared to 7.3% in the project schools ($p < 0.05$, significant, reference Table 11). No significant difference in the scores was observed between boys and girls in grade II. Similarly, no significant difference was observed in scores across continuing and newly added schools under the FFE programme.

In grade IV, students in the project district schools performed better with 25% scoring more than the national benchmark compared to 22% in the comparison district schools ($p > 0.05$, not significant). Boys in grade IV were observed to have performed better than girls, with 24.6% of boys scoring above national benchmark compared to 22.3% girls ($p > 0.05$, not significant). No significant difference was observed in scores across continuing and newly added schools under the FFE programme.

Student practices and behaviours – The percent of children receiving a Minimum Acceptable Diet (MAD) was calculated using standard methodology (FAO, 2010) for all 1600 students by probing the type of food and number of meals consumed by the student on the previous day. No significant differences were observed between students receiving a MAD between project (40.9%) and comparison (41.3%) district schools. However, students in FFE-I continuing and new FFE-III three schools received a MAD more often than students in schools continuing from FFE phase II ($p < 0.05$, significant). Interestingly, 63% of students whose parents have been Women Empowered (WE) group members reported consuming MAD compared to just 39.8% of other students whose parents had never been a WE member ($p < 0.05$, significant). Additionally, girls were more likely to eat more meals during the previous day than boys ($p < 0.05$, significant).

Students in project district schools had higher odds of eating lunch ($OR = 1.6$, $p < 0.05$, significant) than those in comparison schools; however, within the project schools, there were no significant differences between FFE continuing and newly added FFE III schools.

The overall median absence rate for all students was 8.8% and the absence rate due to illness was 2.9%. We found that 82.8% of students in project schools regularly attended school at least 80% of the time, compared with 81.1% in comparison schools ($p < 0.05$, significant). It was noted that students come to school more often on days when lunch is provided.

Socio-economic conditions among households – Although parents from project and comparison districts reported overall similar education (most received primary school) and literacy levels (over 75% can read/write), the share of wealthiest households is higher in the comparison district, according to the Demographic Health Survey (DHS, 2015-16). Still, 38.3% of project district households and 41.8% of

comparison households are either poor or among poorest according to wealth quintiles as defined by the Demographic Health Survey (DHS, 2015-16). Interestingly, however, households having a current/previous WE member were most often (70%) in the medium to wealthiest categories in the wealth index; only 8.3% of WE member households fell in the poorest category.

Involvement of parents in their child's school performance – Most parents report taking steps to check their child's performance at school; only 10% of project and 14% of comparison district parents reported not taking any steps to check their child's performance at school. Comparison district school parents were more likely to visit their child's school during the current academic year (51.8%, compared with 43.5% in project districts, $p<0.05$), and parents of boys were more likely to take steps and visit the school than parents of girls (49.8% versus 45.5%, respectively, $p<0.05$).

Overall, 84.3% of parents in the project districts and 89.8% of parents in the comparison district were willing to contribute to the school feeding programme; the difference was not statistically significant.

Gender balance in the student's household – Findings show several areas of gender imbalance, including attitudes towards domestic violence and the importance of education for boys and girls. Not only was it common for female respondents to believe a husband may be justified in hitting or beating his wife under certain circumstances, a notable proportion of women surveyed reported having been hit or beaten by their husbands in the past 6 months (18.2% and 17.5%, in project and comparison districts, respectively). About a third of respondents thought it is better to educate a boy than a girl, since boys become the potential bread earners for the family, and more than 25% said they believe girls are more effective at chores than going to school.

Attitudes were slightly better in project than comparison districts. Fewer women believed a husband is justified in hitting their wife (66.1% versus 73.9%, respectively, $p<0.05$), and in cases where the women has been a member of a WE group, the proportion who reported being hit or beaten by their husband in the previous six months fell significantly to 9.1%.

Qualitative interviews conducted with diverse groups found that respondents from both new and continuing project areas (men, women, boys and girls) indicated a positive perception towards the status of the intervention. The project allows extra time for both men and women to conduct other activities, especially on school meal days. The respondents also noted that trainings of health, sanitation and nutrition were important and effective. The school WASH components, especially toilets, were an added advantage for girls in general and during menstrual period.

Appropriateness of the intervention strategies - The interventions within the FFE III programme appropriately respond several critical issues affecting literacy level among school-going children. Bringing the community together to sustain the school feeding programme has been a challenge - in the absence of policy guidelines or mechanisms other than voluntary contributions, the participation of parents has been relatively low (only about 50% of parents contributing in project districts). Schools in the project district have better infrastructure with 50% of schools in project districts having a functional kitchen to cook meals compared to just 12% of the schools in the comparison district.

In this backdrop, the FFE III programme introduces a mixed model of providing school meals directly to the students thrice a week and creating links with farmer groups to support the programme at a community level. In addition to farmer groups, the FFE III programme will develop school gardens for students and teachers to grow food commodities and use as demonstration plots to train farmers on diversifying their crop production. This multi-staged strategy is aimed at creating sustainable and community driven mechanisms to support the school feeding mechanism, even after the exit of FFE III programme.

Health and hygiene related interventions, such as the building/repair of water stations and toilets, enable students to practice healthy and hygienic behaviours learned during trainings on health, hygiene and

nutrition that are provided to students and teachers as a part of the behaviour change communication approach.

The programme also plans to provide textbooks/study materials and non-study materials such as stationery to the primary school, and to train early grade teachers on innovative teaching methodologies to improve the quality of their instruction.

The overall gamut of interventions within the FFE III programme is strengthened by the involvement with and support of the national, regional, district and local government offices. At the department level, PCI works with the Department of Planning and Development; Community Development; Health; Education and Agriculture and Livestock and Fisheries to implement the interventions at the school level. As noted during qualitative interviews with the department officials, the FFE programme has engaged the local actors effectively and continues to do so.

PCI plays an important role in meeting my department's overall goal of improving education in the district. We look forward to supporting and working with PCI officials in this third phase of their project.

– District Education Officer, Musoma

1.5. Sustainability readiness

Sustainability of the programme effects critically depend on the overall school infrastructure and performance, early grade teaching methods used by teachers, strong head teacher leadership and participation by the community. All 100 schools (50 project and 50 comparison) were assessed on their performance on the above areas using PCI's Sustainability Readiness Checklist (Annexure 16 School Sustainability Readiness Assessment).

Teachers' environment and instruction - Within the project district schools, 75% of teachers in FFE phase I and 81.3% in FFE phase II schools reported being trained by PCI, and 52% were certified upon successful completion of the training. A good proportion (19%) have also received non-monetary benefits in recognition of their work, compared with only 1% of comparison school teachers.

Almost all teachers (96%) across project and comparison district schools reported having a scheduled time for teaching reading in their classes. Choral reading, guided reading and out-loud reading are the main teaching methods adopted for teaching reading. To help low-performing students, teachers reported using methods such as partnering them with better performing students, allowing more time and/or giving more exercises.

Overall classroom teaching performance was determined by an aggregate lesson score computed as an average of the following: teaching and assessment methods used, classroom organization, instructional content used by the teacher, and teacher-led classroom activities. No significant differences were found in the mean aggregate lesson score between project and comparison school teachers, but teachers from FFE I and FFE II continuing schools had overall higher lesson scores than those from FFE phase III schools (68.8, 73.9, and 63.5, respectively, $p < 0.05$). There was no significant difference observed in the mean lesson scores between male and female teachers.

During instruction, teachers tended to put more emphasis on identification of the differences and similarities of letter sound. Printed materials were more often found in comparison district school than project schools (50% and 34% respectively), and fewer teachers in project districts were observed reading a full story (24% and 40%, respectively).

School infrastructure – Infrastructure, such as having functioning libraries, gardens, kitchen and latrines, was better in continuing FFE I and FFE II schools than in new FFE III schools and comparison schools.

For example, project area schools were more likely to have a school garden on premises than comparison schools (46% versus 20%, respectively), and continuing phase I and phase II schools were more likely to have garden than the new phase III schools. Similarly, 62.5% of continuing FFE II schools and 53.8% of continuing FFE I schools had a reading/room/library, compared with just 18.8% of new FFE III schools and 22% in the comparison district. Similar trend were observed for kitchens, latrines, and handwashing stations. The most common vegetables grown in the school gardens were; spinach, cassava, egg-plant, okra and maize.

About 50% of project schools had a kitchen on premises (compared with just 12% in comparison district), most of which were constructed in under FFE phase I. In general, about half had stock of food items meant for preparing school meals.

In project districts, 48% of the schools had handwashing stations, compared to 14% of the schools in the comparison district. Also, 83% of the handwashing stations in project district schools had water and 20.8% of them had soaps for handwashing. In comparison district schools, 71.4% of handwashing stations had water and 42.9% had soaps for handwashing. Most notably, with the project districts, only 12.5% of the schools added in FFE phase III had handwashing stations, compared to 61.5% in phase I and 62.5% in phase II.

School sustainability readiness - Teachers in the project district schools were more active in ensuring that the school surroundings such as the kitchen, storeroom and toilets were clean compared to the comparison district schools. In 62% of the project district schools, the head teacher/store teachers/store assistants consistently and accurately recorded school meals, attendance rates, enrollment figures and food stock to ensure proper management of school feeding. However, there was a notable and significant difference between continuing and new schools, as only 12.5% of teachers/store teachers and assistants in FFE III schools consistently record school meals/attendance rates/enrollment figures etc., compared to 84.5% of phase I and 100% of phase II schools.

Parent Teacher Partnerships (PTPs) and/or School Feeding (SF) committees are active in continuing schools, but performance is not consistent. Only 30% of project school PTPs and school WASH sub-committees (all in FFE I and II schools) reported they ensure safe and clean water use for cooking and drinking, and maintain and manage school latrines and water tanks/shells. PTPs and/or SF committees handle food management in 38% of project schools (12.5% and 50%, in FFE III and continuing schools, respectively)

Local government participation - To ensure government involvement and support to ensure long-term sustainability, PCI works with the national, regional, district and local government offices, within the Departments of Planning and Development, Community Development, Health, Education and Agriculture, and Livestock and Fisheries to implement the interventions at the school level.

In addition to regular progress updates, district and regional focal persons have been trained in several areas such as monitoring of the programme, innovative teaching methods, implementation planning and strategy, etc. Ward officials such as Ward Community Development Officer were engaged by PCI to support the WE group formation and registration, and Ward Education Coordinators support PCI in coordinating the training of teachers and school feeding programmes.

The state actors/government supports the school feeding programme by providing tax exemptions on the import of food commodities by PCI and by providing administrative support for the smooth distribution and monitoring of the commodities.

Community participation - During FFE phase II, school lunches were provided to students thrice a week that consisted of rice, beans and oil. PCI delivered the food to the school head teacher and school feeding committee for monitoring and preparation of school meals. For the remaining weekdays, the

school committee and community members were encouraged to contribute in cash or kind (food commodities). FFE phase III will follow the same setup.

In terms of community support, the response has been moderate. Only 10% of all the parents interviewed reported providing any commodity to the school in the last 6 months, however, 41.6% of parents reported contributing money towards school expenses such as guard/cook fees in the last 6 months.

1.6. Recommendations

The following are recommendations to consider during implementation of FFE III:

Sustain school meals: the level of community engagement be closely monitored to assess whether the community contributions for school feeding programme increase. Community leaders can be taken on study tours to neighbouring districts to learn from successful school meal programmes. Increasing the use of school gardens and demonstration plots for agricultural production by providing start-up seed kits, training/ technical support and linking with agriculture extension officer can also support school meals.

Support/ sustain school infrastructure: rebuilding/ constructing toilets also be followed by monitoring their actual usage and maintenance. The SWASH programme committees can lead monitoring and maintenance on indicators such as the number of times toilets are cleaned every day, whether girls/boys or both are in-charge of cleaning toilets, whether water is available in the toilets during school hours in all school days, etc.

Focus on teacher training: the FFE programme should respond to the critical need to train and mentor teachers resulting from increasing enrollments to ensure high quality literary instruction, such as partnering with like-minded organizations such as Right To Play to provide a training of trainers for innovative teaching methodologies. Similar partnerships with state and non-state actors can be further scaled up to support teacher training programmes.

Scale up WE groups: although the effect of WE group membership on household income and resilience, and student literacy outcomes is not clear yet, there is shown potential for improving socio-economic status and reducing existing gender disparities of its women members and their families.

Sustain engagements with local government officials: the partnership and engagement with national, regional, district, ward and village level officials be sustained for phase III of the FFE programme. Having focal persons at each level is an appropriate strategy for liaising with different departments.

Reflect on programme sustainability: at a macro perspective, the study team recommends PCI to reflect on the dialogue of sustainability within all components of the FFE programme with improving government and community engagement as a key focus area for phase III of the FFE programme. Increasing community outreach and behaviour change communication can be targeted to improve community participation with the overall objective of long term programme sustainability.

2. Introduction

2.1. Background on the FFE III programme

The McGovern-Dole Food for Education (FFE) programme implemented by Project Concern International (PCI) has been operating in the Mara region since 2010. The programme has been implemented in two phases between 2010 – 2016 (FFE I and II) and targets literacy outcomes among students in primary schools in the districts of Musoma Rural, Bunda and Butiama. The programme has entered its third phase and aims to deliver a high quality, sustainable programme to improve literacy among school-aged children. The third phase is scheduled for implementation between 2016 – 2021, during which PCI will focus on strengthening programme stakeholder's capacity to sustain FFE programme achievements in a total of 231 primary schools in the districts of Musoma Rural, Bunda and Butiama.

Based on lessons learned from the previous phases and a clear understanding of international and national donor and government involvement in targeted communities, PCI's programme is focused on achieving desired results under three key intermediate results namely; *Improved Quality of Literacy Instruction*, *Improved Attentiveness* and *Improved Student Attendance*. Over the 5-year lifespan of the project, PCI will focus on achieving the following objectives:

- Improve literacy instruction quality by promoting teacher attendance, providing teacher recognition and school supplies, establishing mini-libraries and classroom reading corners, distributing reading materials and training teachers and school administrators;
- Improve attentiveness and reduce short term hunger by providing school meals and increasing farmer agricultural productivity and production, in turn contributing to locally-owned and sustained school feeding programs;
- Improve student attendance by forming savings and lending groups that provide financial stability to keep children in school, provide training on better health and nutrition practices to decrease health related absences, increasing community understanding on the benefits of education, and promoting parent engagement of children's education through Education Cascade Groups (ECGs);
- Improve knowledge of health and hygiene practices by expanding school health education programs including the Zinduka methodology, the Volunteer Student Aid (VSA) program, and menstrual hygiene management interventions (e.g., Huru), as well as reaching the community through ECGs;
- Increase knowledge of safe food preparation and storage practices by training relevant stakeholders, and increasing access to food preparation and storage tools and equipment through commodity distributions;
- Increase nutrition knowledge by promoting the importance of nutrition and nutritious meal planning using Zinduka methodology and ECGs;

In line with the overall monitoring and evaluation plan for the FFE III programme, PCI Tanzania engaged Sambodhi Tanzania to conduct the baseline assessment and assess the present status of the programme objectives.

2.2. Key components of the FFE III programme

The FFE programme consists of a bundle of interventions with the overall aim of increasing the literacy of school-age children in primary schools. Based on a review of project documents (PCI, 2014), the key interventions for the FFE programme has been presented as follows (See Annexure 1 for causal pathways).

Building/rehabilitation of toilet facilities - PCI works with communities to construct new toilets at schools prioritized by the district government to improve access to sanitation facilities and reduce the ratio of students to toilets. Special attention is given to girls' privacy needs. SWASH (School Water, Sanitation and Hygiene) committees and district officials work together using national SWASH committee guidelines to improve toilet facilities.

Provide school meals - PCI provides cooked rations to students, VSAs, teachers, cooks and storeroom guards in all intervention schools. The ration consists of a mid-morning snack of blended porridge composed of sorghum and oil and a mid-day meal composed of rice, beans and oil. PCI provides the mid-morning meal snack daily to all the intervention schools while the mid-day meal is provided two days per week. PCI also works towards building School Feeding Committees (SF) at participating schools to manage the school's day to day feeding operations.

Training of teachers - PCI supports the roll out of In-Service Training (INSET) programme by the Ministry of Education Science and Technology (MoEST). PCI implements the training programme in the INSET modules for mathematics, English and pedagogical methodologies. To encourage horizontal learning, PCI assists district and ward education officials to organize school "clusters" based on the MoEST's guidelines and make optimal use of the Teacher Resource Centres in district and ward government centres to create inter-school experience sharing and mutual support.

Building/rehabilitation of wells and water stations/systems - PCI works with district officials to improve access to water facilities in schools, including improved water systems and installing simple hand washing stations. PCI works closely with district engineers and technicians to conduct an assessment to identify suitable and cost-efficient technological options for safe water at each school, considering the environmental conditions of each school.

Developing partnerships with farmer groups to supply food to schools - PCI works with district officials and ward agricultural extension officers to establish new farmer groups or link with existing farmer groups. PCI agricultural staff work with local farmers to assess their production capacities and discuss constraints to increasing production. PCI works with the farmer groups to develop action plans to mobilize the groups to contribute a percentage of their annual production to supplement the school rations provided by PCI. From Phase III of the FFE programme, PCI will also provide start-up seed kits to farmer groups.

Distribution of school supplies and materials - PCI works with district officials and school committees to provide critical school supplies, materials and teaching aids, such as calendars, maps, flash cards, posters, blackboards, flipcharts, paper, scissors and calculators.

Establishing libraries - PCI works with school committees to create simple reading rooms or mini libraries in the schools where children can access reading materials.

Establishing school gardens - PCI supports the construction of school gardens, provided that the community is willing to dedicate land for the garden and commit to the related training, demonstration and maintenance activities. PCI assists in formalizing the linkages between school committees and ward agricultural extension officers for on-going technical assistance to all project schools with school gardens. PCI uses the school gardens as a learning and demonstration site to promote improved agricultural techniques. Crops (maize, rice) and vegetables (okra egg plant) harvested from the school gardens are used to enhance the school meals by adding important micro-nutrients to the students' diets.

Forming savings and lending groups - PCI works with the district community development department and village social welfare committees to form savings- groups called the WE groups. The groups meet regularly to learn how to become micro-entrepreneurs, contribute weekly savings, take loans from the group's combined savings and discuss family and community issues.

Production of books and supplementary reading materials - PCI increases the supply of age-appropriate reading materials in the participating schools by building local capacity to develop, organize and manage a range of Kiswahili language storybooks. PCI provides training of trainers' course on the preparation of stories for teacher to train college staff and district and ward education officers.

Provision of energy saving stoves - To enable on-site meal preparation, PCI works with village authorities and school committees to construct an ecological stove in each project school. PCI also raises awareness among school committee and school feeding committee members about the benefits of using fuel-efficient stoves.

Raising awareness on the importance of education - PCI provides training to community leaders, parents and teachers on children's rights and child protection; PCI mobilizes child protection committees to raise awareness about harmful norms and practices that promote early marriage, pregnancy and school drop-outs among older girls and to link those affected with appropriate health and social welfare services. The Journey of Life (JOL) methodology has been an active approach in awareness raising exercise.

Training on food preparation and storage practices - PCI provides training at the district, ward, village and school level with a focus on food preparation and storage practices. The areas covered in the training are proper commodity management and hygiene to prevent commodity loss or damage and nutritious meal preparation to ensure the distribution of high quality meals. PCI uses its "Guide for School Feeding Committees" to train beneficiaries regarding the role and responsibility of a school feeding committee, commodity receipt, proper storage and handling, food preparation, distribution, handling of damaged or lost commodities, record keeping and reporting.

Training on good health and nutrition practices - PCI works with the district health officials to develop a clear action plan for improving school health. This plan is implemented in each of the project schools by the designated health teacher, in collaboration with ward education coordinators, ward health extension workers and health personnel from local health facilities. PCI promotes essential health messages through child-friendly approaches by strengthening school health clubs in existing schools and establishing health clubs in schools that don't already have one. The health messages focus on HIV/AIDS education, life skills and sanitation and hygiene promotion. Special attention is given to the needs of adolescent girls, specifically to reduce absenteeism due to menstruation by providing sanitary pads ("Huru kits") and education on sexual and reproductive health.

Training of school administrators - PCI works with district and ward education officials to build the capacity of school administrators, including strengthening administrator's leadership and organization skills; administrator's management of school financial resources; school assets and libraries; supervision and evaluation of teachers; implementation of methods to reduce teacher absenteeism; and management of difficult situations such as those involving extremely vulnerable children and child protection issues.

Forming Education Cascade Groups (ECGs) - In addition to the above interventions, the third phase of FFE programme introduces the formation of ECGs. In its third phase, PCI aims to bring together families in a community to form ECGs that shall act as early childhood learning centres for children before entering pre-primary school. ECGs will play a critical role in strengthening the school readiness of children.

3. Baseline Study Methodology

PCI engaged Sambodhi Tanzania to conduct a robust baseline study that serves as the first component of a larger programmatic evaluation plan that will also include mid-line and end-line assessment. The baseline study methodology measures key indicators before the intervention is rolled out and provides insights regarding differences across schools, students, teachers and parents.

The baseline methodology follows that as outlined in the USDA-approved Evaluation and the Terms of Reference, and is detailed further in Annexure 2 – Overview of the FFE III programme evaluation plan. The baseline study uses a quasi-experimental design and difference-in-difference Propensity Score Matching (DID-PSM) methodology with two arms: project and comparison.

The project arm consists of schools, students and parents in the Musoma Rural, Bunda and Butiama project districts, and is further divided into continuing FFE I, continuing FFE II and new FFE III project schools. The comparison arm consists of schools, students and parents in the Serengeti district. An *a-priori* matching was conducted to understand similarities between project and other districts in Mara region. Furthermore, Serengeti has been the comparison district for two previous evaluations, and the study team, in consultation with the PCI team, selected Serengeti as the comparison district for the third phase of the programme as well, and the final list of sampled schools is provided in Annexure 3.

The sample size and respondent groups for the baseline study were based on the Terms of Reference and discussions with PCI. The sample calculation was done using the two-sample formula using *power* module in Stata 13.0 and sample sizes for each of the respondent groups is shown in Table 2 below.

Table 2: Quantitative sample sizes for respondents

Sl. No.	Respondent Group/ Unit	Total Sample	Project Sample	Comparison Sample
1	Primary schools	100	50	50
2	Students in grade II	600	300	300
3	Students in grade IV	600	300	300
4	Students in grade VI	200	100	100
5	Students in grade VII	200	100	100
6	Parents of the students	800	400	400
7	Head teachers of the primary school	100	50	50
8	Teachers of the primary school	100	50	50
9	Classroom observations in the primary school	100	50	50
10	School infrastructure observations in the primary school	100	50	50
11	School sustainability and readiness assessment	100	50	50

In addition to the quantitative sample, qualitative samples complement and support the baseline findings through KIIs and FGDs (Table 3):

Table 3: Qualitative sample size for respondents

Sl. No.	Respondent Group/ Unit	Total Sample	Project Sample	Comparison Sample
1	Students in grade VI/VII	20	10	10
2	Parent groups	10	5	5
3	Women Empowered groups	5	5	-
4	Farmer groups	5	5	-
5	Head teachers	10	5	5
6	Local government representatives	10	5	5
7	PCI officials	6	6	-
8	District Focal Person	3	3	-
9	District Education Officer	4	3	1

The baseline assessment conducted by Sambodhi followed several quality assurance and ethical protocols before and during data collection. The study team also coordinated and collaborated with government and PCI officials to collect information, and adhered to the Government of Tanzania guidelines and study requirements while hiring consultants and field team, and obtaining ethical approval for the study.

4. Limitations and Considerations

As most studies, the present baseline study presents certain limitations due to design or logistical challenges, as follows:

1. The study team could not conduct the scheduled interviews with officials from the Ministry due to their unavailability.
2. The sample size for the study is adequately powered to provide significant results at the overall project and comparison level. However, the sample is not powerful enough to provide robust estimates at a district or FFE phase level. This aspect of the sample size should be considered while interpreting the results.

The EGRA tool demonstrates a high internal validity of >0.80 (Cronbach alpha). Interestingly, the sound recognition sub-task seems to be decreasing internal consistency of instrument, (Cronbach alpha decreases from 0.86 to 0.84 with the addition of the sound recognition sub-task). A Principal Component Analysis also reveals that the sound recognition sub-task is in a different dimension compared to the overall instrument. It is possible since this sub-task is also implemented differently compared to other sub-tasks, with the enumerator/surveyor reading out the words for the child as opposed to the child reading the letters or text and making sounds and words on their own. For this analysis, we have not excluded the sound recognition from the overall composite EGRA score.

5. Review of Literature

5.1. Profile of Mara region

Mara is one of the 25 regions in Tanzania Mainland and is the focus region for the FFE programme. The total population of Mara Region is 1,743,830 with 51.8% female and 48.2% male. The average annual population growth is 2.5%, and Mara comprises of approximately 3.5% of Tanzania Mainland's population. Like the national demographic profile, more than 50% of Mara's population is less than 17 years of age. The adult literacy rate (15 years and above) in the Mara Region is 80.7%, higher than the Tanzanian national average of 67.8%⁷ (UNICEF, n.d.). The average rate of employment in Mara Region stands at 60% (population aged 10 years and above).

Per 2015 data, the Mara Region contained 761 registered primary schools (NECTA, n.d.). According to the 2015 data on Primary School Leaving Examination (PSLE), 42,039 students appeared for the PSLE in Mara region, the fourth largest amount in all regions of the Tanzania Mainland. Further, 62.23% of students passed the PSLEs and the region was ranked 14th in Tanzania Mainland. On average, a student in Mara region scored 117.95.

The number of students passing the PSLE has increased in the region in recent years. The average passing percentage of students in PSLE examinations increased from 39.29% in 2013 to 43.49% in 2014 and 62.23% in the year 2015. Mara, as a region has improved its overall rank from 18th (2013) to 14th (2015) out of the 25 regions in Tanzania Mainland.

⁷ https://www.unicef.org/infobycountry/tanzania_statistics.html

The region consists of 9 districts; Bunda, Musoma Municipal, Serengeti, Bunda Municipal, Musoma Rural, Tarime, Butiama, Rorya and Tarime Municipal. Tarime is the most populous region (19.5% of the region's population) followed by Bunda (19.2% of the region's population). The districts of Musoma Rural and Musoma Municipal recorded the highest adult literacy rate; 82.2% and 86.6% respectively (NBS, 2016). The lowest literacy rate is in Serengeti district at 66.3% in 2012. The district of Musoma Rural has the highest rate of employment rate at 67.1%.

Based on the PSLE results for 2015, the district of Musoma Municipal recorded the highest passing percentage of students (80.6%). Musoma Rural recorded 46.8%, Bunda 59.5%, Butiama 57.0% and Serengeti 65.8%. Musoma Rural recorded had the lowest number of passing students for the 2015 PSLE.

The Census 2012 data reports that 70.9% of Mara Region's population is engaged in farming/agriculture while plant machine operators and assemblers constitute the lowest proportion at 0.4%. The percentage of people engaged in farming is similar for the districts of Musoma Rural (74.4%), Bunda (68.3%), Butiama (74.7%) and Serengeti (72.3%). Given its geographical location, Musoma Rural also reports the highest number of households engaged in fishing/hunting (6.3%) compared to other districts.

Only 30.2% of the region's households has access to improved sources of drinking water while 24.3% have access to an improved toilet facility. Firewood was the main source of energy for cooking (78.5%) while kerosene (wick lamps) was the main source of lighting in households (NBS, 2016).

5.2. Education policy in Tanzania

The education policy in Tanzania is driven by measures in the current constitution of the United Republic of Tanzania (URT). Part II, Section 11 of the constitution describes the fundamental tenets of the *right to work, to educational and other pursuits*. As a part of the Fundamental Objectives of the State and Directive Principles of the State Policy, *"every person has the right to access to education and every citizen shall be free to pursue education and technique"* (3) (URT, Constitution of the United Republic of Tanzania, 1997).

The first education policy of the URT was established in 1967 with the introduction of Education for Self-Reliance. The Education for Self-Reliance policy emphasized the need for curriculum reform to integrate theory with the acquisition of practical life skills. Subsequently, the recent education policy (URT, 2014), makes primary education universal and compulsory to all children from age of 7 until they complete the stated cycle of education. Tanzania has also implemented a free education policy for primary and secondary education.

The education policy also provides greater focus on girls and women in education. The policy states that *"(the) government shall establish special educational financial support schemes for girls and women in education and training institutions"*. Additionally, *"education and school systems shall eliminate gender stereotyping through curricula, textbooks and classroom practices."*

The policy also focused on providing school meals to students. The policy recognizes the strong link between school feeding and improving learning outcomes of a student, thus the policy states that the *"government shall promote school and college feeding and health programmes"*. Under this policy, the government also aims to establish infrastructure and facilities for primary schools such as desks, educational equipment, libraries and instructional materials necessary for the effective delivery and acquisition of high quality education.

However, despite the overarching goals of the education policy and legislative framework, there have been several key issues regarding the actual implementation of the policy. The rapid increase in enrollment in primary and secondary education after the announcement of *free education* (RTE, 2016), also led to an increase in government expenditure on education. Findings from the Public Expenditure

Tracking Survey (PETS) reports that the education budget allocated to secondary education has fluctuated, with the year 2008/09 recording a sharp fall in allocation per student to 135,000 TZS, from 281,000 TZS in 2005/06. For the financial year of 2008/09, the total amount of funds released for secondary education was 92% compared to 87% for primary education. However, only 56% of the budgeted amount for teaching materials was released in that financial year, hinting at a shortage of teaching materials (UWAZI, 2010).

In terms of school feeding programmes, only 34.2% of schools in 2010 were providing school meals across the country. The GoT has actively sought to sensitize and engage parents and other stakeholders to contribute resources to ensure the sustainable provision of meals to children at school to promote attendance and student retention (MoEVT, 2014). However, based on the study team's interactions with district officials, there is a lack of adequate planning and financing of the school feeding programme. Dependence on the community and parents to contribute to school feeding varies widely across districts and regions.

5.3. Review of FFE programme interventions in secondary literature

The FFE III programme aims to strengthen public education delivery systems by supporting existing legislations and introducing innovative methodologies with the overall objective to improve learning outcomes among student in primary education. A desk review of the secondary literature on similar interventions was done to understand the efficacy of such interventions in diverse geographical contexts.

The FFE III programme, among other interventions, contributes to the school feeding mechanism in primary school. Systematic reviews and secondary literature report that school feeding programmes have led to an increase in cognitive, health and nutrition outcomes among students (Lawson, 2012). Pre-school and school feeding also have some impact on weight gain and improvement in several psychosocial outcomes, including attendance, psychomotor development and math performance (Kristjansson & Gelli, 2016). Although school feeding interventions have had a positive impact on cognitive, health and nutritional outcomes, its effect on school completion was not significant (Snilstveit, et al., 2015).

The FFE III programme aims to supplement the school feeding mechanism in the project schools while sensitizing community members to contribute as well. In addition to sensitization, FFE III also plans to improve the income generating capacity of community members by forming WE groups for lending/saving and farmer groups to provide improved agriculture techniques/technology. A review of secondary literature is supportive of this intervention as systematic reviews report that *user fee reduction* and *cash transfer* programmes have a positive impact on students' education outcomes (Snilstveit, et al., 2015).

Similarly, interventions such as the construction of new schools and infrastructure have positive effects on enrollment and student attendance. Teacher's incentive programmes also report positive effects on student's performance in composite scores and teacher's attendance. However, there are less discernible effects on student attendance, enrollment and completion. Similarly, school based management programmes have a positive effect teacher attendance, but less significant effects on student's enrollment, and dropout rates (Snilstveit, et al., 2015).

To conclude, the overall gamut of interventions under FFE III programmes are well placed toward responding to the needs of primary education and has the potential to contribute to the government's overall goal of increased literacy. This baseline report aims to provide a pre-intervention picture of the primary schools, which will allow for measurements of change over time between the project and comparison groups from a comparable starting point.

6. Baseline Findings

6.1. Early Grade Reading Assessment results

EGRA was administered to a total of 1,200 students selected randomly across 100 schools: 50 from project districts (including students at continuing FFE I and FFE II schools, and at new FFE III schools) and 50 from the comparison district. The students were selected from grade II (n=600) and grade IV (n=600) and the sample split equally by gender.

Table 4: Distribution of students taking EGRA

Study Arm	Grade II		Grade IV	
	Boys (N)	Girls (N)	Boys (N)	Girls (N)
Project FFE I	78	78	78	78
Project FFE II	24	24	24	24
Project FFE III	48	48	48	48
Project Area Total	150	150	150	150
Comparison Area Total	150	150	150	150

A full background on EGRA, including explanation for scoring and a detailed description of the tasks and the skills assessed for each is provided in Annexure 4. In summary, the EGRA instrument consists of five key sub-tasks designed to assess foundational reading skills crucial to being a fluent reader:

- o **Task 1 – Phonemic Awareness:** The student was asked listen to a set of words and identify which word began with a different sound.
- o **Task 2 – Letter Sound Knowledge:** The student was given a page of letters from the Kiswahili alphabets and asked to identify the sounds (not the names) of as many letters as possible in 60 seconds.
- o **Task 3 – Devised Word Identification:** The student was given a page of made-up words and asked to read as many as possible in 60 seconds.
- o **Task 4 – Oral Passage Reading:** The student was given a short reading passage and asked to read as much of it as possible in 60 seconds.
- o **Task 5 – Reading Comprehension:** The student was asked five reading comprehension questions relevant to the passage read.

Both mean and percentage statistics were used to comment on the EGRA scores. The indicator on student literacy level, reading and understanding grade level text, was computed as a percentage of students using the standards for Reading Comprehension (sub-task 5) set by GoT⁸. Mean EGRA scores were calculated for each sub task and overall as the total correct responses/total number of questions and multiplied by 100. For the timed sub-tasks, fluency rates were calculated as the number of correct letters per minute (see Annexure 5 – EGRA analysis for more details on this standard calculation) and those results are presented in their representative sub-sections below.

The mean scores for grade IV students (across both project and comparison schools) were better than grade II students across all five sub-tasks for phonemic awareness ($p<0.05$, significant), letter sound knowledge ($p<0.05$, significant), devised word identification ($p<0.05$, significant), oral passage reading ($p<0.05$, significant) and reading comprehension ($p<0.05$, significant). No significant differences in EGRA scores were observed between project/comparison districts or within FFE phases (I/II/III). The EGRA sub-task scores were disaggregated by grade and gender, and the results are shown in Tables 5-6 below.

⁸ 80% or more questions answered in the reading comprehension section

Table 5: Mean EGRA scores* disaggregated by study group

EGRA Tests	Comparison								Project							
	Grade II				Grade IV				Grade II				Grade IV			
	Boy		Girl		Boy		Girl		Boy		Girl		Boy		Girl	
	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
Phonemic awareness	44.0	150	41.6	150	44.6	150	46.4	150	40.2	150	39.1	150	50.7	150	48.3	150
Letter sound knowledge	19.3	150	18.6	150	19.2	150	17.4	150	13.5	150	17.6	150	22.6	150	21.7	150
Devised word identification	29.1	150	31.4	150	34.2	150	30.9	150	17.2	150	24.4	150	43.4	150	38.2	150
Oral passage reading	50.5	150	49.5	150	55.1	150	52.1	150	33.9	150	43.3	150	61.4	150	63.1	150
Reading comprehension	39.6	150	37.0	150	45.2	150	38.6	150	23.4	150	29.0	150	46.4	150	45.6	150
Overall EGRA	36.5	150	35.6	150	39.6	150	37.1	150	25.6	150	30.7	150	44.9	150	43.4	150

*computed and reported as percentage: (total correct responses/total number of questions) x 100

Table 6: Mean EGRA scores* across project schools, disaggregated by FFE phases

11	FFE I								FFE II								FFE III							
	Grade II				Grade IV				Grade II				Grade IV				Grade II				Grade IV			
	Boy		Girl		Boy		Girl		Boy		Girl		Boy		Girl		Boy		Girl		Boy		Girl	
	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
Phonemic awareness	38.2	78	39.9	78	48.1	78	48.3	78	43.8	24	38.3	24	58.8	24	47.5	24	41.7	48	38.3	48	51.0	48	48.8	48
Letter sound knowledge	14.3	78	18.0	78	22.2	78	21.5	78	16.0	24	24.3	24	21.0	24	19.1	24	11.2	48	13.6	48	24.2	48	23.5	48
Devised word identification	18.0	78	26.7	78	39.9	78	39.6	78	18.8	24	27.8	24	56.3	24	30.3	24	15.3	48	19.2	48	42.7	48	39.9	48
Oral passage reading	35.0	78	47.8	78	57.4	78	67.7	78	43.9	24	51.2	24	69.7	24	51.6	24	27.1	48	32.1	48	63.8	48	61.5	48
Reading comprehension	23.8	78	31.0	78	42.6	78	49.2	78	30.8	24	31.7	24	55.0	24	40.8	24	19.2	48	24.6	48	48.3	48	42.1	48
Overall EGRA	25.9	78	32.7	78	42.0	78	45.3	78	30.6	24	34.7	24	52.1	24	37.9	24	22.9	48	25.6	48	46.0	48	43.1	48

* computed and reported as percentage: (total correct responses/total number of questions) x 100

6.2. EGRA: Sub-task 1 – Phonetic Awareness

The mean scores for sub-task 1 were similar across project (44.6) and comparison district schools (44.1). No significant differences were observed in the mean scores for phonemic awareness sub-task were found between students in schools continuing from FFE I and II, and the schools added newly under FFE phase III, or between project area students with WE or non-WE member parents. A detailed presentation of those scores are provided in Annexure 5 – EGRA Analysis.

Figure 1 below depicts the correct student responses for phonemic awareness sub-task. Most students across both project and comparison schools answered correctly until the fourth, fifth and sixth questions. Subsequently the frequency of correct responses dropped.

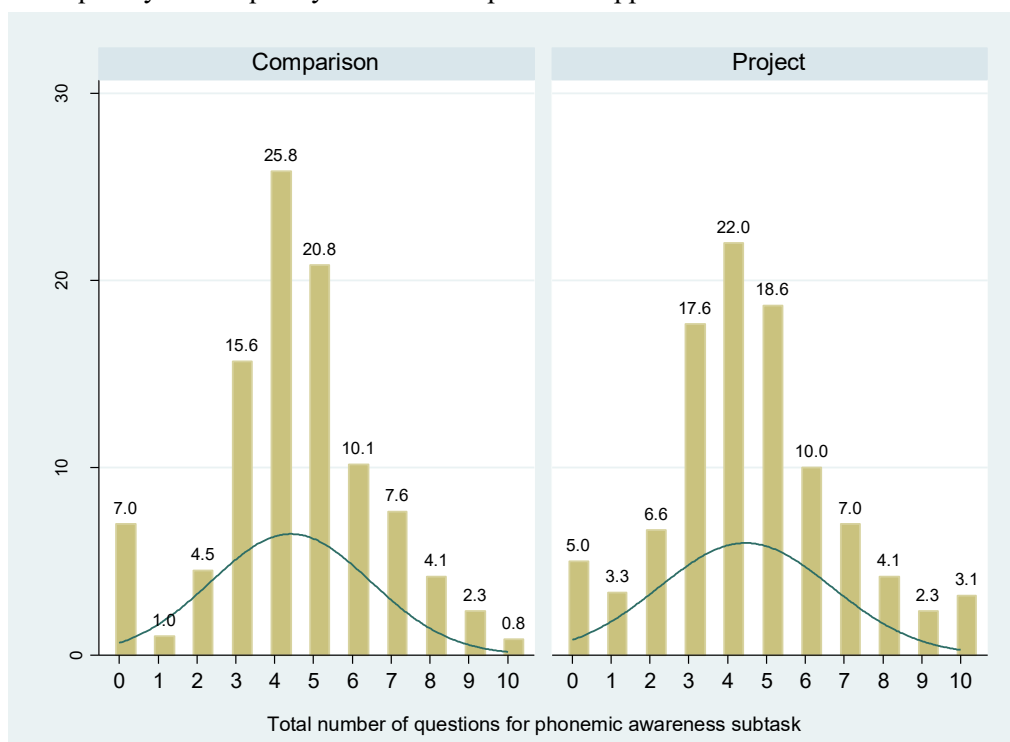


Figure 1: Plot for EGRA sub-task 1 scores

The assessment is stopped if the student is not able to identify any of the different words within the first five sets, and a “zero score” is recorded. Although in grade II, more students scored zero (9% in comparison, 5.7% project) than in grade IV (5% comparison, 4.3% project), no significant differences were observed in zero scores between boys and girls across project and comparison districts. Similarly, no significant differences were observed in zero scores across continuing and new FFE schools.

6.3. EGRA Sub-Task 2 – Letter Sound Knowledge

Sub-task 2 was a timed assessment where students are provided 60 seconds to complete the assignment, with the final unit of measurement the number of correct letters per minute (e.g. fluency rate, see Annexure 5 – EGRA analysis for more details on this standard calculation).

Students in grade IV had higher fluency rate compared with grade II students (diff. 2.9, $p < 0.05$, significant), which is expected, but no significant differences were observed in overall fluency rate between girls and boys, but when comparing across project area FFE phases, students in the newly added schools under FFE were less fluent (18.12) than continuing schools under FFE I (19.44) and FFE II (20.11; Table 7, $p < 0.05$, significant).

Table 7: Fluency rates for EGRA sub-task 2: letter sound knowledge

Grade*	Sex	Comparison		Project		FFE I		FFE II		FFE III	
		Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
Grade II	Boy	19.4	150	14.5	150	15.7	78	16.0	24	11.7	48
	Girl	18.8	150	18.9	150	19.4	78	24.3	24	15.2	48
	Total	19.1	300	16.7	300	17.5	156	20.1	48	13.4	96
Grade IV	Boy	19.7	150	22.9	150	22.6	78	21.1	24	24.2	48
	Girl	17.6	150	22.3	150	22.6	78	19.1	24	23.5	48
	Total	18.6	300	22.6	300	22.6	156	20.1	48	23.8	96

Most students could correctly give the sound of the letter for the first 10 words (Figure 2 below). No significant differences were observed between male and female students across project and comparison districts.

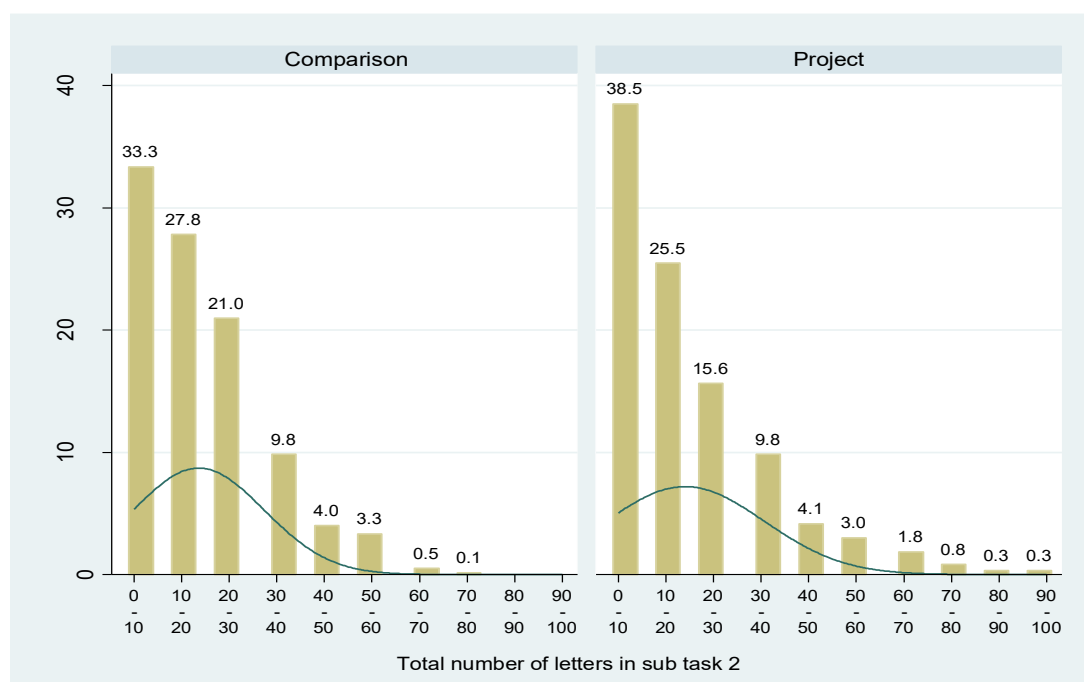


Figure 2: Plot for sub task 2 on letter sound knowledge

A student scored a zero if they were not able to identify the correct sound of the letter within the first 10 letters. Interestingly, despite overall better scores among grade IV students, in the comparison district, grade IV students scored more zeros than those in grade II. Overall, students in the project district schools had fewer zero scores than students in the comparison district schools ($p < 0.05$). Students in continuing FFE I and II schools scored fewer zeros than students in the new FFE III schools under ($p < 0.05$, significant). No significant differences were observed in the zero scores between boys and girls across project and comparison districts, or students across WE member households and non-member households. The detailed scores are provided in Annexure 5 – EGRA Analysis.

6.4. EGRA Sub-Task 3 – Devised Word Identification

Sub-task 3 is a timed assessment where students are given 60 seconds to complete the assignment, with the final unit of measurement of words read per minute (e.g. fluency rate, see Annexure 5 – EGRA analysis for more details on this standard calculation).

Grade IV students scored higher than grade II students (difference of 2.9, $p < 0.05$, significant), and students from continuing FFE schools scored better than those from new FFE III schools ($p < 0.05$, significant), as expected; however, no other significant differences were observed in fluency rates

between project and comparison district schools, between continuing and new schools, between boys and girls, or among students from households with WE members and those whose parents had not. The detailed scores have been presented in Annexure 5 – EGRA Analysis.

Table 8: Fluency rates for sub-task 3: devised word identification

Grade	Sex	Comparison		Project		FFE I		FFE II		FFE III	
		Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
Grade II	Boy	14.6	150	8.6	150	9.0	78	9.4	24	7.6	48
	Girl	15.7	150	12.7	150	13.3	78	14.4	24	10.8	48
	Total	15.2	300	10.7	300	11.2	156	11.9	48	9.2	96
Grade IV	Boy	17.1	150	22.3	150	21.0	78	28.2	24	21.4	48
	Girl	15.5	150	19.4	150	19.8	78	16.8	24	20.0	48
	Total	16.3	300	20.8	300	20.4	156	22.5	48	20.7	96

During testing, most students could cover the first five sets of devised words, but thereafter the number of students who could correctly answer the other words declined rapidly (Figure 3).

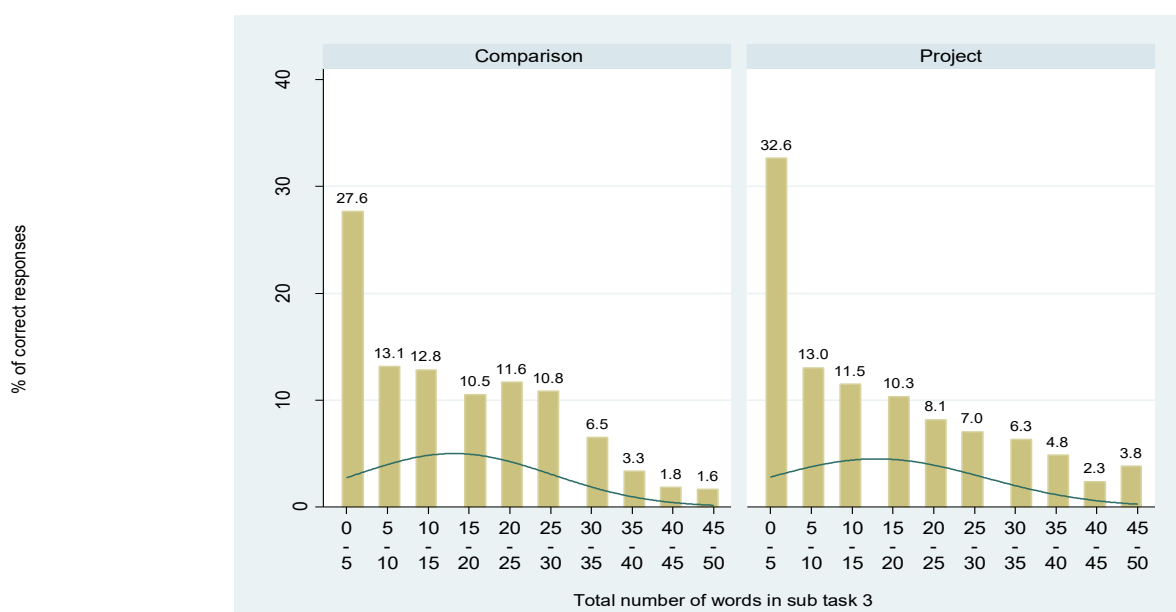


Figure 3: Plot for sub-task 3 on devised word identification

As in sub-task 2, the student is given a *zero* score if they are unable to devise any of the first five words in the task. In the project schools, grade II students received zero scores more often than both grade II students in comparison schools ($p < 0.05$, significant) and grade IV students ($p < 0.05$, significant).

No significant differences were observed in zero scores for sub-task 3 between boys and girls across project and comparison district schools.

Table 9: Zero scores for sub-task 3: devised word identification

Status	Comparison district students				Project area students			
	Grade II		Grade IV		Grade II		Grade IV	
	N	%	N	%	N	%	N	%
Zero score	53	17.7*	62	20.7	87	29.0*	37	12.3*
Non-zero score	247	82.3	238	79.3	213	71.0	263	87.7
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$, significant

6.5. EGRA Sub-Task 4 – Oral Passage Reading

Sub-task 4, oral passage reading, is a timed assessment where students have 60 seconds to complete the assignment to determine the number of words read per minute (fluency rate). Students' fluency rates were similar across project and comparison districts (33.7 and 32.9, respectively), and the fluency rate among students in continuing FFE I and II schools was higher than students in new schools added under FFE phase III (33.9 and 39.9, versus 30.3, respectively; $p < 0.05$, significant). No significant differences were observed between boys and girls.

Table 10: Fluency rates for sub-task 4: oral passage reading

Grades	Sex	Comparison		Project		FFE I		FFE II		FFE III	
		Mean	N	Mean	N	N	Count	N	Count	N	Count
Grade II	Boy	31.8	150	24.2	150	22.3	78	40.0	24	19.3	48
	Girl	31.1	150	29.7	150	30.8	78	41.2	24	22.0	48
	Total	31.5	300	26.9	300	26.6	156	40.6	48	20.7	96
Grade IV	Boy	35.5	150	40.5	150	39.0	78	45.2	24	40.7	48
	Girl	33.4	150	40.7	150	43.8	78	33.2	24	39.4	48
	Total	34.4	300	40.6	300	41.4	156	39.2	48	40.0	96

Overall, 19.7% of students in project district schools and 18.5% of students in the comparison district schools could complete reading the entire oral passage. Although students in continuing schools under FFE phase I and II could read the entire passage more often than students in new FFE III schools, the difference was not statistically significant. No significant differences were observed between boys and girls in reading the entire passage.

A *zero* is scored if a student is unable to read any words in the first line of the sub-task. No significant differences in zero scores were observed between boys and girls. Grade II students in project schools received more zero scores than comparison schools ($p < 0.05$, significant), which is expected. Grade IV students in project area schools scored fewer zeros (7%) than those in comparison schools (13.3%; $p < 0.05$, significant). No significant differences were observed in zero scores among students across continuing schools under FFE phase I and II, and new schools in FFE phase III. The detailed scores are provided in Annexure 5 – EGRA Analysis.

6.6. EGRA Sub-Task 5 – Reading Comprehension

The benchmarks set by Government of Tanzania for reading comprehension were used as benchmarks for this sub-task (RTI, 2016). According to the benchmarks, students are considered as fluent with comprehension if they can answer 80% or more of the reading comprehension questions correctly.

Overall, 16.3% of students in project district schools and 19.2% of students in the comparison district schools met the national benchmarks, and as expected, the overall performance of grade IV students was higher than grade II students ($p < 0.05$, significant).

Table 11: EGRA sub-task 5 scores disaggregated by study group

Sub-task 5 score	Comparison								Project							
	Grade II				Grade IV				Grade II				Grade IV			
	Boy		Girl		Boy		Girl		Boy		Girl		Boy		Girl	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Score <80%	122	81.3	129	86.0	116	77.3	118	78.7	142	94.7	136	90.7	110	73.3	115	76.7
Score ≥ 80%	28	18.7	21	14.0	34	22.7	32	21.3	8	5.3	14	9.3	40	26.7	35	23.3

*and ** $p < 0.05$, significant

Table 12: EGRA sub-task 5 scores disaggregated by FFE phases

Sub-task 5 score	FFE I								FFE II								FFE III							
	Grade II				Grade IV				Grade II				Grade IV				Grade II				Grade IV			
	Boy		Girl		Boy		Girl		Boy		Girl		Boy		Girl		Boy		Girl		Boy		Girl	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Score <80%	74	94.9	70	89.7	61	78.2	58	74.4	22	91.7	23	95.8	16	66.7	18	75	46	95.8	43	89.6	33	68.8	39	81.3
Score ≥80%	4	5.1	8	10.3	17	21.8	20	25.6	2	8.3	1	4.2	8	33.3	6	25	2	4.2	5	10.4	15	31.3	9	18.8

Zero scores were computed depicting students who could not answer any of the questions. As expected, the overall scores for grade IV students was higher than grade II students ($p < 0.05$, significant). Overall, no significant differences were observed in scores across project (27.1) and comparison district schools (27.9), or between boys and girls (Table 13 below).

Table 13: Analysis of zero scores for sub-task 5, by grade

Status	Comparison								Project							
	Grade II				Grade IV				Grade II				Grade IV			
	Boy		Girl		Boy		Girl		Boy		Girl		Boy		Girl	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Zero score	32	21.3	34	22.7	28	18.7	45	30.0	56	37.3	48	32.0	24	16.0	21	14.0
Non-zero score	118	78.7	116	77.3	122	81.3	105	70.0	94	62.7	102	68.0	126	84.0	129	86.0

* $p < 0.05$, significant

6.7. Bivariate and multivariate analyses of EGRA scores

The EGRA sub-scores were used as the outcome or independent variables and analysed using bivariate and multivariate methods to understand the underlying causal pathways.

The outcome variables were used separately along with the following predictor variables to understand the causal relationship. The key predictor variables used in the analysis included:

1. Grade of the student (II – 1, IV – 2)
2. Sex of the student (Male – 1, Female – 2)
3. Study arm (Comparison – 0, Project – 1)
4. Literacy status of student's parent (Illiterate – 0, Literate – 1)
5. Whether student's household member has bank account (No account – 0, Account – 1)
6. Employment status of student's parent (Unemployed – 0, Employed – 1)
7. Whether student's parent is a WE member (Non-member – 0, Member – 1)
8. Whether student has eaten minimum acceptable diet (No MAD – 0, MAD – 1)
9. School sustainability and readiness assessment score (SSR)
10. Classroom organization teacher score*
11. Quality of instruction score*
12. Class activity score*

- 13. Teaching method adopted by teacher score*
- 14. Teacher's method of assessing students score*
- 15. Use of teaching materials during class score*
- 16. Library use by student (Not using library – 0, Using library – 1)

**The scores for these are explained in Annexure 26.4*

The EGRA scores are provided in Annexure 5 – EGRA analysis. Additionally, a detailed list of results for bivariable and multivariate analysis (correlation and regression results) are given in Annexures 10, 11, 12, 13, 14 and 15.

6.8. Correlation analysis for EGRA scores

Correlation coefficients were computed to understand the relationship between independent variables and predictor variables. Positive correlation was observed between library use by students and scores for the devised words identification sub-task ($p < 0.05$, significant), the oral passage sub-task ($p < 0.05$, significant) and the reading passage sub-task ($p < 0.05$, significant). It can be interpreted that students who used the library were also associated with higher performances in identifying devised words, reading paragraphs and answering comprehension questions. The detailed correlation coefficient scores have been presented in the Annexure 9.

6.9. Analyzing factors affecting EGRA scores

Multiple linear regression analysis was conducted on the phonemic awareness (sub-task 1) scores for the project district schools and predictor variables to understand the causal linkages. The first linear regression was done using socio-economic indicators. Although the literacy level of the student's parent (coef. 2.9, $p > 0.05$, not significant) and household's access to financial services/bank (coef. 5.2, $p > 0.05$, not significant) were positively associated with grade II students' sub-task 1 scores, no significant relationships were observed.

The same regression as conducted on grade IV students. The effect of a student's household having access to bank was observed to have a strong positive effect on the student's scores for sub task 1 on phonemic awareness (coef. 10.1, $p < 0.05$, significant). No other significant relationships were observed.

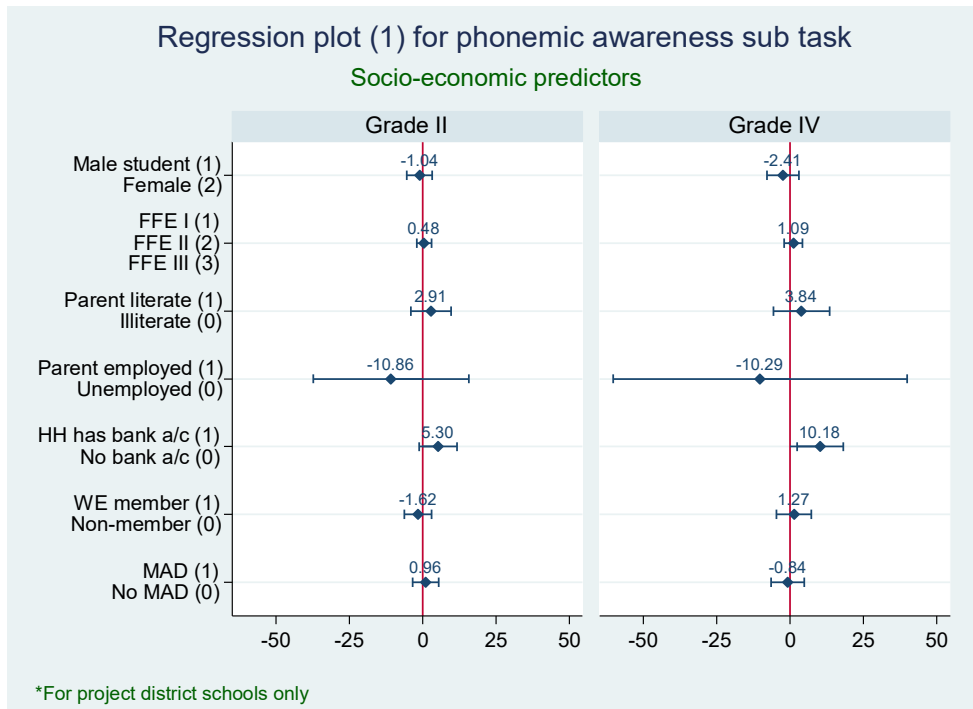


Figure 4: Regression results (1) for sub-task on phonemic awareness

The second linear regression was done using school level predictors such as; school sustainability readiness score, classroom organizing score; instructional content score; class activity score; teaching method score, score for the use of teaching materials and use of library by students. no significant causal linkages were observed between the performance of grade IV students in phonemic awareness sub-task and the school level predictors. However, use of library by grade II students was positively associated with phonemic awareness score (coef. 7.9, <0.05, significant; Figure 5).

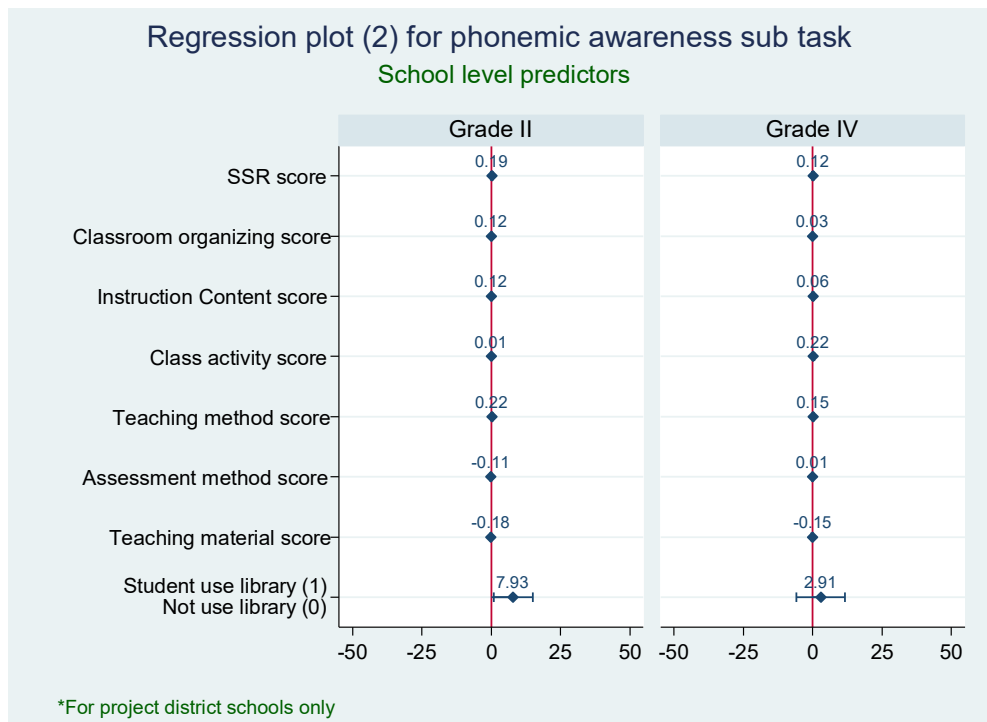


Figure 5: Regression results (2) for sub-task on phonemic awareness

Linear regression analysis was performed to understand the causal linkages between the letter sound knowledge scores and socio-economic predictors within project districts only.

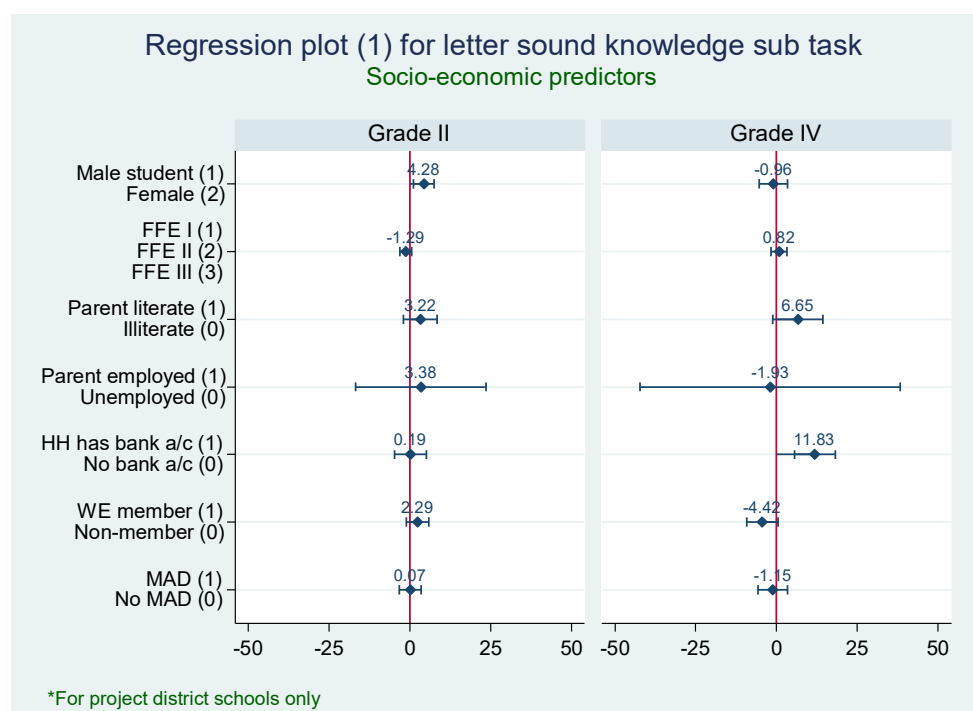


Figure 6: Regression plot (1) for letter sound knowledge

Among students in grade II, girls scored higher than boys in the sub-task scores (coef. 4.2, $p < 0.05$, significant). While among grade IV students, no significant relationships among socio-economic predictors and the outcome variables were observed.

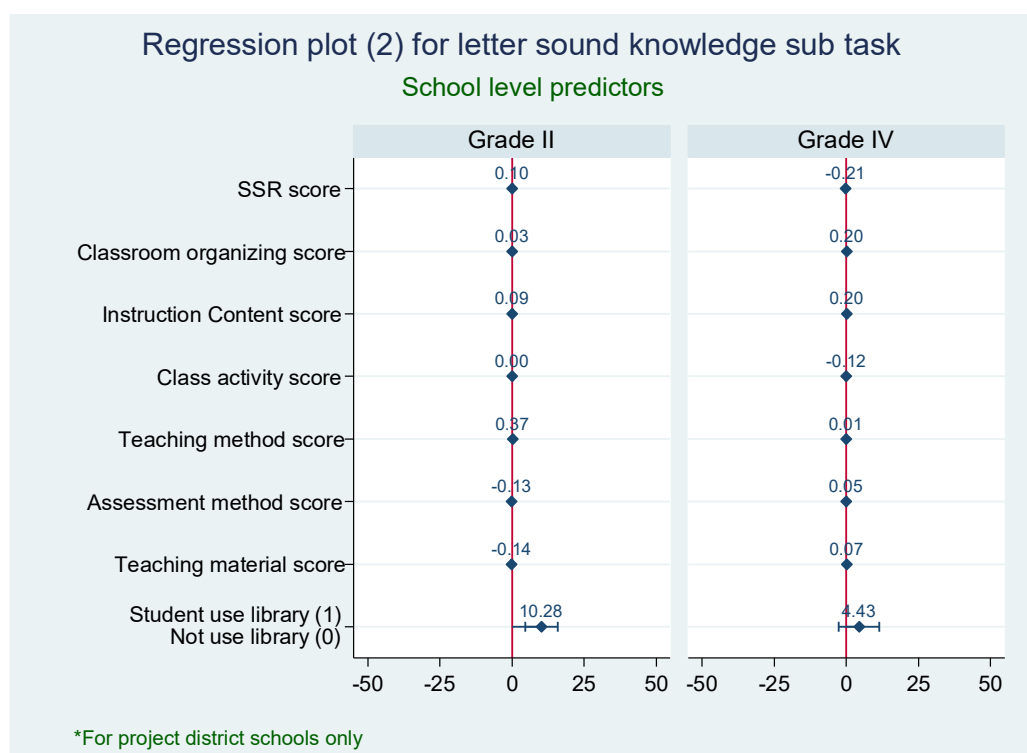


Figure 7: Regression results (2) for letter sound knowledge sub-task

For school level predictors, grade II students using library showed the highest increase in sub-task scores among other predictors (coef. 10.2, $p < 0.05$, significant). Interestingly, the effect of students using library on sub-task score decreased among grade IV students (coef. 4.4, $p > 0.05$, significant). No other significant relationships were observed.

Regression analysis to identify the effect of predictor variables on the devised word identification sub-task for was completed and the results for socio-economic predictors are below:

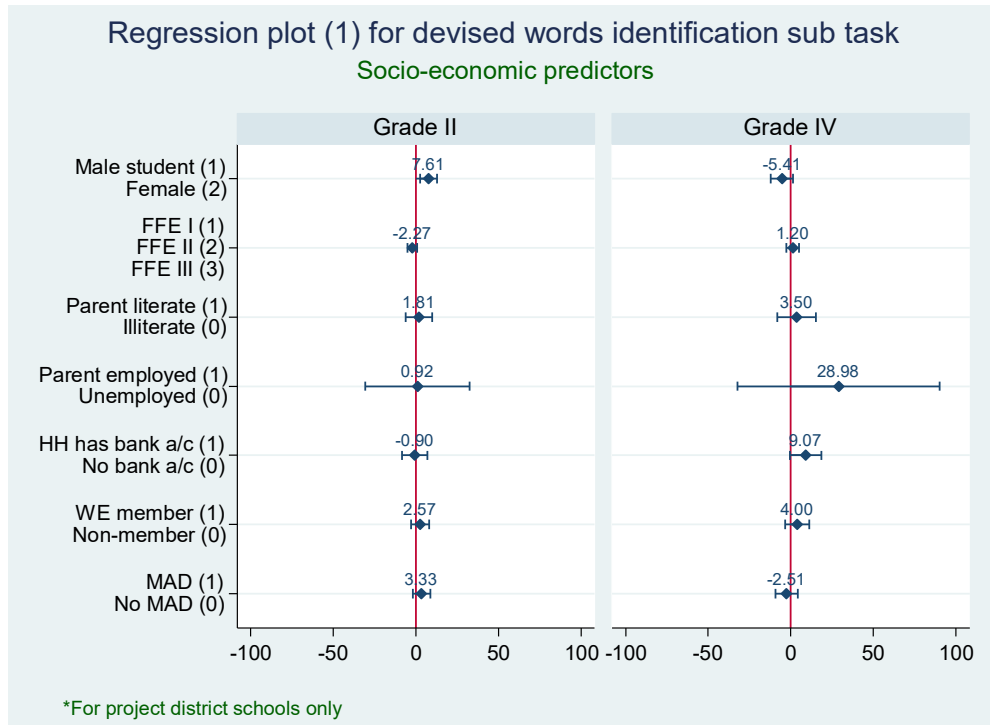


Figure 9: Regression results (1) for sub-task on devised words identification

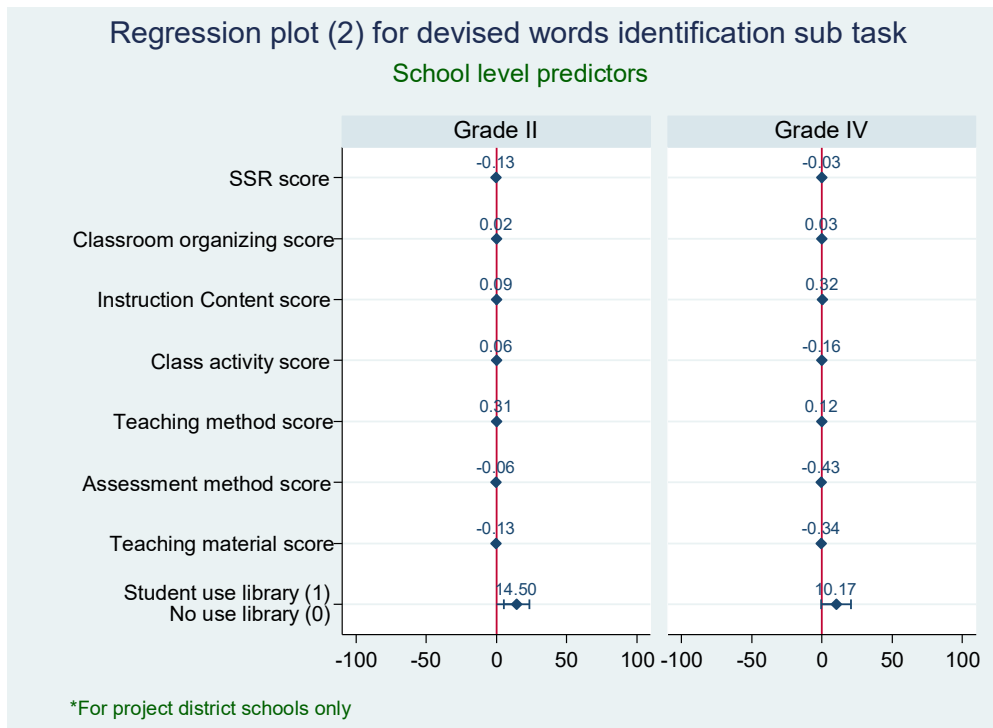


Figure 8: Regression results (2) for sub-task on devised words identification

In terms of socio-economic indicators, girls in grade II performed better than boys in the sub-task scores (coef. 7.6, $p < 0.05$, significant). While in grade IV, no significant relationships were observed.

In terms of school level indicators, the use of library by grade II students had the highest effect on increasing the sub-task scores (coef. 14.4, $p < 0.05$, significant). While for grade IV students, effect of the same saw a decrease (coef. 10.1, $p > 0.05$, significant).

Regression analysis for the oral passage reading sub-task was done using a range of predictor variables. The results have been depicted below.

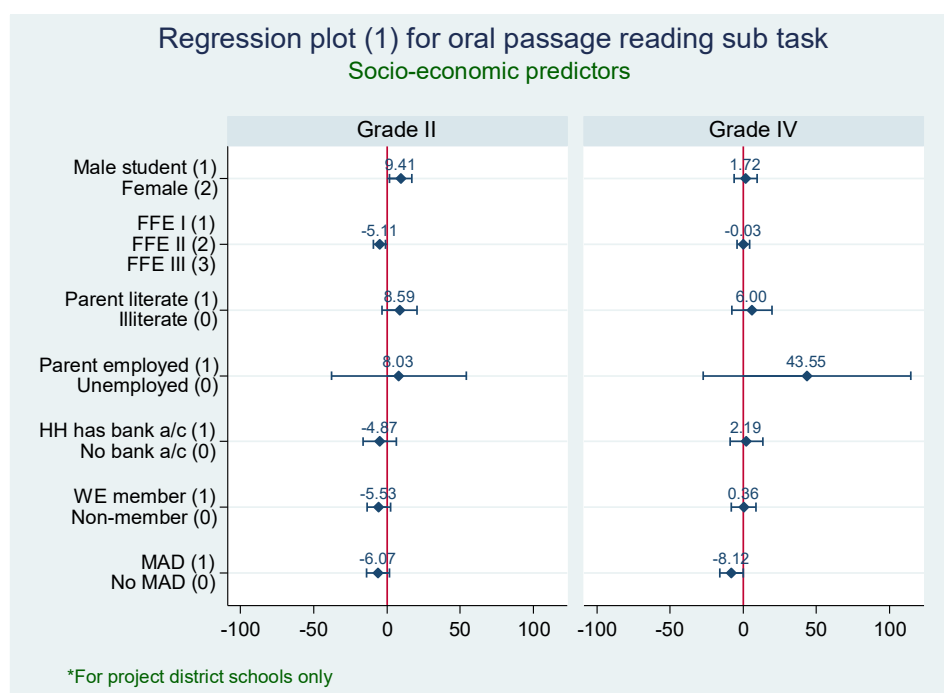


Figure 10: Regression results (1) for the sub task on oral passage reading

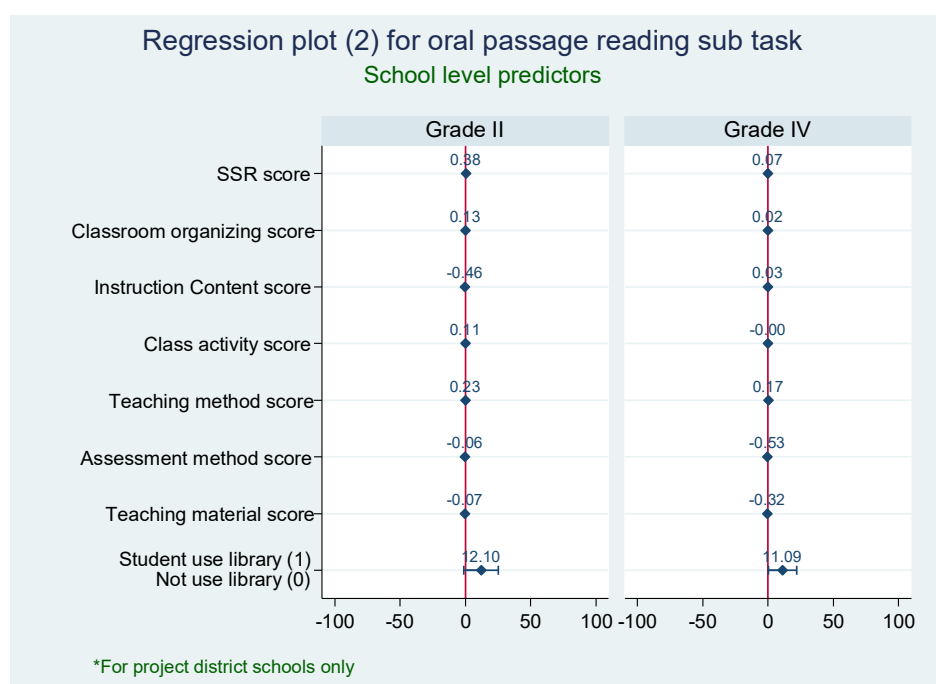


Figure 11: Regression results (2) for sub task on oral passage reading

In terms of socio-economic indicators for grade II students, girls showed a trend of scoring higher than boys for this sub-task (coef. 9.4, $p < 0.05$, significant). Interestingly, for this sub-task students in newly added schools in FFE III scored lesser than continuing schools under FFE I and II (coef. -5.1, $p < 0.05$, significant). For grade IV students, no significant relationships were observed.

In terms of school level indicators, the use of library by grade II and IV students lead to an increase in the sub-task scores. No other significant relationships were observed.

Regression analysis for the reading comprehension sub-task was completed using the socio-economic variables and the results have been depicted below:

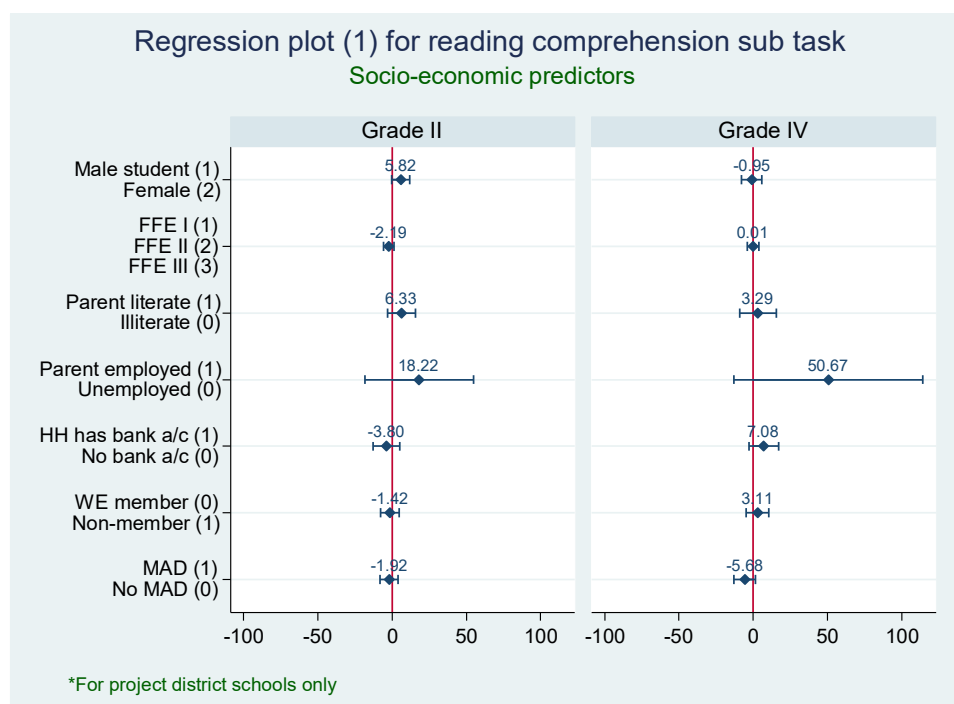


Figure 12: Regression results (1) for sub-task on reading comprehension

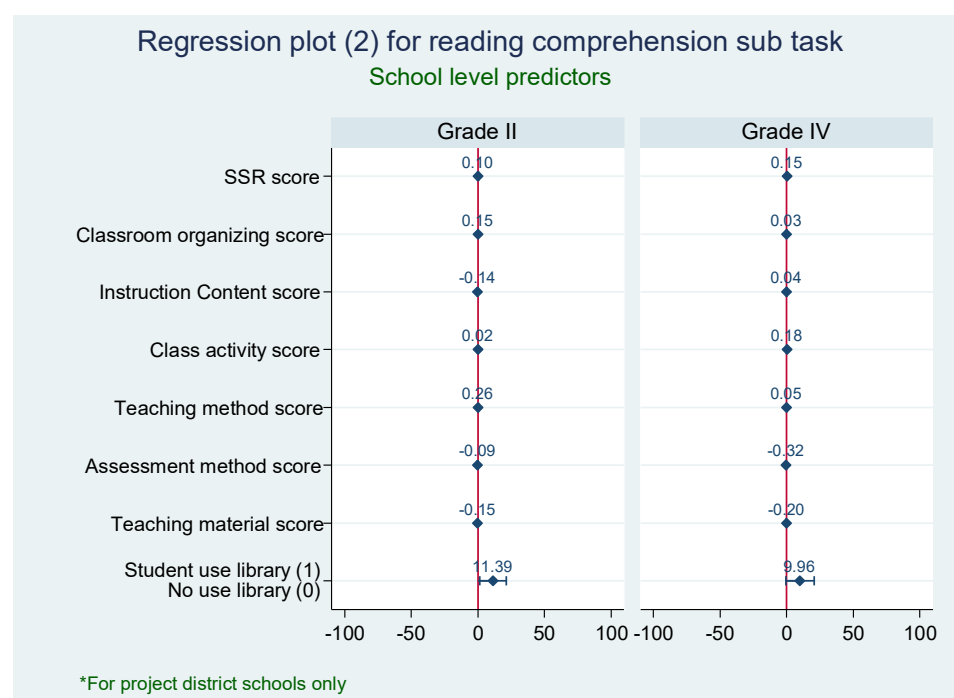


Figure 13: Regression results (2) for sub-task on reading comprehension

In terms of socio-economic indicators, no significant relationships were observed across grade II and IV students within the project district. While in terms of school level indicators, the use of library was observed to be contributing positively towards the sub-task scores for grade II students (coef. 11.3, $p < 0.05$, significant).

6.10. Regression analysis on overall EGRA scores

Overall EGRA scores were computed by taking an average of the five sub-task scores. The results from the linear regression are as follows:

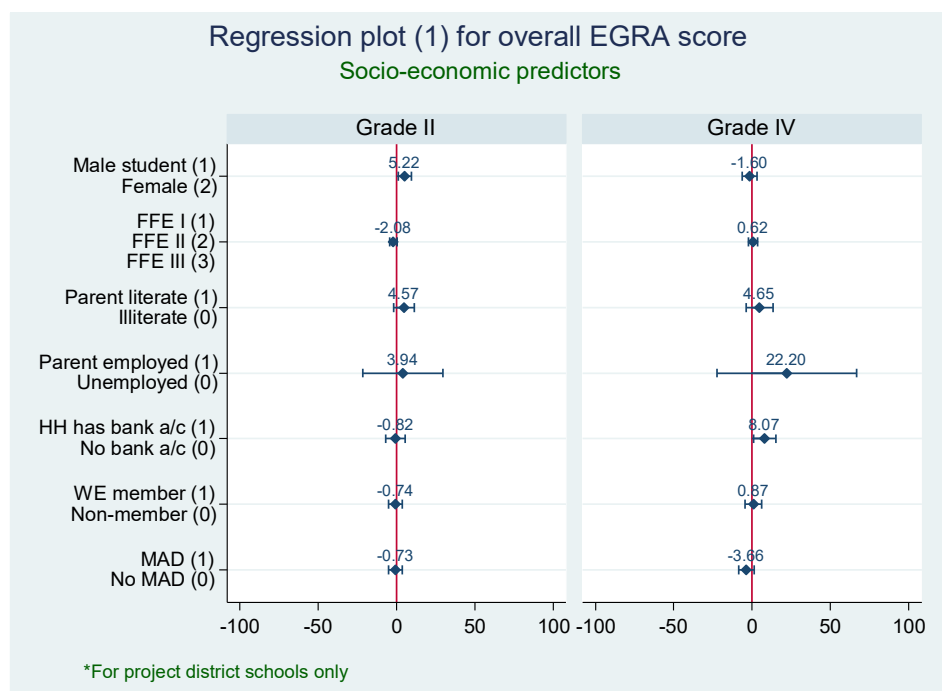


Figure 14: Regression results (1) for overall EGRA scores

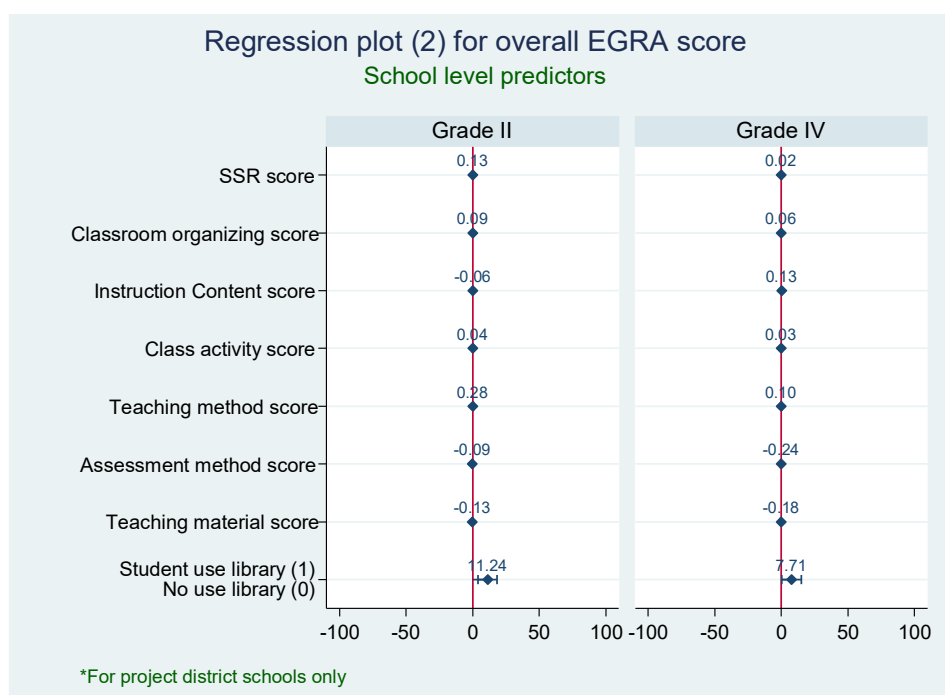


Figure 15: Regression results (2) for overall EGRA scores

For the overall EGRA scores, the sex of the student had the highest effect on the outcome variable among the socio-economic predictors. Female students, especially for grade II students, were associated with higher EGRA scores (coef. 5.2, $p < 0.05$, significant). While for students in grade IV, the households' access to formal credit through banking services, a proxy for household's economic condition, was associated with higher EGRA scores (coef. 8.0, $p < 0.05$, significant). No other significant relationships were observed. In terms of school level indicators, use of library by both grade II and IV students was associated with higher overall EGRA scores ($p < 0.05$, significant). No other significant relationships were observed.

6.11. Key takeaways from EGRA results

Based on raw EGRA scores, student performances were highest in sub-task 1 (phonemic awareness). In sub-task 1 (phonemic awareness), the average child attempted 9.6 words and correctly identified 4.4 of 10 total words.

Students performed low on sub-task 2, letter sound knowledge. A main reason is that many students identified the word of the letter rather than the sound of the letter. Overall, students in the project district schools fared better than students in the comparison district schools ($p < 0.05$, significant).

For sub-task 3, devised word identification, students in grade IV performed better than students in grade II across project and comparison schools ($p < 0.05$, significant).

For sub-task 4, oral passage reading, although the fluency rates of grade II and IV students were similar across comparison and project schools, within the project schools, grade IV students scored higher than grade II. Grade IV students in comparison schools also received more zero scores than grade IV students in the project schools. Grade II students in project schools received more zero scores than comparison schools.

For sub-task 5, reading comprehension, grade IV students' scores were better than grade II students across both project and comparison schools ($p < 0.05$, significant). Overall, the proportion of children scoring in the third and fourth quartile was higher in comparison district schools ($p < 0.05$, significant). There were no significant differences observed between boys and girls in terms of zero scores.

"I always felt the need for a library in our school. I go there almost every week. I use it quite often to borrow/read books related to my interest helped improve Kiswahili. I have also improved my numeric ability."

- Student, Project School

7. Student Knowledge, Attitudes and Practices on Health, Hygiene and Nutrition

A total of 1600 students from grades II (600), IV (600), VI (200) and VII (200) were asked about their health, hygiene and nutrition practices to understand the level of dietary, health and hygiene knowledge, attitudes, and practices of students in early and senior grades, and to determine Minimum Acceptable Diet (MAD; methodology provided in Annexure 6). The sample was equally divided between project/comparison districts and boys/girls.

7.1. Student awareness of good dietary practices

Overall, 54.4% and 57.7% of students, from project and comparison district schools, respectively, were aware of the importance of a good and balanced diet. Although students in grades VI and VII were more aware (72.05 and 78%, respectively) of the benefits than those in lower grades II and IV (44.0 and 55.0%, respectively), no significant differences in awareness were found between boys (57.1%) and

girls (54.6%). Students in new FFE-III project schools were overall somewhat more aware (59.3%) than students from continuing schools in phase II (56%) and phase I (50.7%); however, these differences were not statistically significant.

When asked what three food items should be eaten every day, the top three responses were cereals, fruits (oranges, mango, papaya) and grains (maize, rice, sorghum, millet). These responses were similar across project and comparison districts, boys and girls, grade levels, and continuing and new schools under the FFE programme.

7.2. Student dietary practices

The dietary practices of students were assessed to determine the proportion of students meeting a minimum acceptable diet (MAD), that is, meeting the minimum feeding frequency and dietary diversity for a child's age group as defined by the United States Department of Agriculture (USDA) (FAO, 2010). Students were asked about the type of food consumed and the number of meals consumed for the day before the assessment, following the USDA definitions (see Annexure 6 – Methodology for calculating Minimum Acceptable Diet).

The proportion of students reporting receiving MAD was similar between project and comparison area students surveyed. While project area students ate more snacks and lunch the previous day than comparison area students (and 89.0% indicated they were *full* during the day), fewer reported having eaten dinner ($p < 0.05$, significant; Table 14).

Table 14: Dietary practices of students in project and comparison schools

Item	Comparison		Project	
	N	%	N	%
Ate breakfast	360	45.0	326	40.8
Ate snacks after breakfast*	141	17.6	197	24.6
Ate lunch*	673	84.1	727	90.9
Ate snacks after lunch*	40	5.0	77	9.6
Ate dinner*	753	94.1	705	88.1
Ate at least 3 meals or more	345	43.1	345	43.1
No meals	9	1.1	9	1.1
Minimum acceptable diet	330	41.3	327	40.9

* $p < 0.05$, significant

A substantial proportion of all children reported missing breakfast (57.1%). Although some of these children did report having a snack after breakfast (21.1%), the proportion of children missing breakfast is important to note, especially since children in higher grades were more likely to miss breakfast ($p < 0.05$, significant; Table 17).

Table 15: Dietary practices of all students, by grade

Item	Grade II		Grade IV		Grade VI		Grade VII	
	N	%	N	%	N	%	N	%
Ate breakfast at home*	274	45.7	271	45.2	72	36.0*	69	34.5*
Ate snacks after breakfast	132	22.0	125	20.8	42	21.0	39	19.5
Ate lunch	521	86.8	532	88.7	181	90.5	166	83.0
Ate snacks after lunch	51	8.5	45	7.5	12	6.0	9	4.5
Ate dinner*	541	90.2	541	90.2	193	96.5	183	91.5
Ate at least 3 meals or more	267	44.5	270	45.0	84	42.0	69	34.5
No meals	9	1.5	6	1.0	1	0.5	2	1.0
Minimum acceptable diet	247	41.2	257	42.8	84	42.0	69	34.5

* $p < 0.05$, significant

Boys were more likely to have a snack after lunch than girls (9.1% vs. 5.5%, respectively; $p < 0.05$, significant), but no other significant gender differences were observed for meal frequency or MAD.

Significantly more students (90.9%) in project area schools reported having lunch than the students in comparison districts (84.1%) ($p < 0.05$, significant). However, no significant differences were observed in MAD and meal frequency across project and comparison districts.

More students in FFE I continuing schools (43.2%) received MAD than from phase II (30.3%), likely due to those students eating breakfast and dinner the previous day. Overall, students in new FFE phase III compared well with students from phase I schools, in terms of meal frequency and MAD (Table 18).

Table 16: Dietary practices of project area school students, by project phase

Item	Phase I		Phase II		Phase III	
	N	%	N	%	N	%
Ate breakfast	175	42.5	43	32.6	108	42.2
Ate snacks after breakfast*	117	28.4	28	21.2	52	20.3
Ate lunch	374	90.8	116	87.9	237	92.6
Ate snacks after lunch*	47	11.4	4	3.0	26	10.2
Ate dinner*	359	87.1	110	83.3	236	92.2
Ate at least 3 meals or more*	190	46.1	41	31.1	114	44.5
No meals	4	1.0	4	3.0	1	0.4
Minimum acceptable diet*	178	43.2	40	30.3	109	42.6

* $p < 0.05$, significant

In summary, the evidence suggests that school-provided lunches are important factor in keeping students at school and full during the day, but not necessarily linked to eating lunch (students eat lunch anyway, either at home or somewhere else). It is difficult to observe the link between school-provided meals and MAD, since many children skipped breakfast, thereby reducing meal frequency and likely also dietary diversity. The findings do not indicate that students skip breakfast because they are receiving a school-provided lunch.

“Food is an important motivation for my willingness to go to school. Normally I had to travel back home on days when there was food at home. Sometimes had to stay empty stomach in the absence of food at home.”

- Student, Project School

7.3. Variables associated with improved Minimum Acceptable Diet

The following variables were used as predictors to check their effect on MAD through odds-ratio scores for project district schools: student’s sex, grade, and marital status, electricity in the household, employment status of the student’s parent, literacy status of the student’s parent, and whether student’s parents are WE members.

Students had higher odds of eating breakfast if they were unmarried (OR=4.9, $p<0.05$, significant), had electricity in their household (OR=1.4, $p>0.05$, not significant), and their parents had been members of a WE group (OR=1.5, $p<0.05$, significant).

Students had higher odds of eating lunch if they were girls (OR=1.49, $p>0.05$, not significant), their parents were literate (OR=1.5, $p>0.05$, not significant) and members of a WE group (OR=1.34, $p>0.05$).

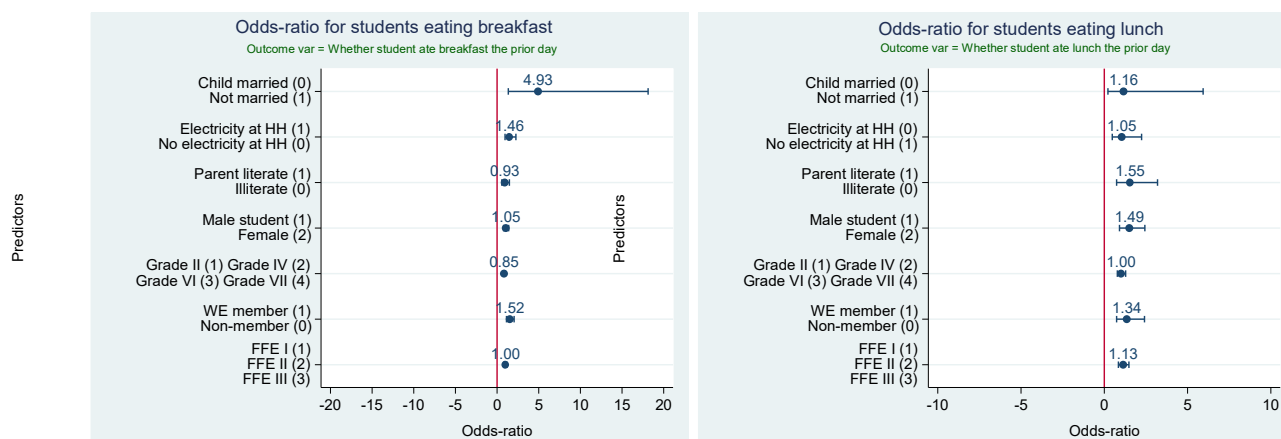


Figure 16: Odds-ratio scores for students eating breakfast (left) and lunch (right)

(Figure 20). No significant predictor variables were observed with consumption of dinner.

Students had higher odds of receiving a MAD if they were unmarried (OR=3.8, $p<0.05$, significant), had electricity in their household, (OR=1.5, $p<0.05$, significant) and if their parents had been members of WE group (OR=1.5, $p<0.05$, significant) (Figure 21).

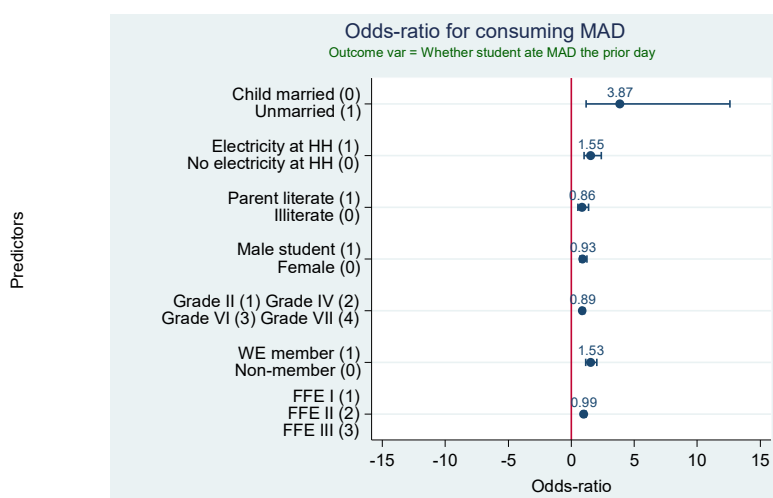


Figure 17: Odds-ratio for students eating minimum acceptable diet

7.4. Student health and hygiene awareness and practice

The same sample of 1600 students were assessed on their knowledge and practice of health and hygiene behaviors. Overall, 70% of students were aware of health and hygiene practices; however, a much smaller proportion understood that these practices keep them healthy (33% and 35% in project and comparison schools, respectively), or that they help prevent disease (41% and 39% in project and comparison schools, respectively). Girls and boys were similarly aware, and students in higher grades VI (79.0%) and VII (84.5%) were significantly more aware of the importance of health and hygiene practices than those in lower grades II (62.2%) and IV (70.3%; $p<0.05$, significant).

Among project schools, a total of 66.6% of students were able to identify at least 3 or more good health and hygiene practices. The most common responses were taking a bath, washing clothes every day, and keeping the home environment clean (Table 17). The responses were similar between boys and girls.

Table 17: Proportion of students identifying various good health and hygiene practices

Practice Identified	Comparison (%)	Project (%)	Phase I (%)	Phase II (%)	Phase III (%)
Wash hands	4.8	4.5	5.1	3.5	4.2
Keep the school environment clean	9.9	12.6	11.2	18.1	11.9
Keep the home environment clean	11.9	12.2	10.5	15.4	13.2
Taking a bath	28.6	24.7	24.6	23.9	25.3
Wash clothes everyday	18.6	14.9	14.2	13.9	16.2
Drink clean water	7.5	8.3	9.1	8.1	7.4
Eat food regularly	3.1	2.4	2.6	1.9	2.3
Don't know/Don't have an answer	11.7	15.7	17.9	12.4	14.1

Students were generally (>80%) able to answer correctly when asked questions covering a wide range of health and hygiene practices. The responses were similar across project and comparison district schools, and boys and girls (Table 18).

Table 18: Proportion of students with knowledge on health and hygiene practices

Health and hygiene practices	Comparison		Project		Boys		Girls	
	N	%	N	%	N	%	N	%
Agree that sickness can be caused by many things, such as bad nutrition and poor hygiene	671	83.9	648	81.0	655	81.9	664	83.0
Agree that some diseases can be prevented by wearing shoes	650	81.3	644	80.5	643	80.4	651	81.4
Agree that food gives them energy, immunity and helps them grow	747	93.4	729	91.1	742	92.8	734	91.8
Agree that they should wash hands with water and soap to prevent illness	755	94.4	733	91.6	746	93.3	742	92.8
Agree that they should wash hands with water and soap before cooking	700	87.5	691	86.4	686	85.8	705	88.1
Agree that they should wash hands with water and soap before eating	747	93.4	741	92.6	746	93.3	742	92.8
Agree that they should wash hands with water and soap after using the toilet.	759	94.9	753	94.1	753	94.1	759	94.9
Agree that they can keep their school clean, safer and healthy	752	94.0	737	92.1	743	92.9	746	93.3

Most students from both project and comparison schools practice health and hygiene behaviours similarly, but there was a notable exception of washing hands. In general, students at project area schools washed their hands more often at school than those in comparison district schools (Table 21). For example, at project area schools, 72.8% of students reported washing hands after defecation compared to just 51.1% of students in comparison district schools.

However, once at home, students from project areas schools, specifically those in continuing FFE schools, did not wash their hands as often as those in comparison districts, or even those in new FFE schools (Table 19)

Table 19: Proportion of students practicing good health and hygiene behaviours

Health and hygiene behaviours practiced	Comparison		Project		Phase I		Phase II		Phase III	
	N	%	N	%	N	%	N	%	N	%
Brush teeth everyday	694	86.8*	732	91.5*	381	92.7	112	87.5	239	91.6
Take a bath everyday	751	93.9	768	96.0	396	96.4*	125	97.7*	247	94.6*
Use a toilet at home for defecation	740	92.5*	772	96.5*	400	97.3	124	96.9	248	95.0
Use a toilet at school for defecation	735	91.9	762	95.3	398	96.8	122	95.3	242	92.7
Wash hands after defecation at school	409	51.1*	582	72.8*	333	81.0*	99	77.3*	150	57.5*
Wash hands before eating at school	374	46.8*	641	80.1*	366	89.1*	115	89.8*	160	61.3*
Wash hands after eating at school	354	44.3*	637	79.6*	368	89.5*	115	89.8*	154	59.0*
Use water and soap to wash hands at school	90	11.3	204	25.5	121	29.4	35	27.3	48	18.4
Use water and soap to wash hands at home	384	48.0*	182	22.8*	50	12.2	24	18.8	108	41.4

* $p < 0.05$, significant

All the positive responses on the above questions were given a score of 1 and summed together into a single variable, which was converted into a scale of 0 – 100 to provide a *score for the practice of health and hygiene behaviours*. The scores were divided across quartiles and plotted across project/comparison. Project areas performed better, with a larger proportion of students falling in the highest quartile than students in the comparison district (Table 20). Students from continuing phase I and phase II schools practiced good health and hygiene behaviours more often than students in phase III schools: 75.9% from phase I and 70.3% from phase II schools scored in the highest quartile, compared with just 50.5% of students in phase III schools.

Table 20: Quartiles for scores on practice of health/hygiene behaviours

Quartiles for scores on practice of health/hygiene behaviours	Comparison		Project		Total	
	N	Column %	N	Column %	N	Column %
Low scores (0 – 25)	15	1.8	5	0.6	20	1.2
Below average scores (25 – 50)	148	18.5	62	7.7	210	13.1
Above average scores (50 – 75)	367	45.8	199	24.8	566	35.3
High scores (75 – 100)	270	33.7	534	66.7	804	50.2
Total	800	100.0	800	100.0	1600	100.0

7.5. Student attendance

Individual student attendance data was collected from classroom attendance registers for the period of October 2016 to March 2017. Attendance records for this period was available from 68.9% and 70.9% of project and comparison area schools, respectively. For the remaining schools, the attendance for the present year (January 2017 to March 2017), was requested. Overall, the median number of school days during the six month period was 99 days.

The overall median attendance rate for students was 91.09%. The median absence rate was 8.8%, and the absence rate due to illness was 2.9%. The numbers were similar across project and comparison schools. The attendance rate for project schools was 91.4%, compared to 90.9% in comparison schools. 83.8% of students in project schools had equal to or more than 80% attendance, compared to 82.6% in comparison schools.

Logistic regression was run to determine whether the following predictor variables were positively associated with student's attending over 80% of the time: the intervention area, student's grade and sex, literacy level of student's parent, employment status of the student's parent, whether student's household has a bank account, electricity in the household, and whether the student's parent has been a member of a WE group. Odds-ratio scores note that there is no significant effect of any predictor on the outcome variable.

8. Household Socio-Economic Conditions

The socio-economic conditions of students' households was assessed to understand the contextual and extraneous factors that may affect overall learning outcomes. The socio-economic assessment was done on a sub-sample of 800 parents selected from among the participating students equally divided across project/comparison areas, student grade level and sex.

Overall 68% of parents interviewed were female and the primary care giver. In the project districts, 16.5% of the responding parents reported currently or previously being part of a WE group. Of those, 11.5% were still current members, while 5% were previous members. Compared to the project district, only 3.5% of the respondents in the comparison district reported being a member of any voluntary group. In the project districts, 12% of the respondents also reported being a current (7.5%) or previous (4.5%) member of a farmer group.

The average time parents reporting staying in their village was 17 years (SD=11.66). In the project districts, 82% could read or write/read, compared with 76.8% in the comparison district. The majority of respondents across both project (78.8%) and comparison (68.8%) districts reported having studied until primary school.

According to self report, most primary bread earners were male (84.6%) rather than female (29.3%) and employed in skilled/formal sectors working as teachers, local transport drivers or mechanics, or in informal sectors, including agriculture, agricultural labourer, fishing and livestock. Less than 1% of the respondents reported being unemployed, but only 2.6% of the total respondents were employed in salaried jobs. A majority of respondents (94%) lived on their own farms/were small landholders.

Open public well, protected public well and pond/lakes were the three most common sources of drinking water. Piped water supply was less than 1% across all the respondents. Based on the Demographic and Health Survey (DHS) definitions⁹ (DHS, 2015-16), 48% of comparison district households use an improved drinking water facility compared with 30.3% of households in the project

⁹ Improved source of drinking water is defined as *piped water, public taps, standpipes, tubewells, boreholes, protected dug wells and springs, rainwater and bottled water*

district. Overall, 86.5% of comparison district households treated water before consumption, compared with 85.5% of the households in the project districts.

The three major toilet facilities observed were pit latrines without slab/open pit, pit latrine with slab, and a flush/pour to a pit latrine. Based on the DHS definitions (DHS, 2015-16), 41.3% of the households in the project districts reported having improved toilets compared to 30% in the comparison district.

The majority of the households across project and comparison districts used firewood as the main source of fuel for cooking and solar energy as the main source of lighting in their household, followed by the paraffin-wick lamp. Electricity was reported in only 7% of the households in the project area and 3.8% of households in the comparison area.

To understand the economic condition of the household, a wealth index was computed using DHS definitions. Households are scored based on the number and kinds of consumer goods they own, housing characteristics, such as the source of drinking water, toilet facilities, and flooring materials. These scores were derived using PCA, and wealth quintiles were compiled by assigning the household score to each household and then dividing the distribution into five equal categories (each with 20% of the population; see Annexure 8 for wealth index scores and factor weights).

According to the wealth quintiles, 41.8% of households across the comparison district and 38.3% of households across the project district were in the poor and poorest quintiles. While more households in the project districts were categorized as medium/wealthy/wealthiest (61.8%) compared with the comparison district (58.3%), the share of wealthiest households (top quintile) in the comparison district was higher than in project districts (Table 21), and households located within continuing phase II and new phase III areas of the project consisted of the poorest of households. Interestingly, more than 70% of the households with WE membership were in the medium to the wealthiest category in the wealth index, and only 8.3% of the WE members fell in the poorest category. There were no major differences between the wealth status of households with a female versus male student.

Table 21: Distribution of households by wealth index quintiles

Wealth Index Quintiles	Comparison		Project	
	N	%	N	%
Poorest 20%	84	21.0	76	19.0
Poor	83	20.8	77	19.3
Medium	78	19.5	82	20.5
Wealthy	69	17.3	91	22.8
Wealthiest 20%	86	21.5	74	18.5
Wealthiest	145	19.6	15	25.0

Table 22: Distribution of wealth quintiles, disaggregated by sex of the child

Wealth Index Quintiles	Household with male child		Household with female child	
	N	Column %	N	Column %
Poorest	78	19.5	82	20.5
Poor	75	18.8	85	21.3
Medium	79	19.8	81	20.3
Wealthy	88	22.0	72	18.0
Wealthiest	80	20.0	80	20.0

“The WE groups have been very effective in increasing the income of the households. Over the years the groups have become self-sufficient and are able to lend to members. 80% of the groups are now in the 3rd stage and are carrying out lending activities.”

- Project Office, PCI Tanzania

8.1. Household socio-economic conditions for female members

Female primary care givers were further surveyed gain insights into the household gender relations and the prevalence of domestic violence. Responses reflect the prevailing social norms that favour of male members of the household.

Although men are considered primary bread earners, women also work. More than 90% of the female respondents interviewed were engaged in agriculture as farmers or labourers across both project and comparison districts. Over a quarter of the female respondents in both project and comparison districts reported actually earning more than or similar to their spouse, but only 40% reported having the authority to decide how their earned money was to be spent/utilized. Within the 40%, approximately one third of the female respondents were head of their respective households. Interestingly, if a women had been part of a WE group, she was more likely to have authority over spending; 56.8% of WE members in contrast to just 38.7% among the rest of the respondents.

Table 23: Statements administered to women respondents, by study area

Statements	Response	Comparison		Project	
		N	%	N	%
Is a husband justified in hitting or beating his wife if she goes out without telling him?	Yes	182	70.8	161	68.2
	No	72	28.0	72	30.5
	Don't Know	3	1.2	3	1.3
Is a husband justified in hitting or beating his wife if she neglects the children?	Yes	172	66.9	157	66.5
	No	84	32.7	77	32.6
	Don't Know	1	0.4	2	0.8
Is a husband justified in hitting or beating his wife if she argues with him?	Yes	190	73.9	156	66.1
	No	64	24.9	77	32.6
	Don't Know	3	1.2	3	1.3
Is a husband justified in hitting or beating his wife if she refuses to have sex with him?	Yes	170	66.1	139	58.9
	No	84	32.7	90	38.1
	Don't Know	3	1.2	7	3.0
Is a husband justified in hitting or beating his wife if she burns the food?	Yes	74	28.8	75	31.8
	No	180	70.0	158	66.9
	Don't Know	3	1.2	3	1.3

The majority of women across project and comparison districts believed a husband was justified in hitting or beating his wife in certain occasions. More than 73.9% of women in the comparison district agreed that a husband is justified in hitting or beating his wife if she argues with him. The same was reported by 66.1% of women across the project districts.

Of women in the project districts 18.2% reported that their husband had hit/beat them in the past 6 months, while 17.5% of women in the comparison districts reported the same. However, the proportion fell to 9.1% for women who were a part of a WE group. The most cited reason for domestic violence was *arguing with husband* (>30%).

9. Parent knowledge and practice of health, hygiene and nutrition behaviours

9.1. Parent knowledge and practice on health and hygiene behaviours

Across project and comparison areas, 95% of respondents could mention at least 3 health and hygiene practices to be followed every day and almost all respondents were aware of at least three crucial times for handwashing. The top three practices identified were using toilets for defecation/urination (18.9%),

wearing clean clothes (13.8%) and taking bath regularly (10.7%). Within the project area, the responses were similar across the FFE phases.

Table 24: Proportion of parents who identify crucial times of handwashing

Crucial times for handwashing	Comparison %	Project %	Overall %
Before cooking	9.6	8.1	8.8
After handling food	5.3	4.6	5.0
Before eating	23.4	27.1	25.2
Before feeding the child	4.6	5.9	5.2
After cleaning infant faeces	6.3	5.7	6.0
While washing clothes	2.2	2.2	2.2
While bathing	3.2	3.0	3.1
While washing dishes	2.1	1.6	1.8
After defecating	23.8	22.8	23.3
After urinating	4.9	4.2	4.6
After eating	12.4	13.2	12.8

In the project districts, 81% of respondents used water and soap to wash hands, while 77.8% of respondents in the comparison district did the same.

9.2. Parent knowledge and practice on nutrition behaviours

Most of the parents ensured that the children were fed foods, including vegetables, in the home and did not depend on the school to provide their child with nutritious foods. For example, almost all parents provided their child with vegetables at least once a week and only less than 1% of parents depended on school meals to feed their child vegetables (Table 25).

Table 25: Proportion of parents who identify good nutrition and dietary practices

Nutrition and dietary practices	Comparison %	Project %
Give their child eggs in last seven days	20.0	11.8*
Give their child milk at least once a week	5.0	48.3
Provide their child vegetables at least once a week	99.0	96.0
Agree school-provided meals play important role in increasing child's willingness to attend school	85.0	88.7
Willing to contribute to the school meal programme	89.8.0	84.3

*note phase II 17.2%, phase III 9.4%

9.3. Parent support for school-provided meal programs

Although support for the school meal program is high and most parents reported they were willing to provide support to the program, the type of support parents prefer to give varies by area. In project districts, 54.3% of parents were willing to support the school meal provision by providing monetary aid, compared to 34.6% of parents in the comparison district. In the comparison district, 57% of parents were willing to support the school meal provision by contributing a food commodity, compared to 34.6% of parents in the project districts. Implications of this for sustainability are discussed further in the Discussion section.

9.4. Parent-reported student absences due to illness

Parents were asked whether their children had suffered illness recently, and whether their child had been absent from school due to illness. Frequent absences due to illness are common: in the project area, 51.1% of project and 52.5% of comparison area respondents reported their children miss school-

days due to frequent illness. Respondents from FFE phase I project area reported the highest number of illness among children (42.3%), followed by respondents in phase III (39.8%) and phase II (37.3%).

In the project districts, 37.3% of parents reported that their child had suffered from illness in the past 14 days, compared with 42.3% of comparison district parents. The most common illnesses were malaria (34.5% project, 52.1% comparison), fever (35% project, 25.8% comparison) and coughing (12.4% project, 6.3% comparison).

9.5. Parental monitoring and engagement

Parents monitor their child's school performance in a number of different ways, and few parents reported not taking any steps (Table 26 below). The most common steps reported were to regularly checking their/ child's notebook (39.2%), meet teachers regularly (20.4%) and ensure their child has a fixed time to study at home (11.0%).

About half of parents reported they have visited their child's school in the current academic year, usually to talk to the teacher about the child's performance at school (48.9%), to attend a parent-teacher meeting or school committee meeting (30.4%) or to attend a school feeding sub-committee meeting (10.3%). Although attending committee meetings was commonly reported, in project areas only 3.8% of parents reported being members of a school committee.

"We have seen a change in the involvement of parents in our education after the onset of the program. They are now more involved in our studies than before. They help us in our home-work, motivate us and devote time for studies at home."

- Student, Project School

Interestingly, 14% of parents with a female child reported not taking any step to check their child's performance at school, compared with 10.3% of parents with a male child. Parents with a male child were slightly more likely to visit their child's school (49.8%), than parents with a female child (45.5%).

Table 26: Crucial times of handwashing, disaggregated by project and comparison districts

Parent Participation	Comparison %	Project %
Visited child's school in current academic year	43.5%	51.8%
Members of a school committee	9.3%	3.8%
Informed by child that teacher is available for each class during the day	58%	65.5%
Informed by child that teacher assessed all exercises student completed during their school day	68.5%	69.5%
No steps taken by parent	14.0%	10.0%

9.6. Parental perception toward primary education through a gender lens

Parents were asked to respond to a list of statements on a scale of one to five, with one representing complete disagreement and five representing complete agreement. The statements focused on the importance of education through a gendered lens.

The perception and support of respondents are skewed in favour of boys' over girls' primary education. Although parental responses in the comparison district were more gender-equitable compared with parents in the project districts, many parents in both project and comparison believed that girls are more effective in doing household chores than going to school (Table 27).

Table 27: Proportion of parents who agree with gendered statements

Statements	Comparison		Project		Total	
	N	%	N	%	N	%
Girls can perform as well as boys in the school	331	82.8	298	74.5	629	78.6
Girls can lead as well as boys in the school	339	84.8	297	74.3	636	79.5
Girls and boys have equal rights to education	372	93.0	345	86.3	717	89.6
Girls have a primary role is looking after the kitchen as compared to boys	366	91.5	343	85.8	709	88.6
As compared to boys, girls are more effective in doing household chores than going to school	261	65.3	289	72.3	550	68.8
It is better to educate a boy than a girl because boys will be the primary bread earner	125	31.3	134	33.5	259	32.4

The responses from respondents across the project phases were varied (Table 28); however, nearly 70% of the respondents agreed that girls are more effective in doing household chores than going to school, and more than more than 30% of respondents agreed that it is better to educate a boy than a girl, due to boys being the potential primary bread earners.

Table 28: Proportion of project area parents who agree with gendered statements, by project phase

Statements	Phase I		Phase II		Phase III	
	N	%	N	%	N	%
Girls can perform as well as boys in the school	154	74.0	48	75.0	96	75.0
Girls can lead as well as boys in the school	155	74.5	42	65.6	100	78.1
Girls and boys have equal rights to education	175	84.1	56	87.5	114	89.1
Girls have a primary role is looking after the kitchen as compared to boys	181	87.0	50	78.1	112	87.5
As compared to boys, girls are more effective in doing household chores than going to school	156	75.0	44	68.8	89	69.5
It is better to educate a boy than a girl because boys will be the primary bread earner	67	32.2	26	40.6	41	32.0

The perceptions of respondents who had been a member of a WE group were not different from the non-WE members. Of respondents who were a part of the WE group, 71.7% reported that girls are more effective in doing household chores than in going to school.

10. Teaching environment and approaches in schools

10.1. Teacher background and experience

A total of 200 teachers (100 from project area and 100 from comparison district schools) were surveyed to assess the teaching environment at primary schools, teachers' training level and knowledge. Further, teachers were observed in class to assess the teaching methods used. Most teachers surveyed included those with a wide variety of experience, usually anywhere between one and 10 years, and represented all grades from pre-primary through grade 7 (Table 29).

Table 29: Teachers and their respective grades for teaching

Grades Taught	Comparison (%)	Project (%)	Overall (%)
Pre-primary grade	2.8	4.0	3.4
Grade 1	8.8	11.6	10.2
Grade 2	16.1	15.1	15.6
Grade 3	14.5	13.1	13.8
Grade 4	18.1	15.9	17.0
Grade 5	14.1	12.7	13.4
Grade 6	13.3	13.9	13.6
Grade 7	12.4	13.5	13.0

Fifty two percent of teachers reported being trained by PCI in schools across the project districts. The major areas of training were teaching reading, Zinduka methodology and conducting health screening of students. Thirty five percent of the teachers who had undergone the training programme were certified, whereas in comparison schools, only 5% of the respondents had undergone any such training. Nineteen percent of the total teachers in the project schools had received a non-monetary benefit in recognition of their work compared to 1% in comparison schools.

10.2. Teacher attendance

The overall attendance rate of teachers was assessed. Overall, 64.5% of project schools reported 80% of teachers attending more than 90% of the last 30 school days (similar to comparison schools, 67%) ($p > 0.05$, not significant). Teacher attendance rates were higher in the continuing schools than newly added FFE III schools, but the difference was statistically significant (FFE I = 68.6, FFE II = 61.5, FFE III = 59.2, $p > 0.05$).

10.3. Teaching methodologies

One key desired outcomes of the FFE project is to improve early grade teaching methodologies through a variety of good teaching methods that were assessed in this baseline study: scheduling reading time, creating reading lesson plans, using improved instruction methods, using learning aids and assisting slow learners (overview of results in Table 30 below).

Reading lessons lasted on average 35 minutes in both project and comparison schools, and teachers used similar methods such as choral reading, guided reading and out-loud reading as the main methods to teach reading to students.

Teachers in schools across project districts reported asking questions on the lesson as the most common method of assessment (26.9% comparison, 23.6% project). It was followed by monitoring students as they work (19.1% comparison, 18.9% project) and listening to students when the read aloud (17.7% comparison, 16.2% project). Only 7.2% of teachers in the comparison schools and 8.4% of teachers in the project schools used quiz or test as a method of assessment.

Teachers helped low performing students mainly by giving more exercises for practice (24.7% comparison, 25.3% project); partnering them with better performing students (27.5% comparison, 25.7% project) and giving them more time (23.9% comparison, 20.9% project).

Table 30. Proportion of teachers using desired methodologies to make reading effective

Teaching method	Comparison		Project		Phase I		Phase II		Phase III	
	N	%	N	%	N	%	N	%	N	%
Schedule reading time	99	99.0	99	99.0	52	100.0	15	93.8	32	100.0
Have lesson plan for reading	83	83.0	84	84.0	46	88.5	12	75.0	26	81.3
Choral reading	95	95.0	87	87.0	95	95.0	43	82.7	14	87.5
Guided reading	93	93.0	83	83.0	93	93.0	45	86.5	12	75.0
Shared reading	83	83.0	87	87.0	83	83.0	47	90.4	12	75.0
Silent reading	45	45.0	38	38.0	45	45.0	19	36.5	5	31.3
Out-loud reading	79	79.0	81	81.0	79	79.0	45	86.5	9	56.3
Naming beginning and ending sounds in a word	55	55.0	66	66.0	55	55.0	35	67.3	11	68.8
Blending sounds to form new words	67	67.0	66	66.0	67	67.0	35	67.3	9	56.3
Segmenting letter names and sounds	58	58.0	54	54.0	58	58.0	30	57.7	8	50.0
Word sorting	58	58.0	57	57.0	58	58.0	32	61.5	7	43.8
Pre-reading exercises, e.g. vocabulary	56	56.0	65	65.0	56	56.0	36	69.2	11	68.8
Re-telling the text	55	55.0	53	53.0	55	55.0	30	57.7	7	43.8
Finding the main idea	48	48.0	39	39.0	48	48.0	22	42.3	5	31.3
Shared writing, group writing and pair writing	54	54.0	57	57.0	54	54.0	32	61.5	10	62.5

Overall adoption of at least half of all the desired classroom teaching methods and providing slow-learner assistance was high; however, fewer than 30% of teachers were using at least half of the desired assessment methods and learning aids (Table 33). Teachers from FFE III schools had the lowest rates of adoption; for example, only 6.3% used at least half of the desired learning aids in the classroom.

An overall literacy instruction score was calculated based on how they performed across the following practices: scheduling reading lessons, having a reading lesson plan, adopting more than 50% of teaching methods, using more than 50% of assessment methods, using more than 50% of ways to help slow learners, and using more than 50% of the listed learning/job aids. Responses were converted into dichotomous variables and summed together to form the aggregate literacy instruction score and converted into a scale between 0 – 100.

Overall literacy instruction was slightly higher among teachers in project schools than comparison schools: 66% received an above average or high performing instruction score, compared with 62% in the comparison district schools. Teachers in schools continuing since FFE phase I scored highest overall, with 73.1% scoring above average or high performing. They were followed by new phase III teachers (68% scoring above average). Teachers in schools continuing since phase II scored lower overall than than counterparts in other phases, 37.6% scoring above average or high performing.

Table 31: Aggregate literacy instruction scores for teachers, by study area

Literacy instruction score	Comparison		Project	
	N	Column %	N	Column %
Low Performing (0-25)	0	0.0	2	2.0
Below Average Performing (25-50)	38	38.0	32	32.0
Above Average Performing (50-75)	41	41.0	46	46.0
High Performing (75-100)	21	21.0	20	20.0
Total	100	100.0	100	100.0

11. Teachers' Awareness of Health, Hygiene and Nutrition Practices

Overall, few (n=53) teachers have received training on preventative health practices during the current academic year. Among those who have, most were teachers in the project schools, especially in continuing FFE schools from phases I and II (Table 30). The proportion of teachers who received training on preventive health practices in the current academic year was 11% for comparison district schools and 6% in project district schools. Still, despite the small proportion trained, all teachers from both from project and comparison schools, were able to identify at least three good health/hygiene practices (n=200, 100%).

About 32% of teachers reported getting lunch in schools, compared with 4% of teachers in the comparison district schools.

Table 32: Proportion of teachers who received training on health and hygiene practices in the current academic year

Items	Comparison		Project		Phase I		Phase II		Phase III	
	N	%	N	%	N	%	N	%	N	%
Received training on preventive health practice (by PCI)	3	3.0	33	33.0	25	48.1	7	43.8	1	3.1
Received refresher training on preventive health practices in current academic year	11	11.0	6	6.0	5	9.6	0	0.0	1	3.1

12. Head Teacher Experience, Training and Performance

12.1. School management by head teachers

The head teacher plays a crucial role in the overall performance of a school. Therefore, a total of 100 head teachers (or a deputy head teacher, acting deputy head teacher, or academic head teacher when head teacher was not available) from project and comparison schools were interviewed to assess their leadership in both academic and administrative aspect (See Annexure 2 for sample details). Teachers in the project district schools were less experienced. Overall, 48% of project school respondents have been in their current position for a period of one to five years, compared with 62% in comparison schools.

Overall, 64% of head teachers had received training from PCI under the previous FFE program, more than 50% on school administration and Zinduka methods. Others have received training on library management, health screenings, commodity and store management and school gardening. All the head teacher across project schools are involved in monitoring the school's FFE project activities.

"Training on work plan and school development plan, has helped us in setting up a library in the school and cultivating in the school garden. It has also helped me plan better for the activities in the school. The trainings have helped to improve the overall cleanliness of the school."

- Head Teacher, project district school

During school visits, the use of various standardized tools for managing the day-to-day functioning of a school was assessed by direct observation: school timetable, academic year budget, weekly meeting plans, teacher's attendance record books, internal performance evaluation plan, school development plan, school committee member list, school supply register, and schedule for extra-curricular activities. The availability of school registers and other management tools varied project and comparison schools, although new schools added under phase III reported lower availability of records and registers compared with the continuing FFE schools (Table 33).

Table 33: Percent of schools that report having management tools available

Management tool	Comparison (%)	Project (%)	Phase I (%)	Phase II (%)	Phase III (%)
School timetable	100.0	98.0	100.0	100.0	93.8
School budget	34.0	56.0	65.4	50.0	43.8
Weekly meeting plan for teachers	84.0	66.0	65.4	87.5	56.3
Teacher's attendance book	100.0	98.0	100.0	100.0	93.8
Internal performance evaluation plan	60.0	36.0	42.3	37.5	25.0
School development plan	82.0	42.0	38.5	62.5	37.5
List of school committee members	98.0	94.0	92.3	100.0	93.8
Register of school supply	96.0	84.0	84.6	75.0	87.5
Schedule for extra-curricular activities	84.0	96.0	96.2	100.0	93.8

12.2. Head teacher leadership and involvement

Head teachers' leadership skills and their involvement with the teachers was assessed through the following:

- **Methods adopted to help teachers teach better:** A number of desired methods for improving the teachers' teaching have been adopted by the head teacher such as; communicating with teachers and students, encouraging teamwork among teachers, sharing knowledge with teachers, observing and providing feedback to teachers, ensuring teachers are trained and provided supplementary reading materials etc.
- **Meeting frequency between head teacher and teacher to discuss performance:** Frequency of meeting with their respective teachers during school.
- **Reviews the lesson plans:** The head teacher reviews the lesson plans prepared by the teachers and provides feedback.
- **Frequency of classroom teaching observations:** The head teacher observes the teacher at least once a month.
- **Methods adopted to improve performance of a low-performing teacher:** A number of desired methods are adopted by the head teacher, such as mentoring, pairing with a good performing teacher, organizing training, and providing teaching material for improving the teacher's performance.

Similar adoption of methods was reported by head teachers across all schools. Although classroom observations and meetings with teachers were not frequent, head teachers were more likely to use methods such as communicating frequently with teachers, encouraging teamwork among teachers and providing teaching materials/job aids to the teachers (Table 34). Although not likely to meet with teachers daily, most reported meeting once a week (78% project head teachers, 64 comparison district head teachers)

Our teachers are preparing lessons, they use participatory approaches and we observe pupils participating during lessons. Lessons are becoming more motivating with teachers spending extra time attending to pupils' problems.

- Head Teacher, project district school.

Head teachers in project schools reported communicating with students and parents more often than those in the comparison district schools.

Table 34: Proportion of head teachers who adopt desired methods to help teachers

Methods adopted	Comparison (%)	Project (%)	Phase I (%)	Phase II (%)	Phase III (%)
Communicating frequently with teachers to get feedback	19.4	18.7	19.1	20.0	17.4
Communicating frequently with students and parents to get feedback	6.0	11.2	10.9	8.6	13.0
Encouraging teamwork among teachers	13.4	18.2	16.4	22.9	18.8
Sharing knowledge with teachers	11.1	10.7	11.8	5.7	11.6
Observing and giving feedback to teachers	7.9	7.5	9.1	5.7	5.8
Ensuring teachers receive training	8.3	7.9	8.2	8.6	7.2
Facilitating training/ workshops for teachers	3.7	3.7	2.7	5.7	4.3
Providing teaching materials	12.0	10.3	9.1	8.6	13.0
Providing job aids/ teaching aids	13.9	8.4	10.0	5.7	7.2
Review their teachers lesson plans	94.0	82.0	92.3	87.5	62.5
Staying aware of current innovations in pedagogy	1.4	2.8	2.7	5.7	1.4

In some occasions it is necessary for the head teacher to help a low performing teacher. More than 50% of the head teachers across project and comparison schools reported using strategies such as mentoring/giving constructive feedback or pairing with well performing teacher to improve teaching among low-performing teachers. This often takes the form of providing mentorship and constructive feedback to low performing teachers, and occasionally pairing a low performing teachers with a well-performing one (Table 35). It appears that class size and teacher student ratios can lead teacher performance challenges, and head teachers recognize this challenge.

“Teachers are now better prepared for the classroom. They are sincere in preparing the lesson plans. They also spend a lot of time in giving time for the students. They are now better equipped in the 3Rs skills and they now use innovative methods of teaching.”

- Head Teacher, project district school

Table 35: Proportion of head teachers using desired strategies to help low-performing teachers

Strategies used to help low performing teachers	Comparison (%)	Project (%)	FFE I (%)	FFE II (%)	FFE III (%)
Inform district authorities	1.0	0.0	--	--	--
Scold/discipline teacher	3.8	4.9	5.3	8.3	3.0
Give low performance review	9.6	13.7	21.1	0.0	6.1
Mentor and give constructive feedback	36.5	41.2	36.8	50.0	45.5
Pair with a good performing teacher	20.2	20.6	15.8	25.0	27.3
Develop teacher improvement plan	4.8	3.9	5.3	0.0	3.0
Organize training	5.8	2.0	1.8	0.0	3.0
Provide teaching materials	13.5	10.8	10.5	8.3	12.1

The use of training materials and job aids for teachers was not reported by the head teachers as strategies for improving teacher performance; and interestingly, only 2.6% of schools reported receiving training materials on teaching reading.

13. Direct Classroom Teaching Observations

Classroom observations were performed in 100 schools across the project (50) and comparison (50) areas to measure the quality of literacy instruction, attentiveness of the students, preparedness of teachers, the use of teaching aids, strategies adopted by the teacher to make the lecture more effective and stationeries. The primary classes in these schools were observed (the majority of observations were in grade II), and Kiswahili reading was the most common subject observed.

The enumerators observed classroom organisation, instructional content, class activities, teaching and assessment methods, and use of teaching materials.

13.1. Classroom organization

Among classrooms observed, small group organisation was somewhat more common in comparison schools (36% vs. 26%), while paired groups were somewhat more common in project schools (54% vs. 42%). Within the project area, new FFE-phase III schools were observed to be least often organized (37.5% paired groups, 18.7% small groups observed).

13.2. Instructional content

Reading content, whether from books or other printed sources, was generally more comted material was more commonly observed in comparison schools than in project schools. (Table 36). This may be a reflection of a shortage of reading instruction materials, as noted by the schools assessments where only 15.6% of project schools reported receiving textbooks in the current academic year, and also mentioned as a factor in teacher performance during interviews with head teachers.

The issue is we have too many pupils in one classroom. There is shortage of teaching and learning materials and teachers. Our classroom infrastructure is poor...

- Head Teacher, project district school

Table 36: Observed classroom instructional content in 100 schools (50 project, 50 comparison)

Observed instructional content	Comparison		Project		Phase I		Phase II		Phase III	
	N	%	N	%	N	%	N	%	N	%
Identifies differences and similarities of sounds	43	86.0	45	90.0	23	88.5	8	100.0	14	87.5
Pronounces letter sounds	44	88.0	44	88.0	22	84.6	7	87.5	15	93.8
Writes letters	34	68.0	30	60.0	13	50.0	6	75.0	11	68.8
Associates words with letters	41	82.0	38	76.0	20	76.9	6	75.0	12	75.0
Discusses meaning of vocabulary words	28	56.0	29	58.0	12	46.2	5	62.5	12	75.0
Blends letter-sounds to form syllables and words	34	68.0	32	64.0	18	69.2	5	62.5	9	56.3
Reads full sentences (not just words)	25	50.0	24	48.0	12	46.2	6	75.0	6	37.5
Reads full story	20	40.0	12	24.0	6	23.1	2	25.0	4	25.0
Reads printed material or book (newspaper or book)	25	50.0	17	34.0	9	34.6	2	25.0	6	37.5
Answers questions about meaning of text, or draws picture to show they understand a text	21	42.0	20	40.0	9	34.6	4	50.0	7	43.8

Observed instructional content	Comparison		Project		Phase I		Phase II		Phase III	
	N	%	N	%	N	%	N	%	N	%
Writes words or sentences as dictated	19	38.0	22	44.0	12	46.2	4	50.0	6	37.5
Creates or writing own texts (sentence or story)	15	30.0	19	38.0	10	38.5	5	62.5	4	25.0
Speaks about own lives, events or stories	11	22.0	14	28.0	9	34.6	2	25.0	3	18.8

13.3. Class activities

The most common class activities (observed in almost every classroom across the board) were listening to the teacher read aloud, reading aloud on student at a time, repeating, and reading aloud together (Table 37). Playing learning games, skits or songs in class was generally common, although observed somewhat more often in FFE I continuing schools than others. Group projects were observed the least often across all classrooms.

Table 37: Observed class activities in 100 schools

Observed variables for class activities	Comparison		Project		Phase I		Phase II		Phase III	
	N	%	N	%	N	%	N	%	N	%
Listen to teacher read aloud	49	98.0	49	98.0	25	96.2	8	100.0	16	100.0
Read aloud together (choral reading)	46	92.0	46	92.0	22	84.6	8	100.0	16	100.0
Read aloud to another student (paired reading)	36	72.0	33	66.0	16	61.5	7	87.5	10	62.5
Read independently (by him/herself)	33	66.0	41	82.0	21	80.8	8	100.0	12	75.0
Read aloud one student at a time	48	96.0	47	94.0	25	96.2	8	100.0	14	87.5
Repeating or recitation	48	96.0	46	92.0	24	92.3	8	100.0	14	87.5
Answer teacher's questions	47	94.0	45	90.0	22	84.6	7	87.5	16	100.0
Write on blackboard	28	56.0	25	50.0	12	46.2	6	75.0	7	43.8
Write on paper, in exercise book or slate	19	38.0	29	58.0	15	57.7	6	75.0	8	50.0
Work on group projects	13	26.0	14	28.0	8	30.8	3	37.5	3	18.8
Play learning games, skits or songs	37	74.0	35	70.0	20	76.9	4	50.0	11	68.8

13.4. Teaching methods

Overall, reading aloud was almost always observed during classroom observations, as was asking students questions. Teachers also often gave assignments and concluded their lessons with a summary of what was learned. Reading in class, whether the teacher reads to the class or the students themselves read (choral, guided or shared), is a widely used teaching method in all schools. Less commonly observed, and therefore potentially less commonly adopted, is the teacher asking and allowing responses to questions in class (Table 38).

Table 38: Observed teaching methods in 100 schools

Observed variables for teaching methods	Comparison		Project		Phase I		Phase II		Phase III	
	N	%	N	%	N	%	N	%	N	%
Reads aloud to students	50	100.0	49	98.0	26	100.0	8	100.0	15	93.8
Demonstrates reading or writing skills	48	96.0	49	98.0	26	100.0	8	100.0	15	93.8
Asks students questions	48	96.0	48	96.0	24	92.3	8	100.0	16	100.0
Responds to student questions	32	64.0	32	64.0	14	53.8	6	75.0	12	75.0
Allows students to ask questions	27	54.0	27	54.0	13	50.0	4	50.0	10	62.5
Allows students to respond to questions asked by others	19	38.0	20	40.0	9	34.6	4	50.0	7	43.8
Provides explanation if students don't understand	46	92.0	41	82.0	22	84.6	7	87.5	12	75.0
Gives classwork to students and helps them if needed	39	78.0	43	86.0	23	88.5	8	100.0	12	75.0
Concludes lesson with learning summary	50	100.0	48	96.0	25	96.2	8	100.0	15	93.8
Praises or compliments students	42	84.0	42	84.0	23	88.5	7	87.5	12	75.0

13.5. Teaching assessment methods

Teachers were often observed using a several different teaching assessment methods across all schools; however, since less than a third of teachers have adopted at least 50% of methods (refer to previous section on Teaching Methods), it is possible that individual teachers rely on a limited set of mostly passive assessment methods (observing, listening), opening opportunity for teachers to more often adopt additional and more proactive methods, such as checking exercise books or homework, or giving a test or quiz more often (Table 39)

Table 39: Observed teaching assessment methods in 100 schools

Observed variables for teaching assessment	Comparison		Project		Phase I		Phase II		Phase III	
	N	%	N	%	N	%	N	%	N	%
Asking questions during the lesson	45	90.0	44	88.0	23	88.5	7	87.5	14	87.5
Monitoring students as they work to check understanding	47	94.0	45	90.0	22	84.6	8	100.0	15	93.8
Observing student activities	44	88.0	45	90.0	23	88.5	8	100.0	14	87.5
Listening to individual students read aloud	49	98.0	49	98.0	25	96.2	8	100.0	16	100.0
Asking students to tell about what they just read	43	86.0	46	92.0	22	84.6	8	100.0	16	100.0
Checking student exercise book or homework	22	44.0	30	60.0	17	65.4	6	75.0	7	43.8
Giving quiz or test to class	20	40.0	28	56.0	15	57.7	5	62.5	8	50.0

13.6. Teaching materials

Most of the classrooms in both project (98%) and comparison schools (96%) had blackboards. Student exercise books and slates were observed in higher proportion across classrooms in project schools (70%) than schools in the comparison district (44%).

Table 40: Observed teaching materials in classrooms in 100 schools

Observed variables for teaching materials	Comparison		Project		Phase I		Phase II		Phase III	
	N	%	N	%	N	%	N	%	N	%
Blackboard	48	96.0	49	98.0	25	96.2	8	100.0	16	100.0
Textbook	38	76.0	38	76.0	20	76.9	6	75.0	12	75.0
Reading books	29	58.0	24	48.0	14	53.8	4	50.0	6	37.5
Letter cards/flash cards	33	66.0	29	58.0	16	61.5	6	75.0	7	43.8
Poster/wall charts (with letters, words, pictures)	33	66.0	30	60.0	15	57.7	8	100.0	7	43.8
Supplementary reading resources	19	38.0	21	42.0	12	46.2	4	50.0	5	31.3
Work sheets	13	26.0	9	18.0	6	23.1	3	37.5	0	0.0
Exercise books/ slates	22	44.0	35	70.0	21	80.8	7	87.5	7	43.8
Manipulatives (e.g. real objects, sandbox, etc.)	14	28.0	13	26.0	8	30.8	4	50.0	1	6.3

14. School Infrastructure

The assessment of school infrastructure was done across all 100 schools (50 project and 50 comparison). The objective of the assessment was to observe the current infrastructure conditions in other areas of the school than the classrooms, such as the library, school gardens and meals, and toilets.

14.1. School library

Overall 46% of primary schools assessed had a library/reading room in the school compared with 22% of comparison schools assessed. This was driven by FFE I and II schools, of which 53.8% and 62.5% had a library, respectively, compared with only 18.8% of the new FFE III schools assessed.

Table 41: Observed library infrastructure (percent observed in 100 schools)

Library Infrastructure	Comparison (%)	Comparison (Valid N)	Project (%)	Project (Valid N)
School has library/reading room	22.0	11	46.0	23
School has a standard library	0.0	0	13.0	3
Reading corners	72.7	8	69.6	16
Mobile library	27.3	3	30.4	4
Library has book ledger	72.7	8	95.5	22
Students may borrow books from library	63.6	7	100.0	23

Schools in the project districts had more books for grade I students, with 39.1% of schools having 51-150 books, 8.7% having 151-250 books and 30.4% having 251-350 books. Meanwhile, 63.7% of schools in the comparison district had 0-150 books for grade I students. Within the project district schools, most of the books were noted with schools under phase I of the project. For grade II and IV students, 56.5% of schools across project districts had 250 books or more while 54.3% of schools in the comparison district had that many. Within the project district schools, most of the books were noted with schools under phase I of the project.

14.2. School gardens and meals

In project districts, 46% of schools had a school garden on school premises compared with 20% of comparison schools. As expected, more continuing FFE schools had school gardens than new phase III schools (FFE I = 53.8%, FFE II = 62.5%, FFE III = 25%). The most common vegetables grown were; spinach, cassava, egg-plant, okra and maize.

Similarly, 44% of project schools had a demonstration plot on school premises compared with 38% of comparison schools. Maize was the most common crop grown on these plots, followed by sorghum, potato and cassava.

Half (50%) of project schools had a kitchen on school premises compared with only 12% of comparison schools. Most of kitchens were constructed during phase I of the programme (FFE I = 65.4%, FFE II = 87.5%, FFE III = 6.3%). In some instances, schools that did not have kitchen were observed cooking food in classrooms or in staff quarters who lived close to the school. In some cases, the school feeding committee had given the responsibility of cooking to individuals, who in turn prepared food and delivered it to the school. Overall, 50% of the kitchens across both project and comparison schools had stock of food items meant for preparing school meals.

Food was stored off the ground in 91.7% with a kitchen in the project districts, while in the comparison district only 66.7% of schools did the same. Most notably, no signs of leakage/pilferage were observed in any of the project school kitchens, but leakage/pilferage was observed in 66.7% of the comparison school kitchens.

14.3. Toilet and drinking water facilities

A functional toilet for students was available in 74% of project schools assessed, compared with 62% of comparison schools. The highest number of functional toilets was observed in schools under phase I followed by phase II and then phase III schools. Within schools with toilets, 89.2% and 87.1% of project and comparison schools, respectively, had separate toilets for boys and girls. Most separate toilets were functional across all schools, an important factor for girls' school attendance.

"Prior to the uptake of the program the attendance rates in our schools were very low and the lack of toilet facility often discouraged girls from attending schools."

- Village Executive Officer, Project Area

Most toilets the project schools that were assessed are pit latrines with slabs, followed by flush/pour to pit latrines, but only 13.5% of flush/pour toilets were found to be connected to a septic tank. Similarly, the majority of the toilets in the comparison district schools were also pit latrines with slabs followed by flush/pour to pit latrines.

About half (48%) of project schools have handwashing stations compared with just 14% of comparison schools, and most of those (83%) had water upon assessment; however, only 20.8% had soap for handwashing. Somewhat fewer comparison school stations assessed had water (71.4%), but a higher proportion also had soap (42.9%).

The major source of drinking water for project schools is a pond or lake, followed by public well and rainwater. Meanwhile, comparison schools most often use public well and springs as their major sources of drinking water.

15. School Sustainability and Readiness Assessment

The ability to maintain project related activities and outcomes after the FFE project period has ended is of major importance to the FFE III program. To determine sustainability readiness, an assessment was conducted to assess the baseline level of readiness across project schools. The School Sustainability and Readiness Assessment tool was administered to 100 primary schools (50 project and 50 comparison schools). Target groups - head teachers, school committee members and local government officials – are assessed on their ability to manage their respective responsibilities, such as school administration, contributions and monitoring, and scores are presented as a percentage out of 100. Both the tool and the detailed sustainability and readiness scores are provided in Annexure 16 (Sustainability and Readiness scores).

Overall scores for project district schools were higher (64.3) than the comparison district schools (55.8; Table 42). Sustainability readiness scores for FFE I and II continuing schools' target groups (Table 43) were higher (69.1, 71.0) than for new schools in FFE III (53.3).

Table 42: Sustainability readiness scores across 100 schools

Area	Mean Sustainability Readiness Score	Min	Max	Std. Dev
Project	55.76	26.00	96.00	12.03
Comparison	64.36	26.00	94.00	14.68
FFE I	69.07	34.00	94.00	12.27
FFE II	71.00	48.00	88.00	13.48
FFE III	53.37	26.00	76.00	13.32

Table 43: Target group sustainability readiness scores across 50 project area schools

Target Group	Phase I	Phase II	Phase III
Teachers	36.0	35.5	28.5
Village/ community	4.3	5.2	2.8
School Committee	17.2	18.2	10.6
Ward/ Division officials	11.5	12.0	11.3
Total Score	69.0	71.0	53.3

16. Assessing the Programme through a Gender Lens

The gender analysis focused on understanding the gender roles, divisions of labour, access to resources, power equations and gender needs within a community. The triple role of productive, reproductive and community work of men and women at household and community level was measured against the main outcomes of the project. The impact of the project outcomes on time, labour, resources and cultural factors was analysed.

We used the Gender Analysis Matrix (GAM) to analyse and present the gender findings. Information for the gender analysis was captured through the 20 FGDs and Key Informant Interviews (KIIs) conducted in Bunda, Butiama, Musoma and Serengeti districts administered with farmer groups, parent groups and WE group members. The following table provides the distribution of interviews within project districts and across project/comparison districts. We used average school scores provided by NECTA to divide the schools into low, medium and high performing. The interviews were distributed across the three strata, as observed in the table below:

Table 44: Distribution of qualitative interviews with Farmer Groups

Farmer Groups

Sl. No.	Name of the district	Name of the Village	Corresponding Primary School(s)	Average Score of the School	Tools to be used
1	Musoma Rural	Muhoji	Muhoji	96.6 (Low)	Gender Analysis Matrix/24-hour tool
2	Musoma Rural	Wanyere	Wanyere	88.3 (Low)	Coping Strategy Index
3	Musoma Rural	Kusenyi	Kusenyi	135.2 (High)	Gender Analysis Matrix/24-hour tool
4	Musoma Rural	Kamguruki	Kamguruki	112.5 (Medium)	Coping Strategy Index
5	Bunda	Nyabehu	Nyabehu	99.0 (Low)	Coping Strategy Index

WE Groups

Sl. No.	Name of the district	Name of the Village	Corresponding Primary School(s)	Average Score of the School	Tools to be used
1	Bunda	Nyabehu	Nyabehu	99.0 (Low)	Gender Analysis Matrix/24-hour tool
2	Bunda	Buzimbwe	Buzimbwe	112.9 (Medium)	Coping Strategy Index
3	Butiama	Ryamisanga	Ryamisanga	105.9 (Low)	Coping Strategy Index
4	Musoma Rural	Kiriba	Kiriba B	110.3 (Medium)	Gender Analysis Matrix/24-hour tool
5	Musoma Rural	Kusenyi	Kusenyi	135.2 (High)	Coping Strategy Index
6	Musoma Rural	Bwasi	Bwasi B	136.3 (High)	Gender Analysis Matrix/24-hour tool

Parent Groups

Sl. No.	Name of the district	Name of the Primary School	Name of the Village	Average Score of the School	Tools to be used
1	Serengeti	Kenyana B	Kenyana	75.3 (Low)	Coping Strategy Index
2	Bunda	Busambu	Busambu	80.0 (Low)	Gender Analysis Matrix/24-hour tool
3	Bunda	Nansimo	Nansimo	85.7 (Low)	Gender Analysis Matrix/24-hour tool
4	Musoma Rural	Wanyere A	Wanyere	88.3 (Low)	Coping Strategy Index
5	Serengeti	Machochwe	Machochwe	126.3 (Medium)	Coping Strategy Index
6	Bunda	Rwabu	Rwabu	127.0 (Medium)	Gender Analysis Matrix/24-hour tool
7	Musoma Rural	Butata B	Butata	127.1 (Medium)	Gender Analysis Matrix/24-hour tool
8	Serengeti	Burunga	Burunga	142.4 (High)	Coping Strategy Index

9	Serengeti	Kono	Kono	144.1 (High)	Gender Analysis Matrix/24-hour tool
10	Serengeti	Kisangura	Kisangura	146.8 (High)	Coping Strategy Index

The different tools used for gender analysis have been described in the table below.

Table 45: Gender analysis components

Components of gender analysis	Definition/classification	Analysis Tool	Tool Used
Gender roles	These arise from socially perceived differences between men and women that define how men and women “should” think, act and feel. Gender roles are constantly changing and can vary between and within cultures.	24-hour day, GAM	FGD
Gender divisions of labour	Relate to the different work that men and women do because of their socialization, and to acceptable patterns of work within a given context.	24-hour day GAM	FGD
Access	Access to resources, influenced by gender roles and established gender divisions of labour.	GAM	FGD/KIIs
Power	Power relations have to do with the capacity of individuals and groups to initiate action and determine outcomes that change existing social, political and economic systems and norms. Understanding power relations is essential to equalizing gender relations.	GAM	FGD/KIIs
Gender needs	These arise from the four components cited above. Because men and women have different gender roles, do different types of work, have different degrees of access to services and resources, and experience unequal relations, needs of men and women are different. Practical Gender Needs and Strategic Gender Needs are distinguished and compared, to identify and address overall gender needs and options for meeting those needs.	24-hour day, GAM	FGDs

The analysis was done using the GAM and a 24-hour day tool. The GAM was chosen for this exercise because it is ideal for measuring gender status (perceptions/views) for planning purposes, and can later be applied to measure any change in various clearly-identified fields. Using the guiding principles above, they were asked to deliberate and complete the GAM tables using the signs (+), (-), or (?), to indicate their perceptions on the project initiatives, and how they think it will impact them in the future.

(+) sign denotes positive impact along with their reason

(-) sign denotes negative impact along with their reason

(?) sign denotes that respondents were not clear about the impact

This tool was primarily used to collect baseline data that can be measured again after various intervals (three to six months or more based on the project’s monitoring and evaluation plan). Results from this analysis can be tracked throughout the duration of the project to measure the change in the behaviour of men, women, boys, girls, families and the communities about the project outcomes listed below.

- Increased community understanding on the benefits of education for boys and girls
- Increased parents' and community participation in education of boys and girls
- Increased access to food (school feeding programme)
- Increased use of health and dietary practices

The GAM involved had four levels and categories for analysis:

Levels

- **Women:** This refers to women of all ages in the target group (if the target group includes women) or to all women in the community.
- **Men:** This refers to men of all ages in the target group (if the target group includes men) or to all men in the community.
- **Household:** This refers to all women, men and children residing together, even if they are not one nuclear family. Although household types may vary, even within the same community, people always know what constitutes their "household" or "family". This is the definition or unit of analysis that should be used for the GAM.
- **Community:** This refers to everyone within the project area. The purpose of this level is to extend analysis beyond the family/household to society at large. However, because communities are complex and usually comprise many different groups of people with different interests, if a clearly defined "community" is not meaningful in the context of the project, this level of analysis may be eliminated.

Categories:

- **Labour:** This refers to changes in tasks (fetching water from the river), level of skill required (skilled versus unskilled, formal education, training) and labour capacity. (How many people are there and how much can they do? Do people need to be hired or can household members do the task?)
- **Time:** This refers to changes in the amount of time (three hours, four days and so on) it takes to carry out a task associated with the project or activity.
- **Resources:** This refers to changes in access to capital (income, land, credit) because of the project and the extent of control over changes in resources (more or less) for each level of analysis.
- **Cultural Factors:** This refers to changes in social aspects of participants' lives (changes in gender roles or status) because of the project.

16.1. Narratives from the gender analysis

Overall the men, women, boys and girls who are the direct beneficiaries of this project indicated a **positive perception** regarding the intervention in terms of **labour, time, resources and cultural factors**. Barriers and enablers soon emerged as each group shared their own experiences of and what they believe the could be the benefits and challenges of the intervention. Most barriers stemmed from cultural factors and issues around labour and resources.

Table 46: Overall GAM summary

Groups	(+1)*	(-1)**	?***	Total number of responses
WE Group (3)	64	5	0	43
Farmer Group (3)	30	7	0	31
Parent Group (4)	172	8	4	184

*(+1) stands for a positive score

**(-1) stands for a negative score

***(?) stands for no clear answer

Table 47: GAM summary segregation

Groups	(+1)		(-1)		(+1)	(-1)	(+1)	(-1)	Total number of responses
	M	F	M	F	HH		Community		
WE Group	16	4	2	3	11	0	8	0	43
Farmer Group	5	6	1	4	8	0	7	0	31
Parent Group	50	48	4	3	16	3	80	0	184

As we can note from the tables above, respondents had a positive perception regarding the intervention, across male and female respondents.

Outcome: Increased community understanding of the benefits of education for boys and girls

Time: Fifty nine percent of the responses revealed that both men and women believe the project will assist them with many aspects of time management. They believed that the project will allow them to have more free time. Both men and women said that they would have more time to farm, attend school meetings (90% responses), attend and fully participate in specific projects components such as building school kitchens and tending the school garden. WE group members noted that that they could now concentrate on developing other small Income Generating Activities (IGAs). They found that the project has and will assist in better time management at an individual and household level. Others, especially female members, cited having extra family time on the school feeding days as an added advantage.

Labour: Due to the project activities, men and women mentioned that there is now a better division of labour since the project started, and they perceive that this will improve even more with time. Women members reported that were taking an active role in supporting their husbands within their WE groups. Women members also believed that the project would enhance the academic performance of their children because of the school feeding programme. Women in the 3 groups mentioned that while they usually contributed firewood, others provided bricks to build the kitchens and others supplied maize and beans (from Farmer Groups). Members in the Farmer Groups (FG) perceived that their farming skills would improve and that under Phase III of the programme their expected their yield to increase.

Male members, on the other hand, concentrated on livestock farming and fishing, as well as crop cultivation as a part of the FG. Interestingly, labour chores that were not stereotypically for men included the collection of firewood, cooking, and horticulture, as these were viewed mainly as women's roles. This is evidenced in the 24-hour day activity profile (Table 72). In the WE group, for example, five out of 7 (71%) of the perceptions recorded showed that women do not swim or fish, or buy and sell livestock. Hence the division of labour is clearly demarcated between these tasks, and gender training in gender roles and biases should be included in the role out of Phase III, especially if the project diversifies and promotes fishing for both men and women.

One negative factor identified by the women in the Farmer Group was that currently, due to limited water sources, fetching water has been and will be an issue if not addressed by this programme. Extra time, effort and work was needed to ensure that the school, family and community have access to potable water, and the majority of interviews mentioned the need to have irrigation schemes to mitigate this problem.

Resources: Two thirds (60%) of responses in all three groups reported that the project, in its earlier phase, increased income for both men and women, and this had a ripple effect at the household and community levels. Men and women in the FGs cited that because of the increased yields, economic capital was strengthened, which then gave them more time to look into starting new businesses. Some challenges all groups mentioned was that the project has not promoted fish farming, there is poor-quality seed in some villages, and that the lack of dependable water sources decreases crop yields. Modern farming techniques that were being shared with the farmers through demonstration plots have been a positive intervention and should continue in phase III.

Due to increased income in some households, parents are now able to purchase scholastic materials (for example textbooks, uniforms), so that they can contribute to the education (strategic needs) of both boys and girls; it was clear from all 40 KIIs (95% students, 100% Head Teachers, 92% LGA Officials) and all FGDs, that both boys and girls should be treated equally when it comes to education, and that all should have access to quality teaching and a conducive school environment.

Culture: The community agreed that equal access to quality education is an advantage in the future, whereby both boys and girls will support them in their old age if they have an education. However, in the control district, one parent in the parent group said that he was waiting to marry off his daughter so that they could access the dowry and improve their living status. Early marriage is an issue in several of the districts in Mara Region, more prevalent in Serengeti (Maasai tribe) and Tarime (Kuria tribe), and less in the project area. Another challenge that the parent group mentioned was that girls in their community are not allowed out of the homestead after 6:00 pm, meaning this would hamper any project plan to include girls in remedial classes especially for children with special needs.

Empowerment of men, women, boys and girls: Approximately 65% of the responses in the parent group described the empowerment of men, women, boys and girls, to be of paramount importance, and therefore a positive aspect of the programme; in their view, boys and girls should be treated equally, have access to improved learning environments and trained teachers and participate in their own development. The respondents view this as a future benefit to the next generation to come.

Social awareness was listed as a community response in this same group, and even though it was not clear what the key issues were, it was evident that developing the communities within the villages and wards were prioritized. One parent group mentioned that they had advocated the local government authorities and parliamentarian officials for the completion of additional classrooms and this became a reality; men and women felt empowered to raise issues, take them forward and contribute to their families' future. One other farmer group worked closely with the Village Chairman to bring about a lasting solution to major issues regarding coping strategies and conflict management; they foresaw that the project would contribute to improved relationships at the household (married couples and their families) and community levels.

Mara region is known for its patriarchal culture, and such statements reveal that change regarding socialization is happening, albeit, slowly. The project as viewed by the respondents will continue to contribute to this change as it has meant that men and women work more closely together.

Outcome: Increased access to food

Time: Women in the WE groups mentioned that the school feeding programme gave them time to focus on household chores. Thrice a week, they do not concern themselves with cooking for their children who are fed at school. They agreed they would contribute and pay for the security guards and the cook.

Labour: It was worth mentioning that most of the parent group members interviewed were members of the School Committee, and they strongly influenced the development of the school feeding programme. This means that the school feedings are positive aspects of the project and that it will benefit the community. Agendas discussed in some of the meetings included how much food was to be contributed by the WE and FG groups, better ways of cooking food so that the nutritional value is enhanced and contributions made to the school towards groceries (one group mentioned sugar). Though contributing to school feeding programme and overall school activities can seem as an increase in the labour for parents, it was considered as a positive aspect as encouraging and supporting education is seen as a positive social norm.

Resources: Respondents from parent groups, WE groups and FG groups observed that an increase in household income resulting from the programme interventions meant that men and women in the groups

would be able to support the school feeding programme. Improved economic status was mentioned by all groups (50% responses in the WE groups, 40% in the FG groups and 23% in the parent groups).

Culture: The Wagita tribe that is prevalent in the four Districts in this project do not have any cultural bias towards abstaining from certain foods for boys, girls, men and women. Unlike in other communities in other regions, their main concern has been to ensure that all boys and girls in schools have enough food to eat and that they are getting the nutritional value required.

Outcome: Increased use of health and dietary practices

Time: Respondents, especially women, mentioned that the project gave them allowance to restructure their activities over a 24-hour period, and ensure that they can tend to the health needs of the children. According to the parent group responses, 25% revealed that at the individual and household levels, more time was now available to take children to the health centres for check-ups, pregnant mothers could attend pre-natal clinics, and the community as a whole were aware of the importance of child health. School water, sanitation and hygiene were listed by all groups and key informants as a positive aspect of the project and the building and maintenance of toilets meant that disease outbreaks were drastically reduced. Similarly, some of the parents knew of the various health and hygiene standards as a result of training received since the project inception. The parent group also reported that the school committee meeting agendas included SWASH as a key discussion topic and community contributions were also deliberated.

Labour: Respondents perceived that the FFE programme creates an equitable division of labour and allows parents (both men and women) to participate in the school development plans. The parent group members supported the school development plans that included activities such as improved hygiene training, dietary practices and farming techniques that all contributed to the overall wellness of boys and girls attending school. Some head teachers and local government officials cited good hygiene standards as a contributing factor to the improved attendance of pupils in several of the wards. Latrine construction and maintenance has been and will continue to be a positive aspect of this project, supported by increased access to potable water. The increased involvement of parents and students in school activities might seem as labour intensive, but was perceived positively by respondents as contributing to school development plan and activities was seen as a positive social norm.

Resources: Adequate nutrition was listed as the most positive response within the school feeding programme. Half of responses in the WE groups, 40% in the FG groups and 24% in the PG mentioned nutritional benefits for boys and girls as an added advantage for future programming and a majority of respondents, especially women were willing to contribute to the school feeding programme. However, there was no clarity among the respondents on the amount of resource to be contributed for school feeding programme. Respondents also strongly believed that with the right amount of nutrition, the pupils' academic performance improved, and will continue to improve. The use of toilets and availability of clean drinking water for students would help reduce the incidence of illness in the community, which can in turn reduce the overall medical expense in a household.

Cultural factors: The Parent Group mentioned that cleanliness was highly valued in the project area communities. Respondents reported that a positive aspect of the programme was that it strengthened already-existing societal norms of hygiene standards. One head teacher mentioned that at one point, his school was shut down due to a cholera outbreak, increasing the absenteeism rate. However, after the toilets were constructed, children felt safe using the pit latrines (earlier on, a child had fallen into one due to the unstable structure).

16.2. Gender Analysis Matrix for FFE programme

The perceptions of respondents have been summarized in the Gender Analysis Matrix below:

Table 48: Gender Analysis Matrix for the FFE programme

Level	Labour	Time	Resources	Cultural factors
Men	(+) Involvement in the school committees and farmer groups (+) Involvement in more income generating activities as a part of WE/FG group	(+) Extra time available for family due to less engagement in cooking/fetching materials (+) More time for attending school meetings (+) Extra time for income generating activities (+) More time to address healthcare issues	(+) Increase in income (+) Increase in economic activities (+) Improved nutrition level among children (+) Decrease in illness, reduction in medical expenses	(-) Men do not engage themselves in horticulture, collection of firewood and cooking
Women	(-) Effort required for fetching water (+) Collection of firewood for school feeding program (positive social norm) (+) Engagement in school garden (positive social norm)	(-) Extra time required for collecting water (+) Get more time for engaging in income generating activities as a part of WE groups	(+) Improved nutrition level in children (+) Improvement in household income levels	(-) FFE programme does not support fishing (-) Unequal access to resources as women are not allowed to do fishing. (-) Women are not engaged in buying or selling of goods. (-) Child marriage
Household	(+) Better division of labour between men and women, pertaining to involvement in school developmental plan	(+) Extra time for family interactions and planning (time saved due to school feeding programme)	(+) Improved nutrition and health of the family (+) More resources for buying scholastic materials for kids (+) Improved academic performance of children (+) Improvement in the farm production levels	(-) Fishing is mainly men oriented work and women are not allowed for it
Community	(+) Friendly environment in the community because of more interactions (+) Frequent presence in the SWASH meetings (+) Engagement in the school infrastructure building activities	(+) Extra time available for attending meetings	(+) Improved awareness on health and hygiene (+) Improved literacy levels (+) Improved nutrition levels for the school going children (+) Improved sanitation facility in the schools (+) Improved focus on cleanliness	(+) Opinion of both men and women is equally valued at the village meetings (+) Improved focus on cleanliness (-) Travel during evening is not preferred

16.3. Analysis of 24-hour tool for men and women

The following is the summary of the 24-hour tool administered to men and women in various groups.

Table 49: 24-Hour tool for men and women

Time-Period	Men	Women
Mornings (0600-1200)	Fishing	Cook, fetch water
	Livestock herding/farming	Clean
	Farming (takes longer during harvest period)	Farming (takes longer during harvest period)
Mid-day (1200-1500)	Eat a meal	Prepare and eat after their male partners
Afternoons (1500-1800)	Fishing/farming	Farming
Evenings (1800-2100)	Return home	Return home, cook clean, milk cows
	Eat	Wash dishes/attend to children's well-being
Night (2100-0600)	Sleep	Sleep

It is apparent that the work load for women is much heavier than that of the men. One note-worthy aspect was the fact that none of those groups interviewed mentioned their role in assisting their child/children in doing homework, an area that needs to be supported during this programme. The boys and girls in each household assisted in farming during harvest time, with less time to concentrate on their education.

In these communities, women normally did not fish but waited for the men to bring in the catch, after which the women would prepare (dry, fry) and sell the fish as perishables in the market place. Similarly, women did not play an active role in livestock keeping, tending and selling, as this is the sole task of the men. Many mentioned that because there is now a school feeding programme, they have more time to spend on farming, tending their herds and contributing to the school feeding programme (buildings, bricks, produce). They reported that on average, they contribute up to 100 kilograms (Kgs) per harvest season.

16.4. Analysis of 24-hour tool for boys and girls

The following is the summary of the 24-hour tool administered to boys and girls across schools.

Table 50: Daily activity comparison between boys and girls in the project area

Time of the Day	Girls	Boys
Mornings (0600-1200) Mid-day (1200-1500)	Waking up, refreshing	Wake up
	Doing domestic chores	Cleaning of house
	Going to school and cleaning of the school compound	Cleaning of school
	School classes	School classes
Afternoons (1500-1800)	Lunch	Lunch
Evenings (1800-2100)	School classes	School classes
Evening	Do household work such as fetching water, cleaning house, refreshing themselves, cooking, personal studies	Playing, taking cattle grazing, milking cows, studying and resting
Night (2100-0600)	Sleeping	Sleeping, Studying

The comparison of various activities that boys and girls are involved in doesn't show any difference until the afternoon. Both boys and girls spend the majority of the time until afternoon in their schools. There is a difference in the kind of work that boys and girls do after coming home in the evening. The girls mostly engaged in the cleaning work and a few study at home. The boys, on the other hand, spend this time for playing, cattle grazing, etc. The night time is devoted to personal studies and sleeping.

Table 51: Daily activity comparison between boys and girls in the comparison district

Time of the Day	Girls	Boys
Mornings (0600-1200)	Time for personal cares viz. Brushing, bathing, etc.	Personal Care and Going to School
	Cleaning the school compound and homes	Cleaning school
	School Classes	School Classes
Mid-day (1200-1500)	Lunch	Lunch
Afternoons (1500-1800)	School Classes	School Classes
Evenings (1800-2100)	Going back home, resting, having food, utensil cleaning, fetching water	Cattle grazing, fetching water, resting and playing
Night	Personal study time and sleeping	Personal study time and sleeping

A similar trend for boys and girls was observed in the comparison area. Until the afternoon, time is devoted to activities and classes at school. After coming back from school girls are mostly engaged in doing household chores whereas boys are involved in activities such as cattle grazing, playing, and resting. The night time is devoted to sleeping and personal studies.

16.5. Barriers and enablers for the project

Table 52: Barriers and enablers for the project

Enablers	Barriers
Men and women working more collaboratively together in the 3 groups (FGs, WE, parent groups)	Women prohibited to fish or make any decision on livestock buying and selling
Due to the programme, there is now a more equal division of labour between men and women with added benefits	Women still 'silenced' by men with low participation of women in meetings
Increased household income due to increased crop yield	Limited access to potable water which means women need more time to fetch water. The project needs to identify activities that would support increased access to potable water at minimum cost so that the women's work load is reduced as the project proceeds into Phase III.
Project allows for extra time for men and women to conduct other activities (noted especially on school-feeding days)	Limited access to markets for both men and women for their produce/crops after harvest
The most valued trainings were farming techniques, nutrition, SWASH.	Limited agricultural inputs (fertilizers, tractors, improved seed) in some cases for both men and women.
SWASH components (especially toilets) an added advantage for girls especially in supporting menstrual hygiene and general cleanliness	Gender stereo-types still exist in these communities

Enablers	Barriers
Increased participation of men and women in school meetings are more meaningful with clear agendas guided by the SDP	Not mentioned by the respondents but observed: - Limited child protection interventions - Limited child participation (See section on recommendations below)
PTPs/collaboration is regular in most cases	
LGAs (Agricultural Extension Officers, WECs, WEOs) working towards addressing both practical and strategic needs of men and women in the community	
Community contributions (both men and women) were a real benefit to the school (school feeding programme)	
Both men and women perceive child rights and equal access to quality education of both boys and girls is a priority and supports academic performance of both.	
Zinduka club for boys and girls an advantage and promotes equal participation of boys and girls	
Government Education and training policy promotes parent contributions	
Tanzania Institute of Education now rolling out Gender Responsive Pedagogy	

16.6. Gender based recommendations

Recommendations for mainstreaming gender in FFE III:

- Gender and inclusion: sensitization and mobilization of project groups and broader community should be promoted in Phase III of the programme
- Policy influence –
 - Gender responsive Pedagogy (GRP) is already being rolled out by Tanzania Institute Education (TIE) in pilot regions (in EQUIP-T catchment areas). FFE programme can support the government efforts and mainstream gender in the teaching and learning practices that address gender issues. Three areas that are observed in GRP include response of boys and girls to various teaching methodologies, addressing all types of harassment in and out of class, and teachers' capacity to use textbooks using a gender lens despite the edition and/or subject material.
 - Education and Vocational Training Policy 2014 (ETP) –
 - Community participation is paramount to the development of the schools in the project area. One supporting policy is the ETP, whereby community contributions are allowed and even promoted to a certain extent. What has been mentioned is that parents are able to contribute building materials to a certain extent and the government is to complete school structures (a third of the structure plus roofing); similarly parents are encouraged to provide scholastic materials and uniforms, but no more than that; hence advocacy and community sensitization on this policy should be encouraged in Phase III of the program.

- The approach recommended is Community Based Performance Monitoring (CBPM) model for advocacy whereby men, women, boys and girls are given an opportunity to conduct an assessment of their school, identify the strengths and challenges, and then call for constructive dialogue with service providers should there be any major issues (e.g. discrepancies in capitation grants, lack of government support for promoting sustainable methods for SWASH, and school feeding and improved teaching methodology, whereby LGA funds are not properly channeled to support school development and leadership (more classrooms/teachers houses built, timely disbursement of capitation grants, decrease in questionable expenditures at LGA level)).

Increased child participation and protection in project activities

- Zinduka clubs (and others such as JUU club – EQUIP-T, health and sanitation clubs) already exist and have proven to be the right avenue to promote equal participation of both boys and girls. In Phase III, it is highly recommended that the children received gender and child rights training, as none of the students interviewed mentioned this component as part of their school activities.
- School gardens should be promoted in phase III with an active role taken on by HTs to engage men and women in the groups (Parents, WE and FG) in their development. Capacity building on nutrition should continue as it has positive benefits to both boys and girls as mentioned by the respondents.
- Special consideration should be made to raise issues of child protection and increase the involvement of adult men and women, community leaders and the government (see proposed structure below). The government is piloting child protection response system strengthening activities in Lindi Region supported by Save the Children and this model is worthwhile considering.
- Community groups should take more of an active role in pupils' performance and make time in their schedules for supporting their children's homework and overall academic development.

System strengthening to support gender integration, mainstreaming and sustainability

- Role of LGA regarding gender and inclusion should be strengthened in Phase III and a cohort trained in gender and development. Potential targets for such trainings include the Community Development Officers (CDOs), Social Welfare Officers (SWOs), Agricultural Extension Officers, WECs, WEOs, VEOs and the Quality Assurers (QAs). The current QA school monitoring tools revised by the government is gender-sensitive and the project in Phase III should make a strong effort to work even more closely with QAs during monitoring visits to the schools in the wards using this revised classroom observation tool
- Role of the community should be enhanced and awareness raised on various gender issues such as early marriage; engage in cross-learning with control areas like Serengeti and other districts outside the project area such as in Tarime on how to engage men and boys in addressing gender violence and discrimination.

Project staff should be trained in gender and inclusion, and supported by the QAs during monitoring visits to enhance sustainability once the project has phased out.

17. Household Food Insecurity

The coping strategy index (CSI) tool was administered with an objective to measure the extent of food security in the area (WFP, 2008). A series of questions were asked to understand how households manage to cope with a shortfall in food for consumption. A series of 12 most commonly practised strategies was listed and the members of the groups were asked to respond to two parameters i.e. frequency of the coping behaviour and the severity of the strategy that was adopted. Each of the individuals was asked “How often in the past seven days, had the household relied on the listed strategy?” to measure frequency.

The response ranged between 0 to 7 days in a week. The severity for each of the strategy refers to how serious/extreme a group/individual thinks a strategy is. The severity scale ranged from 1 to 4 with 1 referring to “least severe” and 4 referring to “extreme severity”. The individual responses of each of the group member on the frequency of a strategy was collected and the average of all the respondents was taken to calculate the mean frequency of a strategy. The mode of the severity score across the group was considered to arrive at the severity score of a strategy.

For a strategy under consideration, the mean frequency was multiplied by the severity score to arrive at the overall weighted CSI score. The sum of all the individual score for each strategy was taken to arrive at the Coping Strategy Index (CSI) score of the group. A higher score refers to a serious condition of food insecurity. It signifies that a group/household has adopted severe means of coping very frequently. On the other hand, a lower score refers to a lower reliance on the coping strategies listed. The coping strategy tool was administered in 12 different groups of parents, WE group members and farmer groups. The coping strategy tool was administered to parent groups in both project and comparison districts whereas for the farmer and WE group it was only administered in the project district.

18. Coping strategies to reduce food insecurity

A frequency comparison of the widely used coping strategy index (CSI) was done by scoring category. A CSI score above 50 is considered high and a score below 50 is considered low. Higher CSI scores denote the use of drastic measures adopted by the household such as skipping meals for entire days. The most commonly used coping strategy refers to the one which was reported by the high CSI scoring groups for at least 3 days in a week. This was compared with the frequency of the same strategies in the low scoring region.

Overall, the most commonly used strategy adopted in the comparison area was *limiting the size of the meals* and the average frequency for this was 7 days a week. The next most reported strategy was *reliance on less preferred or less expensive food and restricting the consumption by adults for feeding the children*.

The average CSI score for groups in project districts was better than the groups in the comparison district meaning that families in project districts faced a lower risk of food insecurity and therefore relies less on the coping methods. Across comparison districts, CSI scores signify that the Kisangura group members are most vulnerable to risks arising from the lack of food (Table 53), followed by the farmers in Kamguruki.

Table 53: Parent Coping Strategy Index scores

Village	Ward	District	Project/Comparison	CSI Score
Wanyere	Suguti	Musoma Rural	Project	28
Butata	Bukima	Musoma Rural	Project	14
Kenyana	Ring'wani	Serengeti	Comparison	4
Kisangura	Kisangura	Serengeti	Comparison	117
Machochwe	Machochwe	Serengeti	Comparison	82
Borenga	Kisaka	Serengeti	Comparison	66

Table 54: Farmer group CSI score

Village	Ward	District	CSI Score
Kamguruki	Nyakatende	Musoma Rural	80
Nyabehu	Guta	Bunda	15
Wanyere	Suguti	Musoma Rural	6

A comparison of the average frequency of the most common strategy was taken for high CSI scoring groups and low CSI scoring groups. The high CSI scoring groups are the ones with a score above 50 and the low CSI scoring groups are the ones scoring below 50. A comparison of the strategies shows that the most common strategy was *reliance on less preferred or less expensive food and restrict the number of meals that is consumed*. It was adopted for 5 days out of the 7 days. The *purchase of food on credit* was adopted for 3 days out of 7.

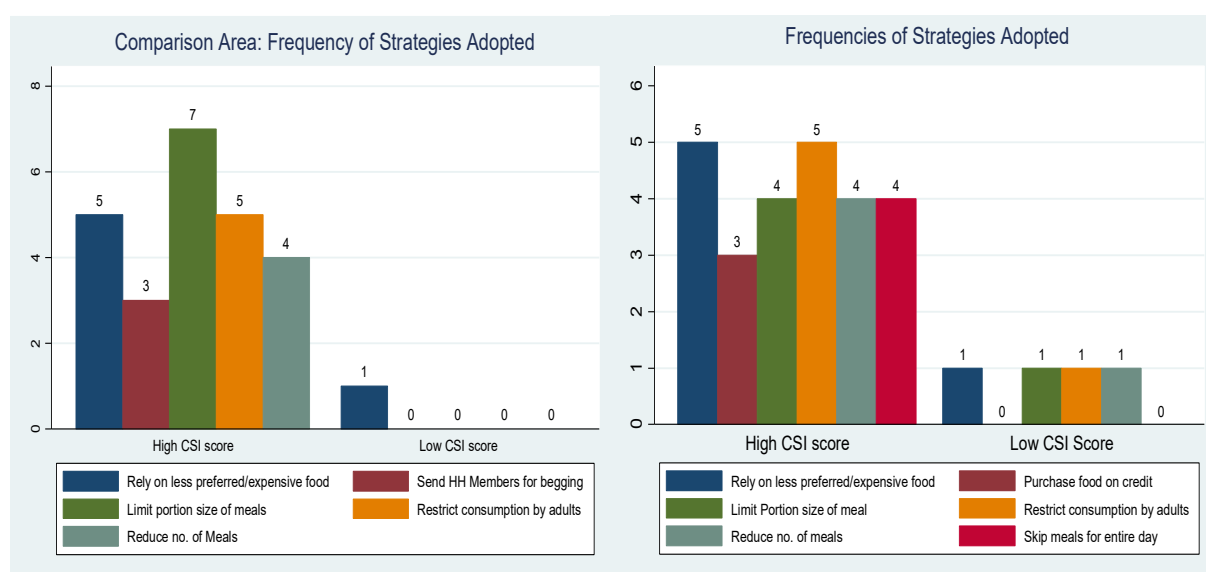


Figure 18: Frequency of coping strategies adopted for parent groups (left) and farmer groups (right)

A comparison of CSI scores among those who have been a member of a FFE WE group show that no groups assessed scored CSI above 50 (Table 55).

Table 55: CSI Score for WE groups

Village	Ward	District	CSI Score
Buzimbwe	Butimba	Bunda	21
Kusenyi	Suguti	Musoma Rural	13
Ryamisanga	Bwiregi	Butiama	19

An analysis of the frequency of a strategy being adopted shows that the most frequently adopted coping strategy was *reliance on less preferred or less expensive food items*. The average frequency was 2 days in a week.

“We did not have enough food due to the condition of drought in the area. This often created the problem of food in the family. However, the involvement in the group has helped us overcome this challenge. We could take a loan from the group and invest in income generating activities. This helped us meet the requirement of food”

- WE Group Member, Kusenyi

19. Converging Key Findings

The key findings from the previous components have been converged using the Development Assistance Committee (DAC) criteria questions to provide a snapshot at the existing socio-economic landscape for the FFE programme. The DAC evaluation criteria consist of 5 key areas of inquiry for an intervention; *design, relevance/coherence, performance/efficiency, effectiveness and sustainability* (OECD, n.d.).

This section aims to break down the emerging findings using the DAC components. Since the evaluation is ex-ante in nature, the study team will not be able to comment on certain DAC components such as *effectiveness and efficiency*. Rather, this section focusses on *relevance, and to some extent the performance and sustainability* of the project.

19.1. Relevance and performance

The FFE III programme provides a range of bundled interventions with the overall aim of improving learning outcomes among children, especially in early grades. Early grade learning outcomes are critical because without the basic ability to read and understand simple text, there is little chance that a child will be able to escape the intergenerational cycle of poverty (RTI, 2009). To support the learning outcomes among early grade children, the FFE III programme plans to provide school meals, build/rehabilitate toilets in primary schools, train teachers on new teaching methodologies, build/rehabilitate wells and water stations in schools; form farmer groups to support school feeding initiative, form WE groups to strengthen livelihoods, establish school gardens and demonstration plots, provide textbook and non-textbook materials to schools, train students and teachers on dietary/health and hygiene practices and increase the overall awareness of the importance of education (see Annexure 1 for FFE III causal pathways).

The interventions designed by PCI for the FFE III programme are appropriate and respond to the critical issues highlighted during the baseline assessment. The school feeding programme has been successful in increasing the overall attendance among students in Mara region. As reported by District Education Officers, the programme is an effective way to increase the overall attendance of students and bring the community together. However, despite efforts by the government, only 50% of schools in project districts and 12% of the schools in the comparison district had a functioning kitchen to cook school meals. One of the major issues has been bringing the community together to contribute to the school feeding programme, but in the absence of policy guidelines or mechanisms other than voluntary contributions, the participation of parents has been relatively low.

In this backdrop, the FFE III programme aims to introduce a mixed model of providing school meals directly to the students thrice a week and create link with farmer groups to support the programme at a community level. In addition to farmer groups, the FFE III programme also aims to develop school gardens for students and teachers to grow food commodities and demonstration plots within the school premises to train farmers on diversifying their crop production. This multi-staged strategy is aimed at creating sustainable and community driven mechanisms to support the school feeding mechanism, even after the exit of FFE III programme.

In addition to school feeding, interventions such as the building/repair of water stations and toilets enable a child to practice healthy and hygienic behaviours. In addition to creating infrastructure, the FFE III programme also plans to provide training on health, hygiene and nutrition to students and teachers as a part of softer behaviour change communication approach. The programme also plans to provide textbooks/study materials and non-study materials such as stationery to the primary school, and to train early grade teachers on innovative teaching methodologies to improve the quality of their instruction.

The overall gamut of interventions within the FFE III programme is strengthened by the involvement with and support of the national, regional, district and local government offices. At the department level, PCI works with the Department of Planning and Development; Community Development; Health; Education and Agriculture and Livestock and Fisheries to implement the interventions at the school level. As noted during qualitative interviews with the department officials, the FFE programme has engaged the local actors effectively and continues to do so.

PCI plays an important role in meeting my department's overall goal of improving education in the district. We look forward to supporting and working with PCI officials in this third phase of their project.

- District Education Officer, Musoma

19.2. Sustainability

Local actor engagement and commitment to ensure sustainability

PCI has successfully engaged local government officials in the day to day operations of the FFE programme. PCI works with the national, regional, district and local government offices to ensure government involvement and support. At the department level, PCI works with the Department of

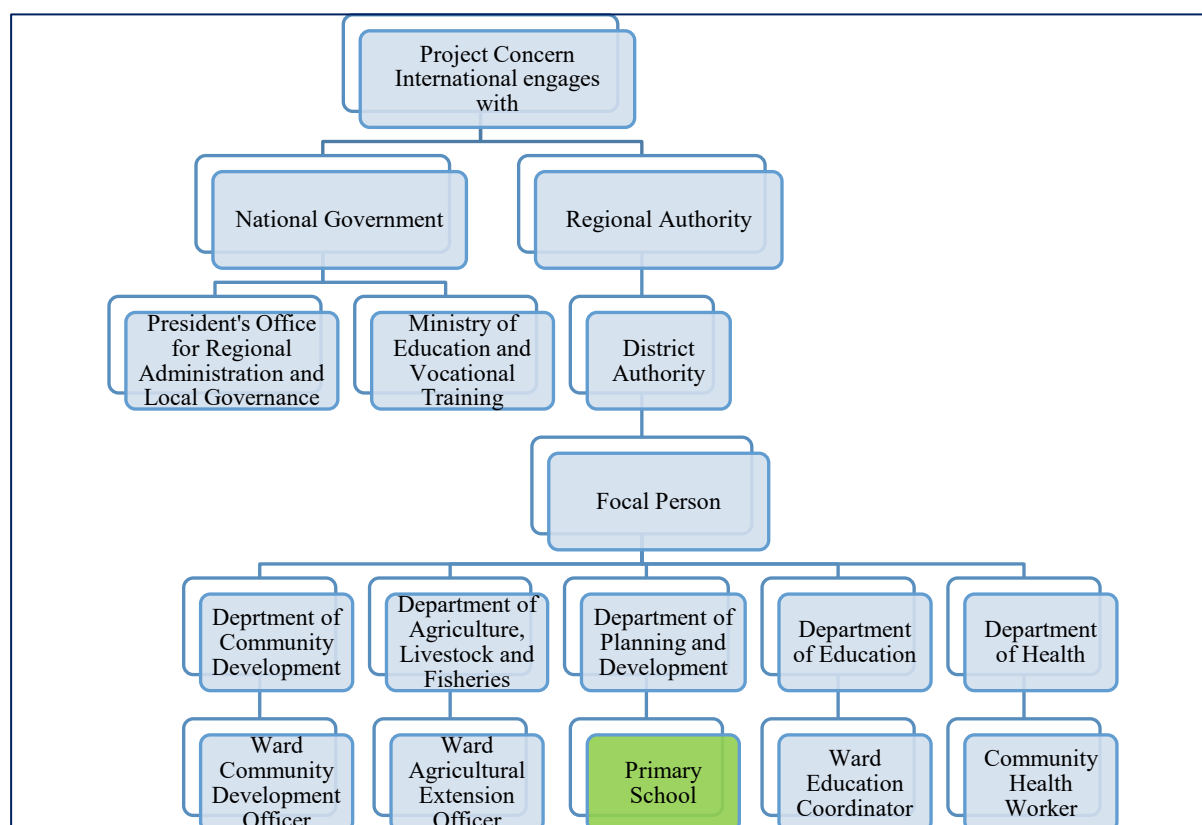


Figure 19: Organogram depicting PCI's engagement with national and local actors

Planning and Development; Community Development; Health; Education and Agriculture, Livestock and Fisheries to implement the interventions at the school level.

PCI provides District officials and focal persons with regular updates on the progress of the intervention. District and regional focal persons have also been trained in several areas such as monitoring of the programme, innovative teaching methods, implementation planning and strategy, etc.

In addition to district officials, PCI also interacts with ward and village level officials for community led monitoring efforts. Ward officials such as Ward Community Development Officer were engaged by PCI to support the WE group formation and registration, while Ward Education Coordinators support PCI in coordinating the training of teachers and school feeding programmes. In addition to government actors, PCI also partners with like-minded non-governmental organizations. During the baseline data collection, PCI officials noted that they had requested organization such as Right To Play to provide training of trainer sessions on innovative teaching methodologies.

Partner-provided in-kind support for school feeding activities

The school feeding activity by PCI engages both government and community members for concerted action. In FFE phase II, school lunch was provided to students thrice a week that consisted of rice, beans and oil. For the remaining weekdays, the school committee and community members were encouraged to contribute in cash or kind (food commodities).

FFE phase III follows the phase II setup, with PCI providing food three days in a school-week. Food commodities are provided to the school head teacher and school feeding committee for monitoring and preparation of school meals, and community members are encouraged to contribute to provide meals on the other days.

The state actors/government supports the school feeding programme by providing tax exemptions on the import of food commodities by PCI and by providing administrative support for the smooth distribution and monitoring of the commodities. Figure 35 provides a snapshot of the in-kind support provided by the state and community actors.

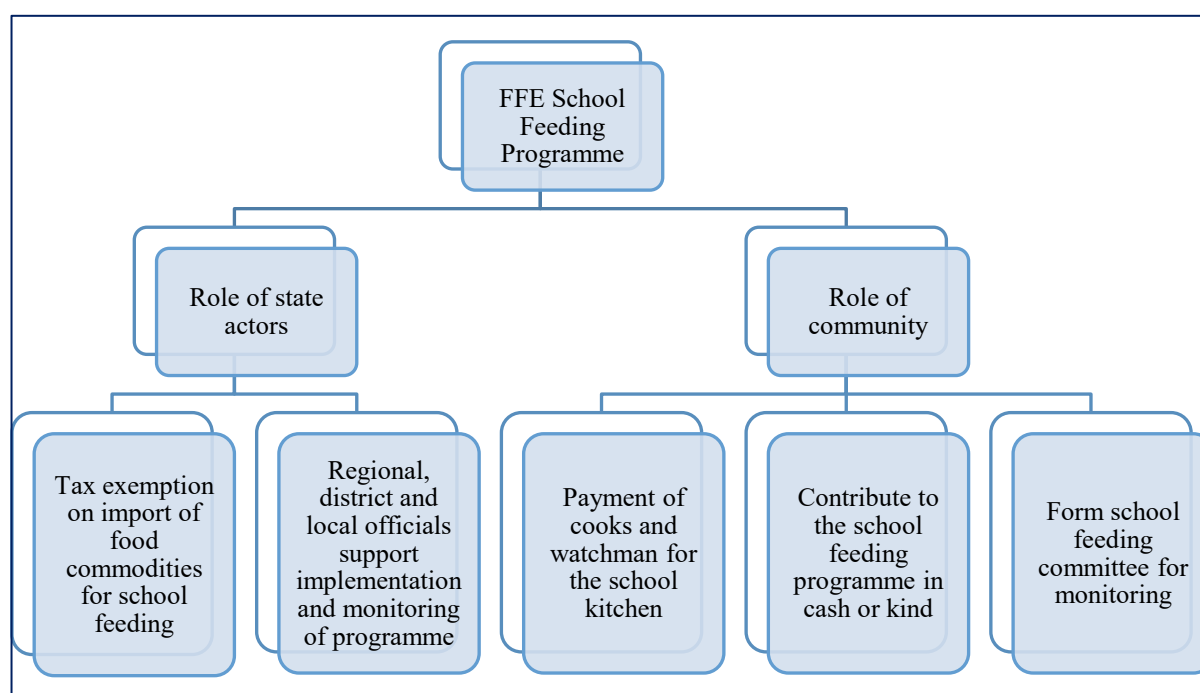


Figure 20: Support for school feeding programme by state actors and community members

In terms of community support, the response has been moderate. Only 50% of the parents interviewed across project and comparison areas willing to contribute to the school feeding programme; a moderate 41.6% of parents reported contributing money towards school expenses such as guard/cook fees in the last 6 months, and only 10% reported providing any commodity to the school in the last 6 months.

“PCI involves us in most of the program activities. We are aware about its initiatives and are part of the meetings that are held twice a year. These meetings are very useful in reviewing the progress of the program and also to discuss the future of the program relevant for our school.”

- Village Executive Officer, Project Area

“The results of the program can be made sustainable if the community starts actively contributing for the school feeding program. It is also to be noted that poverty is a determining factor for people in this area and it has its effect on education of children. Therefore, skills and entrepreneurial trainings on poultry, fishery, etc. can be crucial for increasing the income level of the households. Regular trainings for the teachers should also be organised to equip the teachers.”

- Ward Education Coordinator, Project Area

“The three main achievements of the program are an improved attendance rate, improved performance of the students and improved sanitation facility at the school level. The school feeding program has been very effective in improving the attendance rates and we expect this to continue. PCI has been very supportive and proactively provided all resources that are required.”

- Regional Adult Education Officer, Musoma district

20. Recommendations

This section provides a look at the summary of findings and recommendations emerging from the baseline assessment.

Sustain school meals - FFE interventions in the previous phases of the project, such as the school feeding programme, have been successful in increasing the overall attendance among students in the Mara region. However, despite efforts by state and non-state actors, the proportion of schools with kitchens remains at 50% in project district schools with almost all kitchens constructed under the FFE phase I. Just over 50% of the parents report they are willing to contribute to the school feeding programme. We recommend that the level of community engagement be closely monitored to assess whether the community contributions for school feeding programme increased. In addition to supporting their communities, community leaders can be taken on study tours to neighbouring districts such as Arusha to visit and learn from successfully run school meal programmes.

Training teachers on reading techniques – EGRA scores report that the fluency rate for early grade students in letter sound identification was only 14.3 letters per minute out of 100 letters. A majority of students mentioned the name of the letter rather than the sound of the letter. The project should look at strengthening teaching techniques to improve basic learning outcomes among students.

Support and sustain school infrastructure - FFE III aims to rebuild/repair water stations and toilets across the primary schools in Musoma Rural, Bunda and Butiama. The intervention responds to the water, sanitation and hygiene requirements at a school level as more than 20% of schools across continuing and new schools did not have a toilet facility within the school premises. We recommend that rebuilding and construction of toilets also be followed by monitoring their actual usage and maintenance. The SWASH programme committees can play a leading role in engaging the community/school members in monitoring and maintaining the toilet facilities. The committees could report on indicators such as the number of times toilets are cleaned every day, whether girls/boys or both are in-charge of cleaning toilets, whether water is available in the toilets during school hours in all school days etc.

Focus on training teachers - One of the major challenges faced by district and school officials is the availability of trained and proficient school teachers. As student enrollment in the project districts

increases and continues to increase, it is recommended that the FFE programme respond to the critical need to train and mentor teachers closely to ensure high quality literary instruction. The FFE III programme aims to partner with like-minded organizations such as Right To Play to provide a training of trainers for innovative teaching methodologies. Similar partnerships with state and non-state actors can be further scaled up to support teacher training programmes.

Scale up WE groups - It is recommended that the WE group formation be scaled up and sustained across the project areas. Although the effect of group membership on household income level, household resilience and literacy outcomes for students is not clear yet, the WE groups initiated under the FFE Phase II programme have shown potential for improving the socio-economic status of its women members and their families and reducing the existing gender disparities. During interviews, over half of the female WE members reported having the authority to decide how family money is spent compared to only 38% of non-member women.

Sustain engagements with local government officials - PCI works with the national, regional, district and local government offices to ensure government involvement and support during the implementation of the FFE III programme. At the department level, PCI works with the Department of Planning and Development, Community Development, Health, Education and Agriculture, and Livestock and Fisheries to implement interventions at the school level. It is recommended that the partnership and engagement with national, regional, district, ward and village level officials be sustained for phase III of the FFE programme. Having focal persons at each level is an appropriate strategy for liaising with different departments.

Reflect on programme sustainability - At a macro perspective, the study team recommends PCI to reflect on the dialogue of sustainability within all components of the FFE programme. Improving government and community engagement must be a key focus area for phase III of the FFE programme to ensure the continuation of school feeding programme, repair and maintenance of toilets, use of school gardens/demonstration plots etc. The baseline findings observe that community participation has been moderate with more than half the respondents still not contributing to the school meal programme or any other FFE component. Increasing community outreach and behaviour change communication can be targeted to improve community participation with the overall objective of long term programme sustainability.

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22. Annexure 1 – Causal pathways for the FFE programme

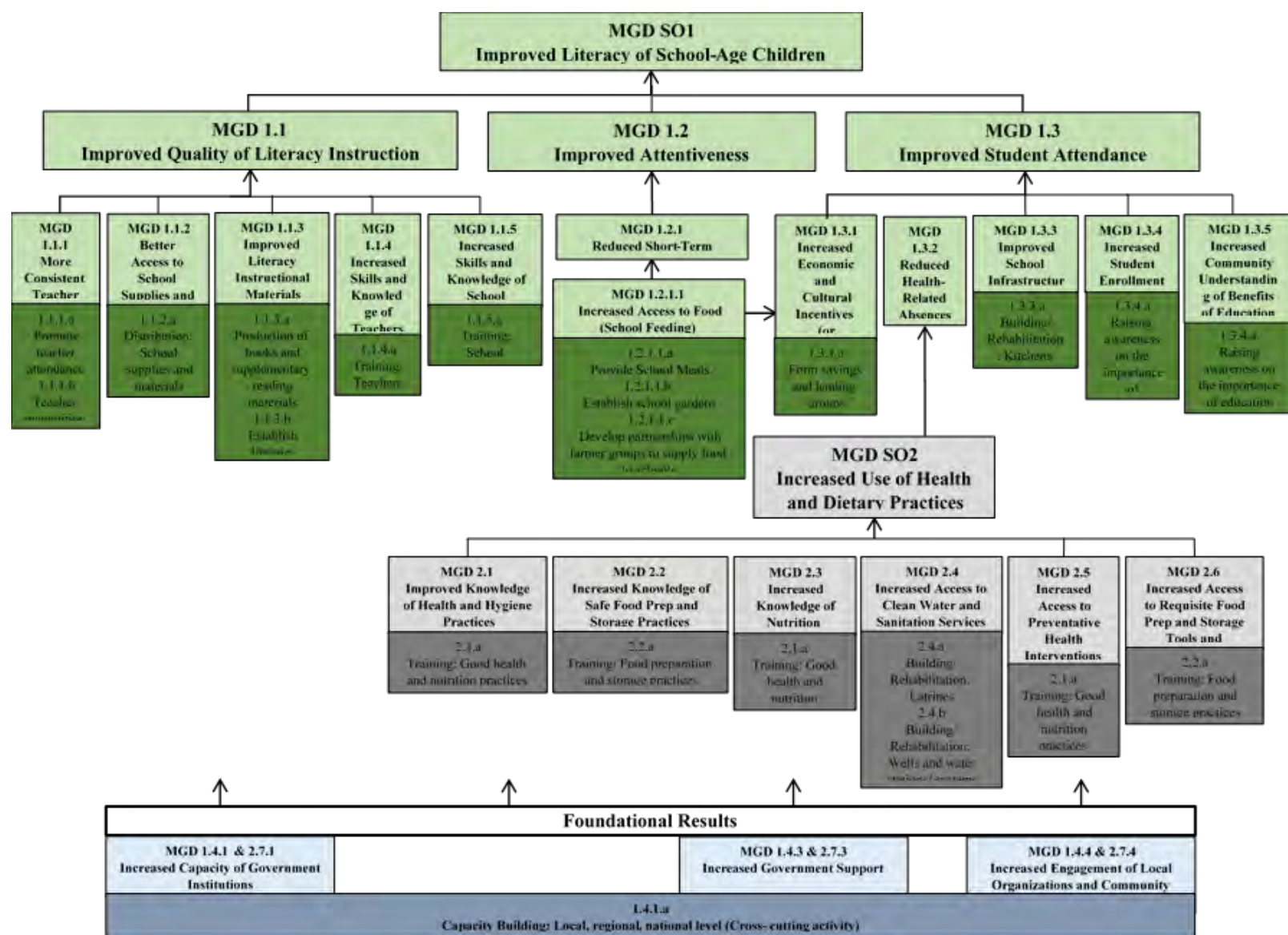


Figure 21: Causal pathways for FFE III programme

23. Annexure 2 – Overview of the FFE III programme evaluation plan

PCI engaged Sambodhi Tanzania to conduct a robust baseline study that serves as the first component of a larger programmatic evaluation plan that will also include mid-line and end-line assessment and uses a quasi-experimental design and Difference-in-Differences - Propensity Score Matching (DID-PSM) methodology with two arms; project and comparison. The baseline study methodology measures key indicators before the intervention is rolled out and provides insights regarding differences across schools, students, teachers and parents.

The project arm consisted of schools in the Musoma Rural, Bunda and Butiama project districts. The comparison arm consisted of the Serengeti district. All the districts were in the Mara region. Serengeti was the comparison district for the previous two FFE programmes, and the study team, in consultation with the PCI team, selected Serengeti as the comparison district for the third phase of the programme as well.

The baseline assessment conducted by Sambodhi followed several quality assurance and ethical protocols before and during data collection. The study team also coordinated and collaborated with government and PCI officials to collect information.

23.1. Identification of comparison schools

An *a-priori* matching was conducted to understand the similarity of the project districts to other districts in Mara region. A detailed list of schools surveyed has been provided in Annexure 3 – List of primary schools for the assessment. The results of the *a-priori* matching have been presented in the tables below. The method for conducting the initial *a-priori* matching is as follows:

- The first row of a table represents the project district along with values for 3 indicators namely; % of population in the district employed, average literacy rate in the district and average household size of the district.
- In the following rows, the other non-project districts in Mara region have been listed down along with values for the same indicators as the project district in the first row.
- The difference between the indicator values of project and non-project district are subtracted and raised to the power of two (2) to compute the variability score.
- The sum of all the three variability scores represents how similar/different are the districts from each other. Therefore, low **sum of variability scores** represents similarity between indicators across project and comparison districts.

Table 56: A-priori matching for Musoma Rural district

District	Employed (%)	Adult Literacy Rate (%)	Average Household Size	Variability Score 1	Variability Score 2	Variability Score 3	Sum of Variability Scores
Musoma Rural	67.1	82.2	6.3	-	-	-	-
Tarime	62.3	66.5	5.1	23.04	246.49	1.44	270.97
Serengeti	59.8	66.3	6.0	53.29	252.81	0.09	306.19
Musoma Municipal	43.0	86.6	4.9	580.8	19.36	1.96	602.13
Rorya	66.2	76.6	4.9	0.81	31.36	1.96	34.13

Table 57: A-priori matching for Butiama district

District	Employed (%)	Adult Literacy Rate (%)	Average Household Size	Variability Score 1	Variability Score 2	Variability Score 3	Sum of Variability Scores
Butiama	63.7	70.9	5.9	-	-	-	-
Tarime	62.3	66.5	5.1	1.96	19.36	0.6	21.96
Serengeti	59.8	66.3	6.0	15.21	21.16	0.0	36.38
Musoma Municipal	43.0	86.6	4.9	428.49	246.49	1.0	675.98
Rorya	66.2	76.6	4.9	6.25	32.49	1.0	39.74

Table 58: A-priori matching for Bunda district

District	Employed (%)	Adult Literacy Rate (%)	Average Household Size	Variability Score 1	Variability Score 2	Variability Score 3	Sum of Variability Scores
Bunda	54.3	75.0	5.9	-	-	-	-
Tarime	62.3	66.5	5.1	64	72.25	0.6	136.89
Serengeti	59.8	66.3	6.0	30.25	75.69	0.0	105.95
Musoma Municipal	43.0	86.6	4.9	127.69	134.56	1.0	263.25
Rorya	66.2	76.6	4.9	141.61	2.56	1.0	145.17

The *a-priori* matching results observed that the district of Serengeti is the closest match for the Bunda district and the second closest match for the Butiama district. However, the district of Serengeti shows the second highest variability to the Musoma Rural district. Therefore, while analysing and interpreting results, it should be considered that the socio-economic profile of at least one project district was different than the comparison district.

However, to reduce the effect of the bias due to difference in overall profile of the project and comparison district, we used school level matching methods to construct a group of comparison schools that share attributes similar to the project schools.

The schools in project districts were selected using a Simple Random Sampling (SRS) technique. Before using SRS, the number of schools to be sampled was decided on the proportion of schools in each district and the number of schools across FFE I, II and III. After selecting Serengeti as the comparison district, PSM was used to select a group of comparison schools with similar characteristics. A detailed look at the sampling methodology has been provided in the following sub-sections.

23.2. Sample and respondent groups for the baseline

The sample size and respondent groups for the baseline study were based on the recommendations provided in the terms of reference and from discussion with PCI. To assess literacy level, students from early grades (II, IV) were selected, and to understand the knowledge/awareness of health hygiene and sanitary practices, students from both early and higher grades (II, IV, VI, VII) were also included. To assess and establish whether student's literacy level and health and hygiene practices are affected by extraneous variables, the parents of 50% of the sampled students were interviewed on socio-demographic indicators. The sample calculation was done using the two-sample formula using *power* module in Stata 13.0 and sample sizes for each of the respondent groups is shown in the table below:

Table 59: Quantitative sample sizes for respondents

Sl. No.	Respondent Group/ Unit	Total Sample	Project Sample	Comparison Sample
1	Primary schools	100	50	50
2	Students in grade II	600	300	300
3	Students in grade IV	600	300	300
4	Students in grade VI	200	100	100
5	Students in grade VII	200	100	100
6	Parents of the students	800	400	400
7	Head teachers of the primary school	100	50	50
8	Teachers of the primary school	100	50	50
9	Classroom observations in the primary school	100	50	50
10	School infrastructure observations in the primary school	100	50	50
11	School sustainability and readiness assessment	100	50	50

In addition to the quantitative sample, qualitative sample sizes were also decided to complement and support the baseline findings. Table 60 summarizes the qualitative sample for the study:

Table 60: Qualitative sample size for respondents

Sl. No.	Respondent Group/ Unit	Total Sample	Project Sample	Comparison Sample
1	Students in grade VI/VII	20	10	10
2	Parent Groups	10	5	5
3	Women Empowered Groups	5	5	-
4	Farmer Groups	5	5	-
5	Head teachers	10	5	5
6	Local Government Representatives	10	5	5
7	PCI officials	6	6	-
8	District Focal Person	3	3	-
9	District Education Officer	4	3	1

To support the quantitative findings, qualitative interviews were conducted with head teachers, students, parents and government officials. The qualitative interviews aimed at gaining deeper insights into a range of questions including but not limited to the functioning of schools, perception of government officials and local leaders on the efficacy of the intervention, perception of parents on the efficacy of the interventions, perception of parents on the importance of education, especially for girls, and more.

For example, head teachers play a key role in a school's overall performance. There, the head teachers from each of the sampled schools were interviewed to assess their critical indicators on school management. Early grade teachers were interviewed and observed to assess the methodologies they used. The school infrastructure was also observed to assess the availability of toilets, hand washing stations, classrooms, kitchen etc. Overall, the quantitative sample assessed a wide range of factors that could have potential direct and indirect impact on a student's learning outcome.

23.3. Sampling methodology

The baseline study team conducted the sampling of project and comparison schools. The list of project and comparison schools has been provided in Annexure 3. The following steps provide granular information on the method of sample selection –

Step I. An equal number of schools for comparison area and project area were selected with the objective of selecting 16 students from each school. Below are the number of schools that were included in the study:

Table 61: Schools across project and comparison area

Area	Sample of Schools
Project area (Musoma Rural, Bunda, Butiama)	50
Comparison area (Serengeti)	50

Step II. The project schools were drawn from Musoma Rural, Bunda and Butiama districts while the comparison schools were drawn from Serengeti district.

Step III. The list of all 231 schools within intervention/project districts was procured and 50 schools were selected proportionately using simple random sampling technique without replacement.

Table 62: Schools across project districts

District	Total no. of schools	Schools continuing since FFE I	Schools continuing since in FFE II	Schools new in FFE III	Proportion of Sample (%)	Sample Continuing FFE I	Sample Continuing FFE II	Sample New FFE III
Butiama	57	9	13	35	12.0	2.	3	7
Bunda	101	51	10	40	22.0	11	2	9
Musoma Rural	73	60	13	0	16.0	13	3	0

Step IV. All the primary schools in Serengeti district were listed and key indicators for the comparison schools were pooled from available data to conduct the PSM process and construct a similar comparison group. Information on key indicators was collected from Primary School Leaving Examination (PLSE) data provided by National Examinations Council of Tanzania (NECTA, National Examination Council of Tanzania, n.d.). The results from the 2016 PLSE were used. The indicators were; total number of registered students in the primary school, total number of male students, total number of female students, school average, rank of school in the region and the total population of the village pulled from 2012 census data (Census 2012 data).

Step V. The list of primary schools was reviewed by PCI and government officials to ensure that the schools selected in the comparison district were not a part of any other programme/intervention (except national programmes such as Equip Tanzania, which covers 100% of all schools in Mara region). Schools that were identified as a part of any other intervention/programme, were not considered for the sampling exercise.

Step VI. 50 comparison schools were selected for the 50 project schools using PSM technique using the school average as the outcome variable and the total number of registered students and total population of the village (Census 2012 data) as covariates. The PSM module in Stata 13.0 (psmatch2) was used for the selection of comparison schools.

Step VII. To collect student-level data, students in Grades II, IV, VI and VII were listed for each school. For the EGRA group students, 12 students were selected, six each from Grades II and IV using SRS method. For Grades VI, and VII (non EGRA group), 2 students from each class were selected using the SRS method. The proportion of girls and boys was kept equal within the sample. The study team sampled extra students from each class to mitigate drop-outs and refusals.

Step VIII. Among each class for grade II, IV, VI and VII students, the parents of the first two students were selected for the parent household survey. The proportion of boys and girls was kept equal.

Step IX. The head teacher of the school was interviewed as a part of the head teacher assessment component.

Step X. The early grade teachers identified, interviewed and observed in the classroom.

Step XI. The infrastructure for all 100 schools was assessed using the school infrastructure observation schedule.

Step XII. The head teachers, school committee chairperson and village and ward education officials were reached to assess each school's sustainability readiness.

23.4. Data collection tools used in the baseline study

The assessment used a range of quantitative and qualitative tools as a part of the baseline exercise.

1. **Early Grade Reading Assessments** – The EGRA toolkit was used to assess the literacy levels of a student on five key sub-tasks namely; *listening comprehension, letter identification, non-word reading, oral reading fluency and reading comprehension* (USAID, 2016). The toolkit was used to assess students in grade II and IV.
2. **Quantitative interview schedule** – Quantitative interview schedules are commonly used research instruments for social research. Face to face interviews were conducted by trained enumerators to gauge the responses of respondents (students, parents, head teachers, teachers etc.).
3. **Observation checklist** – The study used observation checklists to conduct an independent observation of school infrastructure and classroom teaching.
4. **In-Depth Interviews schedule** – Qualitative in-depth interview (IDI) schedules were used to gauge qualitative insights from key informants to complement and triangulate quantitative information.
5. **Focus Group Discussion** – The Focus Group Discussion (FGD) module was used to conduct interviews with WE and farmer groups and parents.
6. **Coping Strategy Index** – The Coping Strategy Index (CSI) was used within the FGD modules to understand the status of nutrition and food security among group members/households.
7. **Gender Analysis Matrix** – Gender Analysis Matrix (GAM) was used as a part of the FGD module to assess the perception of respondents on the programme interventions.

23.5. Quality assurance protocols

Ensuring data quality was the priority throughout the entire exercise, all aspects including survey design, field staff trainings, selection of respondents, conducting interviews, the field and office editing adhered to rigorous quality standards.

Throughout the fieldwork, field coordinators and supervisors in the baseline study team were responsible for observing interviews and carrying out field editing. The field manager and supervisors spent considerable time evaluating and instructing interviewers during the fieldwork.

The field supervisor observed each interviewer many times throughout the course of fieldwork. The first observation started during interviewer training and was used as a screening device in the selection of the interviewers. Each interviewer was also observed during the fieldwork so that any errors made consistently were identified and controlled immediately.

The baseline study team adhered to the Government of Tanzania guidelines and study requirements while hiring consultants and field team. First, the study's technical team included of two EGRA experts (local and international) to customize and vet the EGRA questions and check their applicability during fieldwork. The EGRA experts were also instrumental in the training and selection of enumerators to conduct the EGRA.

Additionally, as per government guidelines, the study team hired District Education Quality Assurers (DEQA) to conduct the classroom observations and head teacher's interview. The study team also hired teachers and tutors as enumerators for conducting EGRA and other assessments in the school.

A pre-testing exercise was conducted to check the interview schedules as well as the logistic arrangement of the data collection process. After the pre-testing exercise, the team improved upon some of the open-ended questions. The tools were revised and finalized along with their Kiswahili translations.

23.6. Data collection and management

The data collection was done using Computer Assisted Personal Interviewing (CAPI) software on tablets. The field managers and supervisors were directly responsible for ensuring that the data collection norms were adhered to. The field managers and supervisors undertook various rounds of back-checks and spot-checks. The field managers and supervisors were joined by district and PCI officials in conducting checks during the entire duration of data collection.

The data was stored in computer readable form (.sav/.dat), and then shared with the study team for cleaning. The data cleaning process looked at missing values, skips, range checks and completed checks for inconsistency. Erroneous data was highlighted and referred to the data collection team to be tallied with the hard copy records. This process helped bring consistency and validity of the collected data.

23.7. Ethical protocols

The baseline study team followed stringent ethical protocols before and during the study. Ethical protocols followed by the baseline study are summarized below –

1. **Ethical approvals** – Ethical approvals for the study were procured from the National Bureau of Statistics (NBS) and President's Office for Regional Administration and Local Governance (PORALG or locally known as "TAMISEMI"). All instruments and documents were shared with the NBS and PORALG to procure the necessary approvals.
2. **Independence of study team** – The study team exercised independent judgement while designing and analysing data and were not influenced by views, statements or any party.
3. **Impartiality and conflict of interest** – The study team operated in an impartial and unbiased manner at all stages of the baseline study. The study team also ensured that there was no conflict of interest to strengthen the credibility of the baseline design and findings.
4. **Respect for participant's dignity and diversity** – During data collection, the study team ensured that maximum notice was provided to individuals and institutions. Their willingness to engage in the study was noted and that the respondents knew of their right to privacy. Parental consent was collected before conducting student interviews.
5. **Rights of the participant** – The respondents were treated as autonomous agents and were given the time and information to decide if they wished to participate and were allowed to make an independent decision without any pressure or fear of penalty for not participating. The respondents received sufficient information to on how to seek redress for any perceived disadvantage suffered from the study.
6. **Confidentiality** – The respondent's right to privacy was ensured. Study team ensured that sensitive information was de-identified and cannot be traced back to the relevant individuals.

7. **Avoidance of harm** – The study team ensured that there was a minimum risk to the respondents and aimed to maximize benefits and reduce any unnecessary harms that could occur from negative or critical study, without compromising the integrity of the study.
8. **Transparency** – The baseline methodology was disclosed in advance to the project partners to allow their comments and revisions. The baseline documents were easily readable and specified the sources of information and approaches.

24. Annexure 3 – List of primary schools for the assessment

Table 63: List of primary schools

#	District	Name of Primary School	Ward	Village	FFE Phase
1	Butiama	Nyabekwabe	Bisumwa	Nyabekwabi	3
2	Butiama	Mwibagi	Kyanyari	Mwibagi	2
3	Butiama	Kamgendi	Bwiregi	Kamgendi	1
4	Butiama	Busirime	Butuguri	Busirime	3
5	Butiama	Mirwa	Mirwa	Mirwa	3
6	Butiama	Magunga	Mirwa	Magunda	3
7	Butiama	Nyamikoma A	Kyanyari	Nyamikoma	2
8	Butiama	Kisamwene	Butuguri	Kisamwene	3
9	Butiama	Matongo	Buhemba	Matongo	3
10	Butiama	Ryamisanga	Bwiregi	Ryamisanga	1
11	Butiama	Kizaru	Muriza	Kizaru	2
12	Butiama	Tarani	Mirwa	Tarani	3
13	Bunda	Mariwanda A	Hunyari	Mariwanda	1
14	Bunda	Kisorya	Kisorya	Kisorya	1
15	Bunda	Busambu	Nampindi	Busambu	3
16	Bunda	Salama A	Salama	Salama "A"	1
17	Bunda	Masahunga	Kisorya	Masahunga	1
18	Bunda	Guta A	Guta	Guta "A"	1
19	Bunda	Nansimo	Nansimo	Nansimo	3
20	Bunda	Chingurubila	Namhula	Chingurubila	3
21	Bunda	Mahyolo	Neruma	Mahyolo	1
22	Bunda	Nyabehu	Guta	Nyabehu	1
23	Bunda	Rakana	Mugeta	Rakana	2
24	Bunda	Kinyambwiga A	Guta	Kinyambwiga	1
25	Bunda	Sunsi A	Nampindi	Sunsi	3
26	Bunda	Kasahunga	Neruma	Kasahunga	1
27	Bunda	Kiwasi	Wariku	Kiwasi	3
28	Bunda	Rwabu	Wariku	Rwabu	3
29	Bunda	Mekomariro B	Mihingo	Mekomariro	3
30	Bunda	Manchimweru A	Mihingo	Manchimweru	3
31	Bunda	Nyang'aranga	Mugeta	Nyang'aranga	2
32	Bunda	Buzimbwe	Butimba	Buzimbwe	1
33	Bunda	Mugeta	Mugeta	Mugeta	3
34	Bunda	Hunyari	Hunyari	Hunyari	1
35	Musoma Rural	Chitare A	Makojo	Chitare	1
36	Musoma Rural	Wanyere A	Suguti	Wanyere	1
37	Musoma Rural	Busungu	Bulinga	Busungu	2
38	Musoma Rural	Muhoji	Bugwema	Muhoji	1
39	Musoma Rural	Bulinga A	Bulinga	Bulinga	1
40	Musoma Rural	Busamba	Busambara		1

#	District	Name of Primary School	Ward	Village	FFE Phase
41	Musoma Rural	Kiriba B	Kiriba	Kiriba	1
42	Musoma Rural	Kusenyi A	Suguti	Kusenyi	1
43	Musoma Rural	Bwasi B	Bwasi	Bwasi	1
44	Musoma Rural	Buraga	Bukumi	Buraga	1
45	Musoma Rural	Butata B	Bukima	Butata	1
46	Musoma Rural	Sokoine	Mukendo	Sokoine	1
47	Musoma Rural	Kurukerege	Nyegina		2
48	Musoma Rural	Chitare B	Makojo	Chitare	1
49	Musoma Rural	Kwibara B	Mugango	Kwibara	2
50	Musoma Rural	Kamguruki	Nyakatende	Kamguruki	1
51	Serengeti	Kisangura	Kisangura	Kisangura	-
52	Serengeti	Kisaka	Kisaka	Buchanchari	-
53	Serengeti	Amani	Kebanchabancha	Kebanchabancha	-
54	Serengeti	Itununu	Nyamoko	Itununu	-
55	Serengeti	Bisarara	Sedeco	Bisarara	-
56	Serengeti	Remung'orori	Magange	Remung'orori	-
57	Serengeti	Nyantare	Ring'wani		-
58	Serengeti	Kenokwe	Mosongo	Kenokwe	-
59	Serengeti	Nyamoko	Geitasamo	Nyamoko	-
60	Serengeti	Ikorongo	Busawe	Gantamome	-
61	Serengeti	Nyamitita	Ring'wani	Nyamitita	-
62	Serengeti	Busawe	Busawe	Busawe	-
63	Serengeti	Kenyaamonta	Kenyaamonta	Kenyaamonta	-
64	Serengeti	Kwitete	Nyamoko	Kwitete	-
65	Serengeti	Moningori	Magange	Moningori	-
66	Serengeti	Nyaigabo	Kebanchabancha	Musati	-
67	Serengeti	Geitasamo	Rung'abure		-
68	Serengeti	Manyatta	Machochwe	Manyatta	-
69	Serengeti	Musati	Kebanchabancha	Musati	-
70	Serengeti	Nyamatare	Nyamatare	Nyamatare	-
71	Serengeti	Nyahende	Nyansurura		-
72	Serengeti	Machochwe	Machochwe	Machochwe	-
73	Serengeti	Sogoti	Kebanchabancha	Sogoti	-
74	Serengeti	Rigicha	Rigicha	Rigicha	-
75	Serengeti	Borenga	Kisaka	Borenga	-
76	Serengeti	Nyamburi	Sedeco		-
77	Serengeti	Nyamakendo	Machochwe	Nyamakendo	-
78	Serengeti	Nyamatoke	Mosongo	Nyamatoke	-
79	Serengeti	Mosongo	Mosongo	Mosongo	-
80	Serengeti	Kichongo	Nyamoko		-
81	Serengeti	Bonchugu	Sedeco	Bonchugu	-
82	Serengeti	Kemalambo	Ring'wani		-
83	Serengeti	Hekwe	Kenyaamonta	Hekwe	-
84	Serengeti	Gesarya	Rung'abure	Gesarya	-
85	Serengeti	Magatini	Kenyaamonta	Magatini	-
86	Serengeti	Kemugongo	Nyamatare		-
87	Serengeti	Kibeyo	Kisangura	Kibeyo	-
88	Serengeti	Magange	Magange	Magange	-
89	Serengeti	Ring'wani	Ring'wani	Ring'wani	-
90	Serengeti	Iramba	Kenyaamonta		-
91	Serengeti	Masangura	Nyamoko	Masangura	-

#	District	Name of Primary School	Ward	Village	FFE Phase
92	Serengeti	Nyansurumunti	Kisaka	Nyansurumunti	-
93	Serengeti	Kebosongo	Kisangura	Kebosongo	-
94	Serengeti	Rung'abure	Rung'abure	Rung'abure	-
95	Serengeti	Tabora B	Kisangura		-
96	Serengeti	Mesaga	Kenyamonta	Mesaga	-
97	Serengeti	Mbirikiri	Sedeco		-
98	Serengeti	Monuna	Nyambureti	Monuna	-
99	Serengeti	Nyiboko	Kisaka	Nyiboko	-
100	Serengeti	Kenya B	Ring'wani	Kenya	-

25. Annexure 4 – Background on EGRA and explanation of scoring

Under the Education Data for Decision Making (EdData II) project led by RTI, development of the Early Grade Reading Assessment (EGRA) began in October 2006 in response to a call for a measure to assess early grade reading skills in developing country contexts. Education officials and development professionals at the World Bank, the United States Agency for International Development (USAID), and other institutions identified the need for a simple, effective, and low- cost measure of student learning outcomes that could report on the foundations of student learning in reading, including recognizing letters of the alphabet, reading simple words, and understanding sentences and paragraphs.

EGRA was subsequently developed after an exhaustive review of the literature and existing assessment approaches in English and other languages, including well- known tools such as DIBELS (Dynamic Indicators of Basic Early Literacy Skills), CTOPP (Comprehensive Test of Phonological Processing), the Woodcock Johnson Tests of Achievement, and the Peabody Picture Vocabulary Test. Tools developed by non- governmental organizations, university researchers, and research institutions for various research and development projects were also reviewed. As on January 2011, EGRA had been applied in nearly 50 countries and 70 languages.

The framework underlying EGRA acknowledges that reading is acquired in phases and that the rate of acquisition is likely to vary by language and context. Another basic underlying principle is that learning to read in alphabetic languages requires the acquisition of similar foundation skills (although the importance of each of those skills may vary by language). Put simply, the Simple View of Reading framework (Gough and Tunmer, 1986) suggests that reading comprehension can be predicted by the following formula:

$$\text{Reading Comprehension} = \text{Decoding} \times \text{Language Comprehension}$$

The EGRA instrument consists of a variety of sub-tasks designed to assess foundational reading skills crucial to being a fluent reader. EGRA is designed to be a method- independent approach to assessment (i.e., the instrument does not reflect a method of reading instruction). Instead, EGRA measures the basic skills that a child must possess to eventually be able to read fluently and with comprehension—the goal of reading. EGRA sub-tasks are based on research regarding a comprehensive approach to reading acquisition across languages. These skills are phonological awareness, phonics/decoding, fluency, reading comprehension, and listening comprehension.

Phonological Awareness is essential for learning to read an alphabetic language. Phonological awareness refers to an understanding that spoken words consist of sounds of language that can map to letters, which is called the alphabetic principle. This principle refers to the recognition and understanding of how the speech sounds of a language related to units of print (or letters, in Kiswahili). Mastering the alphabetic principle is critical for decoding, or sounding out, new and unfamiliar words. One critical component of phonological awareness is phonemic awareness, which refers to the understanding that words are made up of “bits” of sound, or phonemes – the smallest unit of sound in a word. Phonemic awareness is oral and is developed before other phonological awareness skills are introduced.

Phonics/decoding is the most efficient way for beginning readers to learn to read words. This skill builds on the alphabetic principle, beginning with letter- sound correspondences that help children develop automatic recognition of letter–sound patterns in common words. Eventually, phonics is instrumental in the development of instant recognition of most words that are read. This automatic or instant word recognition is manifested by the fluent reading of connected text.

Fluency is often defined as the ability to read with speed, accuracy, and understanding. Oral reading fluency is a common way to assess whether an individual is a fluent reader. Fluency is considered critical for comprehension, as rapid, effortless word-identification processes enable the reader to focus on the text and its meaning rather than focus on word identification or decoding words letter by letter (National Institute of Child Health and Human Development, 2000).

Reading comprehension, considered to be the goal of reading, refers to the ability to actively engage with, and construct meaning from, the texts that are read.

Listening comprehension refers to a person's ability to make sense of oral language in the absence of print. Listening comprehension taps many skills and sources of knowledge, such as vocabulary knowledge, facility with grammar, and general background knowledge. Although students whose language of instruction differs from their home language have been found to learn to read words at the same rate as those who are learning in their home languages, non-native speakers have been found to show greater difficulties in language comprehension in the language of instruction (Geva and Yaghoub Zadeh, 2006). The Listening Comprehension sub-task in EGRA also taps working memory and short-term memory; therefore, it cannot be considered as a sub-task that reflects listening comprehension skills apart from other memory and language skills. This makes interpretation of this sub-task more challenging than some of the other sub-tasks. In addition, the Listening Comprehension sub-task does not correlate with other EGRA sub-tasks, so it is more difficult to interpret the results.

Table 64 below is a general guide mapping these skills to the sub-tasks included within EGRA adapted for use in the baseline study of FFE III:

Table 64: EGRA sub-tasks

Task	Skill Tested	Administration of the Task with the Students
Phonemic Awareness	Ability to identify phonemes (the smallest unit of sound) in words. This only tests an awareness of individual sounds in spoken words, not written words. Phonemic awareness is one of the critical foundational reading skills; phonemic awareness predicts later ability to learn to read.	Which of three words begins with a different sound (10 sets of words). (Untimed)
Letter Sound Knowledge	Knowledge of the sound each letter makes (not the name of the letter). This is a critical skill in preparation for decoding.	... say the sound of each letter on a printed page of 100 letters of the alphabet, in random order, upper and lower case. (Timed)
Devised Word Identification	Alphabetic principle: Letter sound correspondence and fluency; automatic decoding. Being able to decode, or link letters to their sounds by "sounding words out," then linking them to words we know, is a critical skill in learning to read unknown words.	... read a list of 50 non- words printed on a page. Words were constructed from actual orthography but were not real words. (Timed)
Oral Passage Reading	Fluency: Ability to read with speed, without hesitation, and with correct intonation. EGRA tests speed only.	... read out loud a grade level appropriate short story printed on a page (about 62 words long). (Timed)
Reading Comprehension	Comprehension: Ability to describe the meaning of what the child has Read.	... verbally respond to questions that the assessor asks about the short story the child has read. Depending on how much the child read, she may be asked up to 5 comprehension questions. (Untimed)

26. Annexure 5 – EGRA analysis

26.1. Sample for EGRA

Table 65: Distribution of students across districts, disaggregated by grade and sex

District	Grade II		Grade IV	
	Male (N)	Female (N)	Male (N)	Female (N)
Butiama	36	36	36	36
Bunda	66	66	66	66
Musoma Rural	48	48	48	48
Serengeti	150	150	150	150
Total	300	300	300	300

Table 66: Distribution of sample across FFE phases

FFE Phase	Grade II		Grade IV	
	Male (N)	Female (N)	Male (N)	Female (N)
FFE phase I	78	78	78	78
FFE phase II	24	24	24	24
FFE phase III	48	48	48	48
Total	150	150	150	150

26.2. EGRA scores disaggregated by sub-tasks

Table 67: Overall EGRA raw scores, disaggregated by sub-tasks

Sub-task	N	Mean	Std. Dev	Min	Max	95% CI	
Sound Total Completed	1200	9.68	1.24	1	10	9.60	9.75
Sound Total Correct	1200	4.44	2.14	0	10	4.32	4.56
Letter Total Completed	1200	30.14	18.64	0	100	29.08	31.20
Letter Total Correct	1200	18.78	16.46	0	100	17.85	19.71
Words Total Completed	1200	19.94	13.62	0	50	19.16	20.71
Words Total Correct	1200	15.57	13.46	0	50	14.81	16.33
Reading Total Words Completed	1200	31.71	21.69	0	62	30.48	32.94
Reading Total Sentences Completed	1200	5.93	4.31	0	12	5.69	6.18
Comprehension Total Correct	1200	1.91	1.54	0	5	1.82	1.99

Table 68: EGRA Sub-Task 1 scores disaggregated by grades

EGRA Quartile	Comparison				Project			
	Grade II		Grade IV		Grade II		Grade IV	
	N	Column %	N	Column %	N	Column %	N	Column %
0 – 25	44	14.7	31	10.3	48	16.0	42	14.0
25 – 50	188	62.7	186	62.0	199	66.3	151	50.3
50 – 75	48	16.0	59	19.7	44	14.7	58	19.3
75 – 100	20	6.7	24	8.0	9	3.0	49	16.3
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$, significant

Table 69: EGRA Sub-Task 1 scores disaggregated by gender

EGRA Quartile	Comparison				Project			
	Boys		Girls		Boys		Girls	
	N	Column %	N	Column %	N	Column %	N	Column %
0 – 25	37	12.3	38	12.7	45	15.0	45	15.0

25 – 50	187	62.3	187	62.3	172	57.3	178	59.3
50 – 75	53	17.7	54	18.0	46	15.3	56	18.7
75 – 100	23	7.7	21	7.0	37	12.3	21	7.0
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$, significant

Table 70: Analysis of sub-task 1 scores disaggregated by FFE phases

EGRA Quartile	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
0 – 25	47	15.1	14	14.6	29	15.1
25 – 50	191	61.2	51	53.1	108	56.3
50 – 75	48	15.4	16	16.7	38	19.8
75 – 100	26	8.3	15	15.6	17	8.9

* $p < 0.05$, significant

Table 71: Analysis of zero scores for sub-task 1, disaggregated by grades

Status	Comparison*				Project*			
	Grade II		Grade IV		Grade II		Grade IV	
	N	Column %	N	Column %	N	Column %	N	Column %
Zero score	27	9.0	15	5.0	17	5.7	13	4.3
Non-zero score	273	91.0	285	95.0	283	94.3	287	95.7
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$, significant

Table 72: EGRA Sub-task 1 scores disaggregated by parents' WE membership status

EGRA sub-task 1	Project district schools		
	Previous WE member		Non-member
	Mean		Mean
Sub-task 1 score	50.00		44.26

Table 73: Analysis of zero scores for sub-task 1, disaggregated by gender and FFE phase

Status	Comparison				Project			
	Boys		Girls		Boys		Girls	
	N	Column %	N	Column %	N	Column %	N	Column %
Zero score	22	7.3	20	6.7	18	6.0	12	4.0
Non-zero score	278	92.7	280	93.3	282	94.0	288	96.0
Total	300	100.0	300	100.0	300	100.0	300	100.0

Status	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
Zero score	18	5.8	3	3.1	9	4.7
Non-zero score	294	94.2	93	96.9	183	95.3
Total	312	100.0	96	100.0	192	100.0

* $p < 0.05$, significant

Table 74: EGRA Sub-Task 2 scores disaggregated by grades

	Comparison**	Project*
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EGRA Quartile	Grade II		Grade IV		Grade II		Grade IV	
	N	Column %	N	Column %	N	Column %	N	Column %
0 - 25	221	73.7	220	73.3	234	78.0	198	66.0
25 - 50	65	21.7	70	23.3	57	19.0	73	24.3
50 - 75	14	4.7	9	3.0	6	2.0	24	8.0
75 - 100	0	0.0	1	0.3	3	1.0	5	1.7
Total	300	100.0	300	100.0	300	100.0	300	100.0

Table 75: EGRA Sub-Task 2 scores disaggregated by gender

EGRA Quartile	Comparison				Project			
	Boy		Girl		Boy		Girl	
	N	Column %	N	Column %	N	Column %	N	Column %
0 – 25	218	72.7	223	74.3	218	72.7	214	71.3
25 – 50	69	23.0	66	22.0	66	22.0	64	21.3
50 – 75	12	4.0	11	3.7	12	4.0	18	6.0
75 – 100	1	0.3	0	0.0	4	1.3	4	1.3
Total	300	100.0	300	100.0	300	100.0	300	100.0

Table 76: EGRA sub-task 2 scores disaggregated by FFE phases

EGRA Quartile**	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
0 – 25	226	72.4	64	66.7	142	74.0
25 – 50	67	21.5	27	28.1	36	18.8
50 – 75	14	4.5	5	5.2	11	5.7
75 – 100	5	1.6	0	.0	3	1.6
Total	312	100.0	96	100.0	192	100.0

* $p < 0.05$, significant || ** $p > 0.05$, not significant

Table 77: Analysis of zero scores for sub-task 2, disaggregated by grades

Status	Comparison*				Project*			
	Grade II		Grade IV		Grade II		Grade IV	
	N	Column %	N	Column %	N	Column %	N	Column %
Zero score	44	14.7	63	21.0	54	18.0	35	11.7
Non-zero score	256	85.3	237	79.0	246	82.0	265	88.3
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$, significant || ** $p > 0.05$, not significant

Table 78: Analysis of zero scores for sub-task 2, disaggregated by gender

Status	Comparison				Project			
	Boy		Girl		Boy		Girl	
	N	Column %	N	Column %	N	Column %	N	Column %
Zero score	47	15.7	60	20.0	48	16.0	41	13.7
Non-zero score	253	84.3	240	80.0	252	84.0	259	86.3
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$, significant

Table 79: Analysis of zero scores for sub-task 2, disaggregated by FFE

Status*	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
Zero score	37	11.9	7	7.3	45	23.4
Non-zero score	275	88.1	89	92.7	147	76.6
Total	312	100.0	96	100.0	192	100.0

* $p < 0.05$, significant

Table 80: EGRA Sub-Task 3 scores disaggregated by grades

EGRA Quartile	Comparison*				Project*			
	Grade II		Grade IV		Grade II		Grade IV	
	N	Column %	N	Column %	N	Column %	N	Column %
0 – 25	146	48.7	128	42.7	198	66.0	109	36.3
25 – 50	86	28.7	95	31.7	65	21.7	82	27.3
50 – 75	51	17.0	60	20.0	27	9.0	68	22.7
75 – 100	17	5.7	17	5.7	10	3.3	41	13.7
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$, significant

Table 81: EGRA Sub-Task 3 scores disaggregated by gender

EGRA Quartile	Comparison				Project			
	Boy		Girl		Boy		Girl	
	N	Column %	N	Column %	N	Column %	N	Column %
0 – 25	131	43.7	143	47.7	160	53.3	147	49.0
25 – 50	99	33.0	82	27.3	69	23.0	78	26.0
50 – 75	54	18.0	57	19.0	44	14.7	51	17.0
75 – 100	16	5.3	18	6.0	27	9.0	24	8.0
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$

Table 82: EGRA sub-task 3 scores disaggregated by FFE phases

EGRA Quartile	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
0 – 25	160	51.3	44	45.8	103	53.6
25 – 50	77	24.7	26	27.1	44	22.9
50 – 75	49	15.7	16	16.7	30	15.6
75 – 100	26	8.3	10	10.4	15	7.8
Total	312	100.0	96	100.0	192	100.0

Table 83: Analysis of zero scores for sub-task 3, disaggregated by gender

Status	Comparison				Project			
	Boy		Girl		Boy		Girl	
	N	Column %	N	Column %	N	Column %	N	Column %
Zero score	50	16.7	65	21.7	64	21.3	60	20.0
Non-zero score	250	83.3	235	78.3	236	78.7	240	80.0
Total	300	100.0	300	100.0	300	100.0	300	100.0

Table 84: Analysis of zero scores for sub-task 4, disaggregated by FFE phases

Status	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
Zero score	56	17.9	14	14.6	54	28.1
Non-zero score	256	82.1	82	85.4	138	71.9
Total	312	100.0	96	100.0	192	100.0

Table 85: EGRA Sub-Task 4 scores disaggregated by grades

EGRA Quartile	Comparison*				Project*			
	Grade II		Grade IV		Grade II		Grade IV	
	N	Column %	N	Column %	N	Column %	N	Column %
0 – 25	84	28.0	83	27.7	128	42.7	56	18.7
25 – 50	45	15.0	48	16.0	68	22.7	44	14.7
50 – 75	92	30.7	61	20.3	41	13.7	64	21.3
75 – 100	79	26.3	108	36.0	63	21.0	136	45.3
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$, significant

Table 86: EGRA Sub-Task 4 scores disaggregated by grades

EGRA Quartile	Comparison				Project			
	Boy		Girl		Boy		Girl	
	N	Column %	N	Column %	N	Column %	N	Column %
0 – 25	79	26.3	88	29.3	96	32.0	88	29.3
25 – 50	48	16.0	45	15.0	63	21.0	49	16.3
50 – 75	77	25.7	76	25.3	55	18.3	50	16.7
75 – 100	96	32.0	91	30.3	86	28.7	113	37.7
Total	300	100.0	300	100.0	300	100.0	300	100.0

Table 87: EGRA sub-task 4 scores disaggregated by FFE phases

EGRA Quartile	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
0 - 25	87	27.9	25	26.0	72	37.5
25 - 50	64	20.5	22	22.9	26	13.5
50 - 75	51	16.3	14	14.6	40	20.8
75 – 100	110	35.3	35	36.5	54	28.1
Total	312	100.0	96	100.0	192	100.0

Table 88: Analysis of zero scores for sub-task 4, disaggregated by grade

Status	Comparison*				Project*			
	Grade II		Grade IV		Grade II		Grade IV	
	N	Column %	N	Column %	N	Column %	N	Column %
Zero score	30	10.0	40	13.3	56	18.7	21	7.0
Non-zero score	270	90.0	260	86.7	244	81.3	279	93.0
Total	300	100.0	300	100.0	300	100.0	300	100.0

* $p < 0.05$, significant

Table 89: Analysis of zero scores for sub-task 4, disaggregated by sex of the student

Status	Comparison				Project			
	Boy		Girl		Boy		Girl	
	N	Column %	N	Column %	N	Column %	N	Column %
Zero score	29	9.7	41	13.7	42	14.0	35	11.7
Non-zero score	271	90.3	259	86.3	258	86.0	265	88.3
Total	300	100.0	300	100.0	300	100.0	300	100.0

Table 90: Analysis of zero scores for sub-task 4, disaggregated by FFE phases

Status	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
Zero score	37	11.9	7	7.3	33	17.2
Non-zero score	275	88.1	89	92.7	159	82.8
Total	312	100.0	96	100.0	192	100.0

Table 91: EGRA Sub-Task 5 scores disaggregated by gender

Sub-task 5 score	Comparison				Project			
	Boy		Girl		Boy		Girl	
	N	Column %	N	Column %	N	Column %	N	Column %
Sub-task score <80%	238	79.3	247	82.3	252	84.0	251	83.7
Sub-task score 80% or more	62	20.7	53	17.7	48	16.0	49	16.3

Table 92: EGRA sub-task 5 scores disaggregated by FFE phases

Sub-task 5 score	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
Sub-task score <80%	263	84.3	79	82.3	161	83.9
Sub-task score 80% or more	49	15.7	17	17.7	31	16.1

Table 93: Analysis of zero scores for sub-task 5, disaggregated by grades

Status	Comparison				Project			
	Grade II		Grade IV		Grade II		Grade IV	
	N	Column %	N	Column %	N	Column %	N	Column %
Zero score	66	22.0	73	24.3	104	34.7	45	15.0
Non-zero score	234	78.0	227	75.7	196	65.3	255	85.0
Total	300	100.0	300	100.0	300	100.0	300	100.0

Table 94: Analysis of zero scores for sub-task 5, disaggregated by gender

Status	Comparison				Project			
	Boy		Girl		Boy		Girl	
	N	Column %	N	Column %	N	Column %	N	Column %
Zero score	60	20.0	79	26.3	80	26.7	69	23.0
Non-zero score	240	80.0	221	73.7	220	73.3	231	77.0
Total	300	100.0	300	100.0	300	100.0	300	100.0

Table 95: Analysis of zero scores for sub-task 5, disaggregated by FFE phases

Status**	FFE 1		FFE 2		FFE 3	
	N	Column %	N	Column %	N	Column %
Zero score	68	21.8	18	18.8	63	32.8
Non-zero score	244	78.2	78	81.3	129	67.2
Total	312	100.0	96	100.0	192	100.0

* $p < 0.05$, significant || ** $p > 0.05$, not significant

26.3. Methodology for calculating EGRA scores for sub-tasks

The EGRA scores were calculated using the following method -

$$\text{Sub-task 1 score} = \frac{\text{Total correct responses}}{\text{Total number of questions}} \times 100$$

- Sub-task 1 consisted of 10 questions
- This was not a timed task

$$\text{Sub-task 2 score} = \frac{\text{Total correct responses}}{\text{Total number of questions}} \times 100$$

$$\text{Fluency rate for sub-task 2} = \frac{\text{Sub task score 1}}{\text{Time taken for the sub task}} \times 60$$

- Sub-task 2 consisted of 100 letters to be read by the child
- This was a timed test and the child had 60 seconds to read all the letters
- The fluency rate is to identify the number of words read by the child per minute

$$\text{Sub-task 3 score} = \frac{\text{Total correct responses}}{\text{Total number of questions}} \times 100$$

$$\text{Fluency rate for sub-task 3} = \frac{\text{Sub task score 2}}{\text{Time taken for the sub task}} \times 60$$

- Sub-task 3 consisted of 50 devised words to be read by the child
- This was a timed test and the child had 60 seconds to read all letters.
- The fluency rate is to identify the number of words read by the child per minute

$$\text{Sub-task 4 score} = \frac{\text{Total correct responses}}{\text{Total number of questions}} \times 100$$

$$\text{Fluency rate for sub-task 4} = \frac{\text{Sub task score 3}}{\text{Time taken for sub task}} \times 60$$

- Sub-task 4 consisted of 62 words in a comprehension to be read by the child
- This was a timed test and the child had 60 seconds to read all the 62 words.
- The fluency rate is to identify the number of words read by the child per minute

$$\text{Sub-task 5 score} = \frac{\text{Total correct responses}}{\text{Total number of questions}} \times 100$$

- Sub-task 5 consisted of 5 questions linked to the comprehension in sub-task 4
- This was not a timed task

The second edition of EGRA toolkit prescribed by USAID and RTI (USAID, 2016) does not prescribe a method for computing the overall EGRA scores. Therefore, the study team used Principal Component Analysis (PCA) as the method for scoring. The steps for computing PCA have been described as follows:

- Scores for the five EGRA sub-tasks were used as input variables for the PCA using *pca* module in Stata 13.0
- The PCA analysis resulted in 2 factors, out of which the first factor was retained as it explained the maximum variation in the data
- Using *predict* function in Stata 13.0, we saved the PCA factor scores into a variable. The variable was standardized to have a mean of 0 and standard deviation of 1.
- The factor scores were then used as outcome variable to run OLS regression

26.4. Predictor variables for EGRA regression models

- **Grade of the student** – This variable represents the grade of the student. Students in grade II have been coded as 1 and grade IV have been coded as 2.
- **Sex of the student** – This variable represents the sex of the student. Male students have been coded as 1 and female students have been coded as 2.
- **Study arm** – This variable represents the study arms. Comparison area has been coded as 0 and project area has been coded as 1.
- **Literacy status of student's parent** – This variable represents the literacy status of the student's parent. Literate parent (read only/read and write) have been coded as 1 and parents who could not read or write have been coded as 0.
- **Whether student's household member has bank account** – If a student's household member has a bank account, they are coded as 1. If none of the student's household member have a bank account, they are coded as 0.
- **Employment status of student's parent** – If the student's parent is employed, they are coded as 1. If they are unemployed, they are coded as 0.
- **Whether student's parent is a WE member** – If a student's parent are currently WE members, they are coded as 3. If a student's parents were previous WE members, they are coded as 2. If they are non-members, they are coded as 0.
- **Whether student has eaten minimum acceptable diet** – If a student has consumed minimum acceptable diet yesterday (day before the survey), they are coded as 1. If the student has not consumed minimum acceptable diet yesterday, they are coded as 0.
- **School sustainability and readiness assessment score (SSR)** – The school sustainability readiness score was computed by scoring the sustainability readiness assessment tool. The scores are continuous and a higher score represents better sustainability readiness at the school level.
- **Score for organizing classroom during teaching** – This score was computed by combining the indicators from the classroom observation tool. The scores are continuous and a higher score represents better organization of classroom.
- **Score for quality of instruction quality** – The scores are continuous and a higher score represents better instruction quality.
- **Score for class activity** – The scores are continuous and a higher score represents more class activity

- **Score for teaching method adopted by teacher** – The scores are continuous and a higher score represents more diverse teaching methods adopted by the teacher.
- **Score for teacher’s method of assessing students** – The scores are continuous and a higher score represents diverse methods used by teachers for assessing students.
- **Score for use of teaching materials during class** – The scores are continuous and a higher score represents use of teaching materials by teacher during class.
- **Use of library by student** – A student using library at least once a week has been coded as 1, while a student not using library once a week has been coded as 0.

27. Annexure 6 – Methodology for calculating Minimum Acceptable Diet

Obtaining detailed data on household food access or individual dietary intake can be time consuming and expensive, and requires a high level of technical skill both in data collection and analysis. Dietary diversity is a qualitative measure of food consumption that reflects household access to a variety of foods, and is also a proxy for nutrient adequacy of the diet of individuals. The dietary diversity questionnaire represents a rapid, user-friendly and easily administered low-cost assessment tool.

Scoring and analysis of the information collected with the questionnaire is straightforward. The dietary diversity scores described in these guidelines consist of a simple count of food groups that a household or an individual has consumed over the preceding 24 hours. The guidelines describe the use of the dietary diversity questionnaire at both the household and individual level, for which calculation of the score is slightly different in each case. The data collected can also be analyzed to provide information on specific food groups of interest.

The rationale for these guidelines is to provide a standardized questionnaire of universal applicability from which various dietary diversity scores can be calculated. As such it is not culture, population, or location specific and therefore, prior to using it in the field, it will be necessary to adapt it to the local context (FAO, 2010).

Definition of Minimum Acceptable Diet

The “*minimum acceptable diet*” or *MAD* indicator measures both the minimum feeding frequency and minimum dietary diversity, as appropriate for various age groups.

Minimum dietary diversity for children is defined as four or more food groups out of the following seven food groups:

1. Grains, roots and tubers
2. Legumes and nuts
3. Dairy products (milk, yogurt, cheese)
4. Flesh foods (meat, fish, poultry and liver/organ meats)
5. Eggs
6. Vitamin-A enriched foods, including vegetable oil, fruits and vegetables
7. Other fruits and vegetables

Minimum meal frequency for children is defined as three or more feedings of solid, semi-solid or soft food per day.

Table 96: Questionnaire for MAD, with probing questions

#	Question	Response
1	Yesterday, did you eat breakfast at home?	1 = Yes 2 = No
1.1	If Yes, what among the following did we eat? Probe all options	(1 = Yes, 0 = No)
1.1.1	Grains (Maize, rice, wheat, sorghum, millet, bread, noodles, biscuits, cookies or any other foods made from maize, rice, wheat, sorghum, millet)	
1.1.2	Roots and tubers (White potatoes, white yam, White cassava or any other food made from white potatoes, white yam, white cassava)	
1.1.3	Legumes and nuts (Dried beans, dried peas, lentils, nuts, seeds or foods made of these such as peanut butter, hummus)	
1.1.4	Dairy products (Milk, cheese, yogurt or other milk products)	
1.1.5	Flesh foods (Beef, pork, lamb, goat, rabbit, chicken, duck, other birds, fish)	
1.1.6	Eggs (Eggs from chicken, duck or any other egg)	
1.1.7	Vitamin A enriched foods (Ripe mango, cantaloupe, ripe papaya, dried peach, 100% fruit juice from any of these, pumpkin, carrot, squash, sweet potato, any other vitamin A rich vegetables such as red sweet pepper etc.)	
1.1.8	Other fruits and vegetables Tomato, onion, eggplant, cauliflower, avocados, guava, banana, apples, grapes, passion fruit, cucumber, bitter melon, watermelon, pineapple and any other vegetables and fruits	
1.2	After having breakfast at home yesterday, did you feel hungry?	1 = Yes 2 = No
1.3	If yes, what did you do when you felt hungry?	1 = Told my parents 2 = Did not do anything 3 = Ate outside (Specify) 88 = Others (Specify)

The minimum dietary diversity is calculated by taking a sum of questions 1.1.1 to 1.1.8. The number of meals consumed by the child is also recorded (breakfast, snacks, lunch, dinner).

A student is observed to have consumed a MAD if he/she scores four (4) or more in the dietary diversity and consumed three (3) or more meals in the last 24 hours.

28. Annexure 7 – Methodology for calculating Coping Strategy Index (CSI)

The Coping Strategies Index (CSI) is an indicator of household food security that is relatively simple and quick to use, straightforward to understand, and correlates well with more complex measures of food security. A series of questions about how households manage to cope with a shortfall in food for consumption results in a simple numeric score. In its simplest form, monitoring changes in the CSI score indicates whether household food security status is declining or improving.

List of coping strategies

Following is a list of standard coping strategies described in the CSI manual (FAO, 2010).

Table 97: List of coping strategies

#	Coping strategies
1	Rely on less preferred and less expensive foods?
2	Borrow food, or rely on help from a friend or relative?
3	Purchase food on credit?
4	Gather wild food, hunt, or harvest immature crops?
5	Consume seed stock held for next season?
6	Send household members to eat elsewhere?
7	Send household members to beg?
8	Limit portion size at mealtimes?
9	Restrict consumption by adults in order for small children to eat?
10	Feed working members of HH at the expense of non-working members?
11	Reduce number of meals eaten in a day?
12	Skip entire days without eating?

Counting the frequency of strategies

Respondents are probed on how often, in the past seven (7) days, they have had to rely on each individual coping behaviour.

Table 98: Counting the frequency of coping strategies

#	Coping strategies	Number of days out of the past 7 days
1	Rely on less preferred and less expensive foods?	
2	Borrow food, or rely on help from a friend or relative?	
3	Purchase food on credit?	
4	Gather wild food, hunt, or harvest immature crops?	
5	Consume seed stock held for next season?	
6	Send household members to eat elsewhere?	
7	Send household members to beg?	
8	Limit portion size at mealtimes?	
9	Restrict consumption by adults in order for small children to eat?	
10	Feed working members of HH at the expense of non-working members?	
11	Reduce number of meals eaten in a day?	
12	Skip entire days without eating?	

Categorizing according to severity

The CSI tool relies on counting coping strategies that are not equal in severity. Different strategies are “weighted” differently, depending on how severe they are considered to be by the people who rely on them. The frequency answer is then multiplied by a weight that reflects the severity of individual behaviours. Finally, the totals are added. The simplest procedure for doing this is to group individual coping behaviours according to similar levels of severity and assign a weight to each group, from lowest (least severe) to highest (most severe).

The category for responses on severity are:

1 = Least severe

2 = Moderate

3 = Severe

4 = Very severe

Scoring – Combining frequency and severity for analysis

Table 99: Scoring CSI - example

#	Coping strategies	Number of days in past 7 days	Severity Rank	Total CSI Score
1	Rely on less preferred and less expensive foods?	1	2	2
2	Borrow food, or rely on help from a friend or relative?	2	1	2
3	Purchase food on credit?	3	2	6
4	Gather wild food, hunt, or harvest immature crops?	4	4	16
5	Consume seed stock held for next season?	5	5	25
6	Send household members to eat elsewhere?	2	1	2
7	Send household members to beg?	3	4	12
8	Limit portion size at mealtimes?	1	2	2
9	Restrict consumption by adults in order for small children to eat?	2	1	2
10	Feed working members of HH at the expense of non-working members?	3	2	6
11	Reduce number of meals eaten in a day?	4	4	16
12	Skip entire days without eating?	2	1	2

29. Annexure 8 – Factor scores and weights for Wealth Index

Table 100: Factor scores and weights for wealth index

#	Variable	Mean	Std. Deviation(a)	Component Coef Matrix	Score
1	pipeddw	0.005	0.070577805	0.005296393	
2	pubtab	0.08625	0.280908481	0.003707164	
3	neightap	0.01375	0.116524289	-0.003065496	
4	opwelldw	0.0125	0.111171934	0.013566056	
5	opwellyard	0.0025	0.049968701	-0.000515764	
6	opwellpub	0.265	0.4416093	-0.02633911	
7	neighopwell	0.02	0.140087582	-0.008404634	
8	protwelldw	0.01875	0.135725695	0.02485425	
9	protwellpub	0.165	0.371412755	0.026833329	
10	neighbore	0.0525	0.223172596	-0.009156078	
11	spring	0.05375	0.225664781	-0.005143952	
12	rivstrem	0.085	0.27905616	-0.00692098	
13	pondlake	0.14875	0.356064481	-0.010473615	
14	dam	0.02	0.140087582	-0.000291369	
15	rainwater	0.0475	0.212838849	0.026388946	
16	tanktruck	0.00125	0.035355339	-0.002667415	
17	bottwater	0.0025	0.049968701	0.00625114	
18	wattreat	0.86	0.347204102	0.024758976	
19	flush1	0.02375	0.15236455	0.021294261	
20	flush2	0.03625	0.187028506	0.021510691	

#	Variable	Mean	Std. Deviation(a)	Component Coef Matrix	Score
21	flush3	0.1025	0.303494458	0.010784654	
22	flush4	0.02625	0.159977901	0.002057654	
23	vent	0.03	0.170693938	0.007234333	
24	pitslab	0.1625	0.369139649	-0.01692394	
25	pitnoslab	0.05	0.218081291	0.003002886	
26	openpit	0.54375	0.498393853	-0.010761736	
27	compost	0.005	0.070577805	-0.003383141	
28	notoilet	0.0175	0.13120697	-0.007335775	
29	othertoil	0.0025	0.049968701	0.001051955	
30	sharetoil	0.1325	0.339245648	-0.006929286	
31	cookelec	0.0075	0.086331143	0.012551192	
32	cookbottgas	0.00125	0.035355339	0.004544006	
33	cookparaffinkero	0.0075	0.086331143	-0.003311461	
34	cookcharoal	0.05625	0.230547995	0.047042755	
35	cookfirewood	0.92	0.271462917	-0.045343448	
36	cookcrop	0.00125	0.035355339	-0.004286283	
37	cookothers	0.00625	0.078858803	0.008327076	
38	lightelec	0.05375	0.225664781	0.045177718	
39	lightsolar	0.56375	0.496229526	0.048560711	
40	lightgas	0.00375	0.061160553	-0.007213461	
41	lightparahurr	0.02875	0.167207612	-0.002179577	
42	lightparapress	0.0275	0.16363747	-0.012432531	
43	lightparawick	0.2475	0.431829649	-0.065533796	
44	lightfirewood	0.01125	0.105533688	-0.010544694	
45	lightcandles	0.00125	0.035355339	0.006019756	
46	floorearth	0.71875	0.449890475	-0.098399981	
47	floorwood	0.02	0.140087582	0.000882003	
48	floorparquet	0.01	0.099560989	0.013051626	
49	floorvinyl	0.00125	0.035355339	-0.004606862	
50	floorceramic	0.00125	0.035355339	0.013485603	
51	floorcement	0.24125	0.428109255	0.099270681	
52	floorother	0.0075	0.086331143	0.000389378	
53	wallgrass	0.0875	0.282743134	-0.030921988	
54	wallpoles	0.25125	0.434003325	-0.051468706	
55	wallsundry	0.27	0.444237193	-0.027816945	
56	wallbaked	0.345	0.475665662	0.085047802	
57	wallwood	0.015	0.121628499	-0.007916773	
58	wallcement	0.02375	0.15236455	0.025309887	
59	wallother	0.0075	0.086331143	0.001044206	
60	roof1	0.37875	0.48537916	-0.08296493	
61	roof2	0.54375	0.498393853	0.07941276	
62	roof3	0.0025	0.049968701	-0.000938514	
63	roof4	0.01625	0.126514604	-0.009601372	
64	roof5	0.01375	0.116524289	0.017069242	
65	roof6	0.045	0.207433811	-0.000177189	
66	watch1	0.3025	0.459627917	0.048367509	
67	bicycle1	0.475	0.499687011	0.052179446	
68	motorcycle1	0.13125	0.337884811	0.063754167	
69	car1	0.01125	0.105533688	0.032249464	
70	bank1	0.09875	0.298512688	0.082235671	
71	radio1	0.48125	0.499960887	0.078832571	

#	Variable	Mean	Std. Deviation(a)	Component Coef Matrix	Score
72	tv1	0.08875	0.284560461	0.076955063	
73	telephone1	0.0075	0.086331143	0.004632687	
74	computer1	0.01	0.099560989	0.043201207	
75	fridge1	0.015	0.121628499	0.045982733	
76	battery1	0.0825	0.275297086	0.068655138	
77	iron1	0.23125	0.421895642	0.081673387	
78	mobile1	0.73	0.444237193	0.071348436	
79	animcart1	0.09875	0.298512688	0.03216036	
80	boat1	0.005	0.070577805	0.021758463	
81	landfarmown	0.945	0.228122884	0.004088408	
82	landgrazeown	0.23875	0.426586342	0.012915457	
83	landfarmare	4.6493125	8.271456501	0.041300969	
84	landgrazearea	0.956375	7.418416306	0.018179912	
85	hhlandrent	0.15625	0.363319334	0.001554075	
86	hhlandsharecrop	0.0175	0.13120697	0.00496246	
87	hhlandfreepriv	0.1125	0.31617829	-0.002257697	
88	hhlandopen	0.03	0.170693938	0.015127472	
89	hhlandno	0.68375	0.465302666	-0.006628089	
90	landnotownfarm	1.007749875	4.938045697	0.027772699	
91	landnotowngraze	0.319124875	1.773669627	0.007140233	
92	marketkilo	2.45375	5.350340514	-0.009391326	
93	nummeals	2.345	0.611508322	0.059609597	
94	meat	0.9	1.126537331	0.048185467	
95	fish	1.4775	2.066962546	0.021717538	
96	probhungsatisfyev	0.115	0.319221519	0.040263117	
97	probhungsatisfysel	0.4525	0.498050015	0.028258218	
98	probhungsatisfysome	0.10375	0.30512672	-0.007126424	
99	probhungsatisfyoft	0.29625	0.456888248	-0.049196041	
100	probhungsatisfyalw	0.02125	0.144306854	-0.015733619	
101	probhungsatisfydntknw	0.01125	0.105533688	-4.58144E-05	
102	healthkilo	3.233375	4.244082811	-0.014505052	
103	healthtime	77.1075	89.03988472	-0.035030433	
104	healthtravcar	0.16	0.366835399	0.033077982	
105	healthtravpubtrans	0.0075	0.086331143	0.014290716	
106	healthtravwalk	0.74	0.438908648	-0.027749881	
107	healthtravbicyc	0.09125	0.288144446	-0.007420276	
108	healthtravothers	0.00125	0.035355339	0.02686626	
109	makeugali	0.89875	0.301848187	0.008333782	
110	growugali	0.285	0.451696843	0.029673235	
111	buyugali	0.61375	0.487193631	-0.02234793	
112	useoil	0.72375	0.447421692	0.050938881	
113	growoil	0.00875	0.093189553	0.017174782	
114	buyoil	0.7125	0.452879813	0.047484215	
115	cowbull	8.1225	13.97781162	0.037410684	
116	horsedonkeymule	0.19	0.694264001	0.027036028	
117	goat	4.47875	8.786982546	0.030635233	
118	sheep	4.0675	8.525479371	0.035538228	
119	chickenpoultry	7.5	8.335127049	0.054202319	

30. Annexure 9 – Correlation coefficients for EGRA sub-task scores

Table 101: Correlation coefficient for EGRA sub-task scores

Variable	Phonemic awareness	Letter sound knowledge	Devised words identification	Oral reading	Reading comprehension
Phonemic awareness	1				
Letter sound knowledge	0.25 (p<0.05)	1			
Devised words identification	0.39 (p<0.05)	0.56 (p<0.05)	1		
Oral reading	0.28 (p<0.05)	0.42 (p<0.05)	0.72 (p<0.05)	1	
Reading comprehension	0.37 (p<0.05)	0.50 (p<0.05)	0.72 (p<0.05)	0.84 (p<0.05)	1
Grade of student	0.14 (p<0.05)	0.09 (p<0.05)	0.20 (p<0.05)	0.19 (p<0.05)	0.18 (p<0.05)
Sex of student	-0.02 (p>0.05)	0.00 (p>0.05)	0.00 (p>0.05)	0.02 (p>0.05)	-0.01 (p>0.05)
Parent's literacy level	0.08 (p<0.05)	0.11 (p<0.05)	0.10 (p<0.05)	0.09 (p<0.05)	0.08 (p<0.05)
Household having bank a/c	0.09 (p<0.05)	0.08 (p<0.05)	0.06 (p<0.05)	0.04 (p>0.05)	0.05 (p>0.05)
Parent's employment status	-0.0296 (p>0.05)	0.0062 (p>0.05)	-0.0110 (p>0.05)	-0.0053 (p>0.05)	0.0110 (p>0.05)
WE membership	0.0197 (p>0.05)	-0.0398 (p>0.05)	0.0387 (p>0.05)	-0.0255 (p>0.05)	0.0027 (p>0.05)
FFE phases	0.0312 (p>0.05)	-0.0194 (p>0.05)	-0.0240 (p>0.05)	-0.0681 (p>0.05)	-0.0411 (p>0.05)
Minimum Acceptable Diet	-0.0113 (p>0.05)	-0.0553 (p>0.05)	0.0008 (p>0.05)	-0.0631 (p<0.05)	-0.0569 (p<0.05)
School sustainability readiness score	0.0173 (p>0.05)	0.1115 (p<0.05)	-0.0348 (p>0.05)	0.0045 (p>0.05)	-0.0017 (p>0.05)
Classroom organization score	-0.0058 (p>0.05)	0.2241 (p<0.05)	0.0462 (p>0.05)	0.0762 (p<0.05)	0.0945 (p<0.05)
Instructional content score	-0.0535 (p>0.05)	0.0572 (p<0.05)	-0.0678 (p<0.05)	-0.1552 (p<0.05)	-0.1062 (p<0.05)
Classroom activity score	-0.0096 (p>0.05)	0.0402 (p>0.05)	-0.0822 (p<0.05)	-0.1201 (p<0.05)	-0.0768 (p<0.05)
Teaching methods score	0.0384 (p>0.05)	0.0135 (p>0.05)	-0.0252 (p>0.05)	-0.0929 (p<0.05)	-0.0382 (p>0.05)
Teacher's assessment method score	-0.0612 (p<0.05)	0.0605 (p<0.05)	-0.0696 (p<0.05)	-0.1847 (p<0.05)	-0.1429 (p<0.05)
Teaching materials score	-0.0622 (p<0.05)	0.0683 (p<0.05)	-0.0723 (p<0.05)	-0.1124 (p<0.05)	-0.0765 (p<0.05)
Student's use of library	-0.0101 (p>0.05)	-0.0883 (p>0.05)	-0.1342 (p<0.05)	-0.2015 (p>0.05)	-0.1704 (p<0.05)

31. Annexure 10 – Regression models on phonemic awareness

Table 102: Regression model for phonemic awareness scores – Socio-economic predictors (project area grade II)

Phonemic awareness	Coef.	Std. Err.	t	P>t	95% Conf. Int	
Sex of student	-1.040	2.195	-0.470	0.636	-5.360	3.281
FFE phase	0.480	1.258	0.380	0.703	-1.996	2.955
Literacy of parent	2.906	3.488	0.830	0.405	-3.958	9.771
Employment status of parent	-10.860	13.472	-0.810	0.421	-37.375	15.655
Households with bank a/c	5.296	3.291	1.610	0.109	-1.181	11.772
WE membership	-1.618	2.342	-0.690	0.490	-6.227	2.992
Minimum Acceptable Diet	0.959	2.255	0.430	0.671	-3.478	5.397
Constant	49.312	14.811	3.330	0.001	20.162	78.461

Table 103: Regression model for phonemic awareness scores - Socio-economic predictors (project area grade IV)

Phonemic awareness	Coef.	Std. Err.	t	P>t	95% Conf. Int	
Sex of student	-2.414	2.793	-0.860	0.388	-7.912	3.083
FFE phase	1.086	1.569	0.690	0.489	-2.002	4.174
Literacy of parent	3.843	4.882	0.790	0.432	-5.765	13.451
Employment status of parent	-10.293	25.467	-0.400	0.686	-60.415	39.829
Households with bank a/c	10.184	3.979	2.560	0.011	2.352	18.016
WE membership	1.274	3.056	0.420	0.677	-4.739	7.288
Minimum Acceptable Diet	-0.836	2.884	-0.290	0.772	-6.512	4.841
Constant	55.332	26.484	2.090	0.038	3.209	107.456

Table 104: Regression model for phonemic awareness - School level predictors (project area grade II)

Phonemic awareness	Coef.	Std. Err.	t	P>t	95% Conf. Int	
Sustainability readiness score	0.190	0.116	1.640	0.104	-0.040	0.420
Classroom organization score	0.117	0.053	2.190	0.030	0.011	0.222
Instructional content score	0.115	0.097	1.190	0.234	-0.076	0.306
Class activity score	0.011	0.117	0.090	0.928	-0.221	0.242
Teaching methods score	0.223	0.110	2.020	0.045	0.005	0.441
Teacher's assessment method score	-0.109	0.094	-1.160	0.246	-0.295	0.076
Teaching materials score	-0.185	0.089	-2.070	0.040	-0.361	-0.008
Use of library by student	7.934	3.560	2.230	0.027	0.897	14.971
Constant	11.434	11.260	1.020	0.312	-10.824	33.693

Table 105: Regression model for phonemic awareness – School level predictors (project area grade IV)

Phonemic awareness	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sustainability readiness score	0.124	0.155	0.800	0.423	-0.181	0.430
Classroom organization score	0.027	0.069	0.400	0.691	-0.108	0.163
Instructional content score	0.064	0.122	0.530	0.599	-0.177	0.306
Class activity score	0.223	0.148	1.510	0.134	-0.070	0.516
Teaching methods score	0.148	0.109	1.360	0.176	-0.067	0.363
Teacher's assessment method score	0.013	0.121	0.110	0.914	-0.226	0.253
Teaching materials score	-0.147	0.117	-1.250	0.212	-0.378	0.085
Use of library by student	2.914	4.405	0.660	0.509	-5.791	11.620
Constant	13.768	16.868	0.820	0.416	-19.566	47.102

32. Annexure 11 – Regression models on letter sound knowledge

Table 106: Regression model for letter sound knowledge scores – Socio-economic predictors (project district grade II)

Letter sound knowledge	Coef.	Std. Err.	t	P>t	95% Conf. Int	
Sex of student	4.280	1.665	2.570	0.011	1.003	7.556
FFE phase	-1.287	0.954	-1.350	0.178	-3.165	0.590
Literacy of parent	3.216	2.645	1.220	0.225	-1.990	8.422
Employment status of parent	3.378	10.217	0.330	0.741	-16.730	23.487
Households with bank a/c	0.189	2.496	0.080	0.940	-4.722	5.101
WE membership	2.289	1.776	1.290	0.199	-1.207	5.784
Minimum Acceptable Diet	0.071	1.710	0.040	0.967	-3.295	3.436
Constant	2.650	11.232	0.240	0.814	-19.456	24.756

Table 107: Regression model (1) for letter sound knowledge scores - Socio-economic predictors (project district grade IV)

Letter sound knowledge	Coef.	Std. Err.	t	P>t	95% Conf. Int	
Sex of student	-0.964	2.245	-0.430	0.668	-5.383	3.454
FFE phase	0.816	1.261	0.650	0.518	-1.666	3.297
Literacy of parent	6.650	3.924	1.690	0.091	-1.073	14.372
Employment status of parent	-1.931	20.468	-0.090	0.925	-42.215	38.354
Households with bank a/c	11.833	3.198	3.700	0.000	5.538	18.128
WE membership	-4.420	2.456	-1.800	0.073	-9.253	0.413
Minimum Acceptable Diet	-1.145	2.318	-0.490	0.622	-5.707	3.417
Constant	21.777	21.286	1.020	0.307	-20.116	63.670

Table 108: Regression model for letter sound knowledge scores – School level predictors (Project district grade II)

Letter sound knowledge	Coef.	Std. Err.	t	P>t	95% Conf. Int	
Sustainability readiness score	0.103	0.092	1.120	0.266	-0.079	0.284
Classroom organization score	0.026	0.042	0.610	0.542	-0.057	0.109
Instructional content score	0.094	0.076	1.240	0.218	-0.056	0.245
Class activity score	0.002	0.092	0.020	0.983	-0.181	0.184
Teaching methods score	0.373	0.087	4.290	0.000	0.201	0.545
Teacher's assessment method score	-0.135	0.074	-1.820	0.071	-0.281	0.012
Teaching materials score	-0.138	0.070	-1.970	0.051	-0.278	0.001
Use of library by student	10.279	2.807	3.660	0.000	4.729	15.829
Constant	-10.469	8.880	-1.180	0.240	-28.023	7.086

Table 109: Regression model for letter sound knowledge scores - School level predictors (Project district grade IV)

Letter sound knowledge	Coef.	Std. Err.	t	P>t	95% Conf. Int	
Sustainability readiness score	-0.210	0.125	-1.670	0.097	-0.457	0.038
Classroom organization score	0.196	0.056	3.520	0.001	0.086	0.306
Instructional content score	0.203	0.099	2.040	0.043	0.007	0.399
Class activity score	-0.115	0.120	-0.960	0.340	-0.352	0.122
Teaching methods score	0.006	0.088	0.070	0.944	-0.168	0.181
Teacher's assessment method score	0.048	0.098	0.480	0.629	-0.146	0.242
Teaching materials score	0.074	0.095	0.780	0.435	-0.113	0.262
Use of library by student	4.428	3.570	1.240	0.217	-2.627	11.483
Constant	17.914	13.670	1.310	0.192	-9.100	44.928

33. Annexure 12 – Regression models for devised words identification

Table 110: Regression model for devised words identification score - Socio-economic predictors (Project district grade II)

Devised words identification	Coef.	Std. Err.	t	P>t	95% Conf. Int	
Sex of student	7.606	2.615	2.910	0.004	2.459	12.752
FFE phase	-2.273	1.498	-1.520	0.130	-5.222	0.676
Literacy of parent	1.809	4.155	0.440	0.664	-6.368	9.986
Employment status of parent	0.924	16.048	0.060	0.954	-30.661	32.509
Households with bank a/c	-0.904	3.920	-0.230	0.818	-8.619	6.811
WE membership	2.574	2.790	0.920	0.357	-2.917	8.064
Minimum Acceptable Diet	3.328	2.686	1.240	0.216	-1.958	8.614
Constant	6.755	17.643	0.380	0.702	-27.968	41.478

Table 111: Regression model for devised words identification score - Socio-economic predictors (Project district grade IV)

Devised words identification	Coef.	Std. Err.	t	P>t	95% Conf. Int	
Sex of student	-5.406	3.407	-1.590	0.114	-12.112	1.299
FFE phase	1.195	1.914	0.620	0.533	-2.571	4.962
Literacy of parent	3.496	5.955	0.590	0.558	-8.224	15.215
Employment status of parent	28.981	31.063	0.930	0.352	-32.155	90.116
Households with bank a/c	9.067	4.854	1.870	0.063	-0.486	18.620
WE membership	3.999	3.727	1.070	0.284	-3.336	11.334
Minimum Acceptable Diet	-2.509	3.518	-0.710	0.476	-9.433	4.414
Constant	9.823	32.303	0.300	0.761	-53.753	73.399

Table 112: Regression model for devised words identification score – School level predictors (Project district grade II)

Devised words identification	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sustainability readiness score	-0.127	0.148	-0.860	0.393	-0.419	0.166
Classroom organization score	0.016	0.068	0.240	0.813	-0.118	0.150
Instructional content score	0.095	0.123	0.770	0.443	-0.148	0.337
Class activity score	0.056	0.149	0.370	0.709	-0.239	0.350
Teaching methods score	0.306	0.140	2.180	0.031	0.029	0.584
Teacher's assessment method score	-0.065	0.120	-0.540	0.588	-0.301	0.172
Teaching materials score	-0.126	0.114	-1.110	0.269	-0.351	0.098
Use of library by student	14.499	4.527	3.200	0.002	5.549	23.449
Constant	3.501	14.321	0.240	0.807	-24.809	31.810

Table 113: Regression model for devised words identification score – School level predictors (Project district grade IV)

Devised words identification	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sustainability readiness score	-0.027	0.188	-0.140	0.885	-0.399	0.344
Classroom organization score	0.034	0.083	0.400	0.688	-0.131	0.198
Instructional content score	0.317	0.149	2.130	0.035	0.023	0.611
Class activity score	-0.159	0.180	-0.880	0.379	-0.515	0.197
Teaching methods score	0.118	0.132	0.890	0.375	-0.144	0.379
Teacher's assessment method score	-0.431	0.147	-2.930	0.004	-0.722	-0.140
Teaching materials score	-0.335	0.142	-2.360	0.020	-0.616	-0.054
Use of library by student	10.169	5.356	1.900	0.060	-0.415	20.752
Constant	78.117	20.507	3.810	0.000	37.593	118.641

34. Annexure 13 – Regression models for oral passage reading

Table 114: Regression model for oral passage reading scores – Socio-economic predictors (Project district grade II)

Oral reading	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sex of student	9.410	3.810	2.470	0.014	1.912	16.908
FFE phase	-5.109	2.183	-2.340	0.020	-9.405	-0.812
Literacy of parent	8.594	6.053	1.420	0.157	-3.319	20.507
Employment status of parent	8.028	23.380	0.340	0.732	-37.988	54.043
Households with bank a/c	-4.868	5.711	-0.850	0.395	-16.108	6.372

WE membership	-5.528	4.064	-1.360	0.175	-13.527	2.472
Minimum Acceptable Diet	-6.067	3.913	-1.550	0.122	-13.768	1.634
Constant	27.714	25.703	1.080	0.282	-22.874	78.301

Table 115: Regression model for oral passage reading scores – Socio-economic predictors (Project district grade IV)

Oral reading	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sex of student	1.723	3.956	0.440	0.663	-6.062	9.508
FFE phase	-0.026	2.222	-0.010	0.991	-4.399	4.347
Literacy of parent	6.000	6.913	0.870	0.386	-7.606	19.606
Employment status of parent	43.549	36.064	1.210	0.228	-27.428	114.527
Households with bank a/c	2.194	5.635	0.390	0.697	-8.897	13.285
WE membership	0.364	4.327	0.080	0.933	-8.152	8.880
Minimum Acceptable Diet	-8.118	4.084	-1.990	0.048	-16.156	-0.081
Constant	13.391	37.504	0.360	0.721	-60.420	87.203

Table 116: Regression model for oral passage reading scores - School level predictors (Project district grade II)

Oral reading	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sustainability readiness score	0.379	0.216	1.750	0.082	-0.048	0.806
Classroom organization score	0.128	0.099	1.290	0.198	-0.068	0.324
Instructional content score	-0.459	0.179	-2.560	0.012	-0.814	-0.105
Class activity score	0.111	0.217	0.510	0.610	-0.319	0.541
Teaching methods score	0.231	0.205	1.130	0.261	-0.174	0.636
Teacher's assessment method score	-0.062	0.175	-0.360	0.723	-0.407	0.283
Teaching materials score	-0.067	0.166	-0.400	0.688	-0.394	0.261
Use of library by student	12.097	6.611	1.830	0.069	-0.972	25.166
Constant	15.470	20.912	0.740	0.461	-25.868	56.809

Table 117: Regression model for oral passage reading scores - School level predictors (Project district grade IV)

Oral reading	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sustainability readiness score	0.068	0.194	0.350	0.726	-0.315	0.452
Classroom organization score	0.016	0.086	0.190	0.852	-0.154	0.186
Instructional content score	0.030	0.154	0.190	0.846	-0.274	0.333
Class activity score	-0.001	0.186	0.000	0.997	-0.368	0.367
Teaching methods score	0.173	0.137	1.270	0.207	-0.097	0.443
Teacher's assessment method score	-0.528	0.152	-3.480	0.001	-0.829	-0.228
Teaching materials score	-0.318	0.147	-2.160	0.032	-0.608	-0.028
Use of library by student	11.086	5.528	2.010	0.047	0.163	22.009
Constant	101.080	21.165	4.780	0.000	59.255	142.905

35. Annexure 14 – Regression models for reading comprehension

Table 118: Regression model for reading comprehension scores – Socio-economic predictors (Project district grade II)

Reading comprehension	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sex of student	5.822	3.022	1.930	0.055	-0.126	11.770

FFE phase	-2.188	1.732	-1.260	0.207	-5.597	1.220
Literacy of parent	6.335	4.802	1.320	0.188	-3.116	15.786
Employment status of parent	18.221	18.548	0.980	0.327	-18.284	54.725
Households with bank a/c	-3.797	4.531	-0.840	0.403	-12.713	5.120
WE membership	-1.417	3.224	-0.440	0.661	-7.763	4.929
Minimum Acceptable Diet	-1.918	3.104	-0.620	0.537	-8.027	4.192
Constant	0.726	20.391	0.040	0.972	-39.406	40.858

Table 119: Regression model for reading comprehension scores – Socio-economic predictors (Project district grade IV)

Reading comprehension	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sex of student	-0.947	3.548	-0.270	0.790	-7.930	6.036
FFE phase	0.009	1.993	0.000	0.996	-3.913	3.931
Literacy of parent	3.287	6.201	0.530	0.597	-8.918	15.491
Employment status of parent	50.674	32.348	1.570	0.118	-12.991	114.340
Households with bank a/c	7.081	5.055	1.400	0.162	-2.867	17.030
WE membership	3.108	3.881	0.800	0.424	-4.530	10.747
Minimum Acceptable Diet	-5.678	3.663	-1.550	0.122	-12.888	1.531
Constant	-8.405	33.640	-0.250	0.803	-74.613	57.802

Table 120: Regression model for reading comprehension scores – School level predictors (Project district grade II)

Reading comprehension	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sustainability readiness score	0.097	0.163	0.600	0.552	-0.225	0.419
Classroom organization score	0.154	0.075	2.070	0.040	0.007	0.302
Instructional content score	-0.142	0.135	-1.050	0.295	-0.409	0.125
Class activity score	0.020	0.164	0.120	0.901	-0.303	0.344
Teaching methods score	0.259	0.154	1.680	0.096	-0.046	0.564
Teacher's assessment method score	-0.086	0.132	-0.650	0.514	-0.346	0.174
Teaching materials score	-0.151	0.125	-1.210	0.230	-0.398	0.096
Use of library by student	11.391	4.980	2.290	0.024	1.546	21.235
Constant	14.850	15.753	0.940	0.347	-16.291	45.991

Table 121: Regression model for reading comprehension scores – School level predictors (Project district grade IV)

Reading comprehension	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sustainability readiness score	0.148	0.188	0.780	0.434	-0.224	0.519
Classroom organization score	0.026	0.083	0.310	0.760	-0.139	0.190
Instructional content score	0.040	0.149	0.270	0.791	-0.255	0.334
Class activity score	0.184	0.180	1.020	0.309	-0.172	0.540
Teaching methods score	0.047	0.132	0.350	0.725	-0.215	0.308
Teacher's assessment method score	-0.323	0.147	-2.190	0.030	-0.614	-0.032
Teaching materials score	-0.195	0.142	-1.370	0.172	-0.476	0.086
Use of library by student	9.959	5.358	1.860	0.065	-0.629	20.548
Constant	50.461	20.517	2.460	0.015	9.918	91.004

36. Annexure 15 – Regression models for overall EGRA scores

Table 122: Regression model for overall EGRA scores - Socio-economic predictors (Project district grade II)

Mean EGRA	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sex of student	5.216	2.106	2.480	0.014	1.070	9.361
FFE phase	-2.076	1.207	-1.720	0.087	-4.451	0.300
Literacy of parent	4.572	3.346	1.370	0.173	-2.014	11.158
Employment status of parent	3.938	12.926	0.300	0.761	-21.502	29.378
Households with bank a/c	-0.817	3.157	-0.260	0.796	-7.031	5.397
WE membership	-0.740	2.247	-0.330	0.742	-5.162	3.683
Minimum Acceptable Diet	-0.725	2.163	-0.340	0.738	-4.983	3.532
Constant	17.431	14.210	1.230	0.221	-10.537	45.399

Table 123: Regression model for overall EGRA scores - Socio-economic predictors (Project district grade IV)

Mean EGRA	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sex of student	-1.602	2.488	-0.640	0.520	-6.499	3.295
FFE phase	0.616	1.398	0.440	0.660	-2.135	3.367
Literacy of parent	4.655	4.349	1.070	0.285	-3.904	13.214
Employment status of parent	22.196	22.685	0.980	0.329	-22.451	66.843
Households with bank a/c	8.072	3.545	2.280	0.024	1.095	15.048
WE membership	0.865	2.722	0.320	0.751	-4.492	6.222
Minimum Acceptable Diet	-3.657	2.569	-1.420	0.156	-8.713	1.399
Constant	18.384	23.591	0.780	0.436	-28.046	64.814

Table 124: Regression model for overall EGRA scores - School level predictors (Project district grade II)

Mean EGRA	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sustainability readiness score	0.128	0.116	1.100	0.272	-0.102	0.358
Classroom organization score	0.088	0.053	1.650	0.101	-0.017	0.194
Instructional content score	-0.059	0.097	-0.610	0.540	-0.251	0.132
Class activity score	0.040	0.117	0.340	0.733	-0.191	0.271
Teaching methods score	0.278	0.110	2.520	0.013	0.060	0.497
Teacher's assessment method score	-0.091	0.094	-0.970	0.332	-0.277	0.094
Teaching materials score	-0.133	0.089	-1.490	0.138	-0.310	0.043
Use of library by student	11.240	3.560	3.160	0.002	4.202	18.278
Constant	6.957	11.262	0.620	0.538	-15.306	29.221

Table 125: Regression model for overall EGRA scores - School level predictors (Project district grade IV)

Mean EGRA	Coef.	Std. Err.	T	P>t	95% Conf. Int	
Sustainability readiness score	0.021	0.133	0.160	0.877	-0.242	0.283
Classroom organization score	0.060	0.059	1.010	0.313	-0.057	0.176
Instructional content score	0.131	0.105	1.240	0.215	-0.077	0.338
Class activity score	0.026	0.127	0.210	0.836	-0.225	0.278
Teaching methods score	0.098	0.094	1.050	0.294	-0.086	0.283
Teacher's assessment method score	-0.244	0.104	-2.350	0.020	-0.450	-0.039
Teaching materials score	-0.184	0.100	-1.830	0.069	-0.383	0.014
Use of library by student	7.711	3.783	2.040	0.043	0.235	15.188
Constant	52.268	14.487	3.610	0.000	23.640	80.896

37. Annexure 16 – School Sustainability Readiness Assessment Tool

The school sustainability and readiness assessment tool was administered to all the 100 primary schools under assessment (50 project and 50 comparison schools). The tool aimed to assess the overall performance of head teachers, school committee members and local government officials in managing of the school administration. The following table summarizes the response form this tool:

Table 126: School sustainability and readiness assessment table

School Graduation and Sustainability Readiness Tool								
Target Groups	#	Responsibilities	Comparison N (Yes)	Comparison N (Partial)	Comparison N (No)	Project N (Yes)	Project N (Partial)	Project N (No)
Teachers	1	Health and Store Teachers ensure clean and sanitary classroom environment, store room, kitchen, latrine, and surrounding school grounds (e.g. hand washing station, trash pit, dish drying rack, water available in latrines)	7	41	2	19	28	3
	2	Store Teachers consistently and accurately record school meals, attendance rates, enrollment figures, and food stock to ensure proper management of school feeding	5	15	30	32	6	12
	3	Head Teachers create sources for school income, which are used for school expenses, school feeding, and education interventions	12	25	13	21	17	12
	4	Head Teachers properly document the school budget and expenditures and ensure transparency	22	15	13	32	11	7
	5	School Literacy Teaching Coaches make and document classroom observations on teachers' teaching and students' learning and also provide feedback to teachers	20	23	7	24	17	9
	6	Teachers create and/or provide supplementary reading materials or literacy instruction materials (e.g. newspaper, counting systems)	15	22	13	13	29	8
	7	Teachers document student health issues and health-related absences	15	12	23	12	24	14
	8	Teachers conduct individual student reading assessments and document results on a regular basis	35	11	4	29	13	8
	9	Agriculture Teachers utilize school demonstration plots to promote improved agriculture production practices and harvest food to be contributed to school meals	12	15	23	15	12	23

School Graduation and Sustainability Readiness Tool								
Target Groups	#	Responsibilities	Comparison N (Yes)	Comparison N (Partial)	Comparison N (No)	Project N (Yes)	Project N (Partial)	Project N (No)
	10	Agriculture teachers promote agroforestry practices (fruit trees and/or multipurpose trees) and have tree nurseries on school grounds	9	21	20	9	12	28
	11	Head Teachers and/or Literacy Teaching Coaches conduct at least 1 training to fellow teachers on literacy instruction and/or commodity management	26	19	5	29	14	7
	12	Head Teacher actively reports to school committee, VGC, and parent groups (e.g. WE groups, cascade groups, farmer groups) on school-related activities, issues, and data	43	6	1	43	7	0
	13	Head Teachers routinely participate in municipal councils and in other activities with local, private stakeholders in order to inform, advocate/develop resources, and raise awareness of school issues and/or needs (i.e. participation in WDC meetings)	42	8	0	43	5	2
	SUB-TOTAL		1052	466	0	1284	390	0
	TOTAL POINTS FOR SCHOOL LEVEL			1518			1674	
School Committee	14	Parent-Teachers-Partnership and/ or School Feeding sub-committee handles food management at school: preparation and storage, ensure school food preparation and cooking is safe and hygienic, ensure use of clean water/UWW	2	12	36	19	12	19
	15	School Committee handles food management for community-provided commodities: transportation, amount of commodities needed each month, rations/portions, collect and record parent contributions (cash, in-kind, food, inputs) which follow the phasing over school meal plan	3	5	42	15	10	25
	16	SWASH sub-committee actively ensures safe and clean water is used at school for cooking and drinking, and ensures maintenance and hygiene management of school latrines and water tanks/wells	3	6	41	15	14	21
	17	School Committee actively provides feedback on all school activities to VGC and parent groups (e.g. WE groups, cascade groups, farmer groups)	43	5	2	40	9	1

School Graduation and Sustainability Readiness Tool								
Target Groups	#	Responsibilities	Comparison N (Yes)	Comparison N (Partial)	Comparison N (No)	Project N (Yes)	Project N (Partial)	Project N (No)
	18	School Committee develops school needs assessments, creates action plans for resource development, and ensures transparency of budget management/financial records to sustain school feeding and other school needs	24	21	5	20	22	8
	19	School Committee routinely meets to respond to school-related activities and issues and ensures at least one member of VGC is involved in meetings (minutes should be available)	47	3	0	47	3	0
	SUB-TOTAL		488	104	0	624	140	0
	TOTAL POINTS FOR SCHOOL COMMITTEE		592			764		
Village and Community	20	VGC holds routine community meetings to manage parent contribution support (ensures community is sensitized and parents are contributing the required contributions to the School Committee)	14	19	17	20	17	13
	21	Parents actively contribute the minimal amounts (determined by school committee) of monetary (i.e. payment of cooks/guards, contributing money for food commodities) and in-kind (i.e. firewood, plates, water, sugar, milk, seed inputs, etc.) contributions	5	9	36	9	25	16
	SUB-TOTAL		76	56	0	116	84	0
	TOTAL POINTS FOR VILLAGE/COMMUNITY LEVEL		132			200		
Ward and Division Officials	22	WEC, WEO, and Division Secretary conduct and document routine follow-up visits at the school-level for all activities	30	20	0	35	15	0
	23	Ward officials (e.g. Ward Education Coordinator, Ward Executive Officer, Community Health Worker, Ward Agricultural Extension Officer, Ward Community Development Officer) actively meet with parents to teach pro-education, health, School Water Sanitation.	5	26	19	10	29	11
	24	WEC, WEO, and Division Secretary attend School Committee meetings to provide feedback from routine visits, identify learning exchange opportunities, and provide additional support to schools and feedback/minutes are given to District Councils	26	20	4	28	21	1

School Graduation and Sustainability Readiness Tool								
Target Groups	#	Responsibilities	Comparison N (Yes)	Comparison N (Partial)	Comparison N (No)	Project N (Yes)	Project N (Partial)	Project N (No)
	25	WEC, WEO, and Division Secretary identify other local partners and establish roles and responsibilities (i.e. EQUIP, religious institutions, local NGOs, etc.)	37	11	2	28	22	0
		SUB-TOTAL	392	154	0	404	174	0
		TOTAL POINTS FOR WARD/DIVISION LEVEL	546			578		
Scoring (Yes=4pts, Partial=2pts, No=0pts)		Total Points for Sustainability Readiness	2788			3216		
		Sustainability Readiness Percentage	55.76			64.32		

38. Annexure 17 – EGRA tools

Identification of sounds

Read aloud each group of words students say which word amongst others begin with a different sound.

This is a listening exercise. I will say three words. One begins with a different sound; I want you to tell me; which word begins with a different sound?

1. For example;
“bata”, “dada”, “baba”. Which word begin with a different sound?

If a student answers correctly say, very good, “dada” begins with a different sound.

If a student does not answer correctly, say: “bata”, “dada”, “baba”. “Dada” begins with a different sound than “bata” and “baba.”

2. Now try another word: “chura,” “chupa,” “kula.” Which word begins with a different sound?

If a student answers correctly say, very good “kula” begins with a different sound.

This is a timed section. The procedure to stop early: stop the exercise if a student does not have correct answers in the first five sets.

Which word begins with a different sound? [read each group once only]							
1	Meno	Soma	Saba	[Meno]	☐ correct answer	☐ incorrect answer	☐ silence
2	Yeye	Yona	Kona	[Kona]	☐ correct answer	☐ incorrect answer	☐ silence
3	Kile	Kama	Baba	[Baba]	☐ correct answer	☐ incorrect answer	☐ silence
4	Wewe	Tatu	Watu	[Tatu]	☐ correct answer	☐ incorrect answer	☐ silence
5	Cheza	Juma	Jiko	[Cheza]	☐ correct answer	☐ incorrect answer	☐ silence
6	Ndizi	Ndege	Mbuzi	[Mbuzi]	☐ correct answer	☐ incorrect answer	☐ silence

7	Peku	Saba	Paka	[Saba]	☐ correct answer	☐ incorrect answer	☐ silence
8	Viti	Kanzu	Kuni	[Viti]	☐ correct answer	☐ incorrect answer	☐ silence
9	Nguo	Ngazi	Mbegu	[Mbegu]	☐ correct answer	☐ incorrect answer	☐ silence
10	Pipi	Kuni	Panzi	[Kuni]	☐ correct answer	☐ incorrect answer	☐ silence
1	Number of correct responses:						
2	Put a mark on this box if the activity was stopped because a student does not have correct answers within the first five sets.						

Understanding of the letter sound

Show the student a list of letters in the student's book. Then say the following:

Start timing when the student reads the sounds of the first letters. Follow his reading using a pencil then put a mark (/) on each letter he could not read. If a student does self-correction, that answer is correct. If you had corrected a child in one of the answers, put (O) for each letter and move on.

You are supposed to remain silent, except when giving answers to a student as follows:

- If the student hesitates for more than 3 seconds, give an answer and direct the student to the next letter then say; ***“Please continue”***. Then put a mark to show that it is the correct answer.
- If a child says the name of the letter, instead of its sound, give the sound of the letter and say: ***“Please say the sound of the letter”***. Put a stroke (/) to the letter you said yourself. This opportunity should be given only once for that exercise.

AFTER 60 SECONDS, SAY: “Stop reading.” Then put brackets () in the last letter you read. Then continue with the next exercise.

The procedure to stop reading early: If a student does not get even a single correct answer in the whole top line, even by self-correction, say “Thank you!” and continue with next exercise.

Examples: **n** **E** **W**

i	T	m	I	a	K	T	K	n	L	
u	i	B	A	N	U	y	U	Y	g	(10)
U	Z	w	A	O	m	i	Gh	M	e	(20)
R	W	S	W	n	ch	a	I	u	i	(30)
th	Z	D	A	o	i	b	A	N	o	(40)
s	n	M	K	i	h	N	I	n	A	(50)
u	a	A	I	m	L	a	E	a	f	(60)
a	e	A	K	t	E	a	I	Ny	K	(70)
a	h	i	L	sh	O	n	A	V	ng'	(80)
g	L	d	A	i	Dh	a	A	U	P	(90)
i	T	m	I	a	K	T	K	n	L	(100)

1	Time left in speed watch (total SECONDS):	
2	Put a mark on this box if reading was stopped because a student did not read correctly any of the letters given in the first line	
3	Number of correct answers:	

Identifying devised words

Show to a student list of devised words in the student book, then say,

This paper has devised words. I would like you to read all words you can. Do not read single letters but read the whole word. For example, this devised word is: “juna”

Let us practice: Please read this word [show the word “huka”]

[If the student says “huka”, say]: **“Very good: “huka”**

[If the student could not read the word “huka” good, say]: **this devised word is “huka.”**

Now, let us try another devised word: Please read the following word *show the word: “fisa”*.

[If a student says “fisa ”, say]: **“Very good: “fisa”**

[If a student could not read the word “fisa” good, say]: **This devised word is “fisa.”**

When I say “Start”, read these words as fast as you can but carefully. Read the words from the left side towards the right side of this page, starting from the first line. I will remain silent listening to you except when you need help. Have you understood what you should do? Are you ready? Start.

Start timing as soon as the student begins to read the first word. Follow up his reading using a pencil, then put a stroke (/) in each word that a student did not read correctly. If a student self corrects, that answer is correct. If you corrected the student in the self-corrected answer, then put a circle (O) to that word and then move on.

You are supposed to be silent except when you are answering to a student as follows:

- If a student hesitates for about 3 seconds, give an answer then direct him to the next word and say, **“Please continue”**. For every word, you read to the student, put a mark to show that he did not get the correct answer.

AFTER 60 SECONDS SAY, *“Please, stop reading.”* Then put brackets () in the last word a student read.

The procedure to stop reading early: If a student did not read all words in the first line correctly, say

“Thank you!” stop the activity, then put a mark in the box below this page and continue with the next section.

Examples: **juna fisa huka**

1	2	3	4	5	
Zefu	Vicha	choyu	mwela	nzinga	(5)
gowe	Kengu	nyuza	vube	Vili	(10)
mapa	Nepu	ndise	Shifi	mtozo	(15)
rubwa	Mwate	chena	fipe	hungu	(20)
mbeta	Ripi	sine	riki	Gazu	(25)
ndweku	Ndami	msino	bwara	Kabe	(30)
nziki	Howe	honzi	sharu	leye	(35)
toso	Regu	mtofi	Kine	Ngiso	(40)
hefa	Ndaho	josa	kenzi	Dusu	(45)
yota	Chuso	rime	ngute	Kuvi	(50)

1	Time left until the end of reading (number of SECONDS):	
2	Put a mark in this box if the reading activity was stopped because a student did not read any word accurately in the first line.	
3	Number of correct answers:	

Reading and comprehension

Section 8 (a): Reading a Story Aloud

This is a short story. I would like you to read it aloud, as fast as you can but carefully. When you finish reading, I will ask you questions about what you read. Have you understood what you should do? When I say “Start,” read the story to the best of your knowledge. I will remain silent and listen to you. Are you ready? Start.

Show the student a story in the student’s book. Then say this,

Start timing as soon as the student begins to read the first word. Follow up his reading with a pencil then put a stroke (/) in each word that he/she did not read correctly. If you had corrected the student in the answer that he/she self-corrected, circle that word (O) then continue. Do not say anything, except when a student hesitates for 3 seconds, then you will now read for him/her then show next word and say, “Please continue.” For every word you read to the student, put a mark to show that he/she did not get the correct answer.

After 60 seconds say, **“Please, stop reading.”** Then put brackets () in the last word a student read.

The procedure to stop reading early: If a student could not read accurately all the words in the first line, say, **“Thank you!”** stop the activity, and then draw a line.

Section 8 (b). Reading and Comprehension

After completing 60 seconds or if a student finishes reading the story, **REMOVE** the story in front of the student, and then ask the first question below.

Give the student up to 15 seconds to answer the question, put a correct mark according to the student’s answer, and then continue to the next question. Read questions for each line until the brackets that show where the student stopped reading.

SAY: Now I will ask you questions about the story you just read. Try to answer questions to the best of your knowledge.

8a.1	The remaining time until the end of reading [number of SECONDS]:	
8a.2	Put a mark in the box if the reading activity was stopped because a student could not read accurately any word on the first line.	

Sl. No.	STORY 1: READING	QUESTIONS	CORRECT ANSWER	INCORRECT ANSWER	SILENCE
1	Juma likes to play football. He is a brave player. 10	What type of game did Juma like to play? [football]			
2	Last week his team played with neighbor's team. 18	Which team played Juma's team? [played with neighbor's team]			
3	Juma scored three goals. They cheered up and rewarded him. Day before yesterday, he got injured while exercising, he hurt his leg. 32	What happened to Juma when he was exercising? [Got hurt, hurt his leg, someone hurt his leg]			
4	They took him to the hospital. Doctor told him to rest for two days. Juma was so sad. He thought he would miss Saturday's game. 52	What did the doctor tell Juma to do? [To rest/to rest for two days]			
5	When he went back to the hospital on Friday, doctor said his leg had healed. Juma was very happy. 62	Why was Juma so happy? [because he was told he is healed / now he could play football]			