WFP'S USDA McGovern -Dole International Food for Education and Child Nutrition Program's Support in Kenya from 2016 to 2020

Baseline Report – Final

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Executive Summary

Background

This report summarizes the baseline findings for Kenya's World Food Programme (WFP) implemented School Meals Programme (SMP). The WFPSMP is funded by the United States Department of Agriculture's (USDA) – Mc Govern Dole (MGD) International Food for Education and Child Nutrition Programme. It consists of a USD 28 million grant for a period of five years (2016-2020) which covers the bulk of annual requirements[1], although other donors also support school feeding in Kenya. The WFPSMP seeks to contribute to improved enrollment, retention and attentiveness at school level. These outcomes are expected ultimately to contribute to improved literacy and numeracy in primary schools in the intervention areas.

Purpose

The purpose of the baseline is to establish a clear benchmark for WFP and her partners with information against project indicators. The baseline thus:

- Records the situation at the start of the intervention phase in terms of output and performance indicators.
- Provides a situational analysis of the conditions for implementation of the SMP.
- Forms the foundation for planned midterm and final evaluations.

The baseline takes place at a stage when WFP has since 2009 been handing over the management of school feeding in other areas of the country to the Government of Kenya (GoK) run Home Grown School Meals Programme (HGSMP). HGSMP schools receive funding from the GoK to procure food locally. By the end of the MGD funded WFPSMP programme in 2020 all WFP schools will have been handed over to the GoK and integrated into the HGSMP.

Methodology

An inception report for this study outlined the proposed methodology and was approved by the Internal Committee and USDA. The inception phase concluded with the finding that a quasi-experimental design was feasible for this study given that it was possible to get a match between the intervention and control groups.

The inception stage also resulted in the agreement to use a three-arm quasi-experimental design which involves doing two sets of comparison, namely between WFPSMP schools and a group of WFPSMP control schools, and a second comparison between WFPSMP schools with HGSMP schools. The first comparison (WFPSMP and control schools) provides the means for examining what differences the SMP makes to key education and nutrition indicators. The HGSMP versus WFPSMP arm of the study provides a means to assess progress on sustainability, given that HGSMP schools have been handed over to the GoK. The comparison is therefore meant to inform the transitioning of WFPSMP to HGSMP.

The baseline was undertaken using various primary data collection tools at school level. Secondary data was collected from Government and WFP records as well as through interviews.

Data for the baseline were collected in March and April of 2017. Selected control and

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[1] In 2016 and 2017 USDA's contribution covered 68 percent of the contributions. Other main donors (in terms of volume of funding) were Canada, Germany, Japan, Australia,

HGSMP schools were matched against WFPSMP schools using propensity score matching. Four main data collection tools were used which included a tool to measure literacy and numeracy. Data collection covered a sample of 5130 pupils and an equal number of parents in 90 schools. Sampling took place using a two-step sampling process, across the three arms of the study. Data was collected in five out of the six targeted Arid and Semi-Arid Lands (ASAL) counties (Garissa, Turkana, Mandera, West Pokot, and Wajir).

Overview of findings
Characteristics of the schools

A comparison of characteristics of the schools established differences in terms of the following conditions in the three sets of schools:

- A significantly higher proportion of WFPSMP schools had a storage facility (82.6%) compared to control schools (43.5%).

- A significantly higher proportion of HGSMP schools had a large enough kitchen for preparing food for pupils (82.6%) compared to WFPSMP schools (43.5%).

- A significantly higher proportion of WFPSMP schools indicated that most pupils wash their hands (81.8%) compared to control schools (33.3%). Similarly, a significantly higher proportion of WFPSMP schools indicated that most pupils wash their hands (83.3%) compared to HGSMP schools (40.0%)[2].

- A significantly higher proportion of WFPSMP schools indicated that their cook is trained in food storage and handling (47.8%) compared to control schools (17.4%). A significantly lower proportion of WFPSMP schools indicated that their cook is trained in food storage and handling (17.4%) compared to HGSMP schools (60.9%).

There were no significant differences in other entry characteristics of the three groups of schools.[3]

The next section examines the situation at baseline against each of the main MGD strategic objectives and high level indicators. In line with the objectives of the baseline, each set of results reports first on the comparison between the WFPSMP schools and the control group, followed by the comparison between HGSMP schools and the WFPSMP schools.

MGD SO 1: Improved literacy of school age children

This indicator compared literacy scores in English and Kiswahili and numeracy scores at baseline for children across the three arms of the study using the UWEZO literacy and numeracy tool. The test involved doing computations (for mathematics) and reading and comprehension of a text (in English and Kiswhahili) at grade 2 level, by children in grades 3 to 8.

The results show that children in the control arm outperformed the children in the

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[2] It is important to note that there are two sets of WFP SMP school, one set matched with control schools and the other set matched with HGSMP schools and thus different percentages for WFP SMP schools

[3] Other characteristics included comparing data on: teacher attendance; pupil attendance; the proportion of pupils completing the last grade of primary; the status of the kitchen; the availability of fuel saving stoves; the water supply; sanitation conditions, and the presence of library facilities.

WFPSMP schools in English literacy level, in Kiswahili literacy, and in numeracy on the highest category of these tests.[4]

Table 1 - Performance of children in class 3 to 8 on class 2 tests across WFPSMP and Control schools

English Literacy		Kiswahili		Numeracy	
Control	WFPSP	Control	WFPSP	Control	WFPSP
55.6%	40.6%	66.0%	51.2%	73.5%	60.9%

The baseline also shows that children in the HGSMP outperformed the children in WFPSMP schools in English literacy level, in Kiswahili literacy, and in numeracy, in the highest category of these tests.

Table 2 - Performance of children in class 3 to 8 on class 2 tests across WFPSMP and HGSMP schools

English Literacy		Kiswahili		Numeracy	
HGMSP	WFPSP	HGMSP	WFPSP	HGMSP	WFPSP
64.6%	45.0%	74.9%	53.5%	77.7%	60.1%

MGD 1.2: Improved Attentiveness

Regardless of type of school, somewhat less than half of the children in the sample (43.0%) indicated that they sometimes find it difficult to concentrate in class.

The proportion of children who sometimes find it difficult to concentrate in class was significantly higher in the control arm (46.4%) than in the WFPSMP schools (41.1%)[5]. This percentage was also significantly higher in the HGSMP arm (43.5%) than in the WFPSMP schools (37.4%). Stratification by gender revealed consistent results in both cases. Across all groups, "I am hungry", followed by "I am feeling sick" ranked as the two most prevalent explanations for why children at times find it difficult to concentrate in class.

MGD 1.2.1 Reduced Short-Term Hunger

Just over one-third of the parents/guardians (38.7%) across all groups of schools indicated their children ate food daily (in the last week) *before going to school.*

The proportion of parents/guardians who indicated their children ate food daily (in the last week) before going to school was significantly higher in control schools

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[4] The UWEZO literacy test categorizes capacity according to the whether the pupil can read 'nothing', only a 'word', only a 'sentence', or a 'story'. The highest category therefore corresponds to being able to read the story that is part of the test. Similarly, in numeracy the 'highest' UWEZO category skill is division (after addition, subtraction and multiplication).

[5] Please note that as the denominators are different for some variables a small percentage difference in one part of the analysis may be significant, while it may not be significant in other analyses where the denominator is much lower.

(38.0%) than WFPSMP schools (33.0%). This proportion was also higher among children in the HGSMP schools (43.2%) when compared with WFPSMP (38.7%) schools.

Looking at Food Consumption Scores (FCS)[6], over a third of the children (39.5%) across all groups resided in households with acceptable FCS, another third (32.2%) lived in households with borderline consumption and approximately three out of 10 children (28.3%) were living in households with poor consumption scores. Additional analysis established that the proportion of households with acceptable FCS was significantly higher among male parents/guardians (42.9%) than female parents/guardians (38.2%). It was also higher among parents/guardians with higher levels of education (college/university and technical), and lower among those without education or who had not completed primary level. No significant difference in FCS was found between children in the control and WFPSMP group and between those in the HGSMP and the WFPSMP.

There was no significant difference in coping strategies between the three arms of the study (33.1% for the control schools versus 32.0% for the WFPSMP schools on the first comparison, and 35.2% and 35.6% respectively in the HGSMP versus WFPSMP comparison). In order of importance, the reported coping strategies included: purchase food on credit (80.8%); reliance on less preferred and less expensive foods (80.6%); reduce number of meals eaten in a day (67.4%); limit portion size at mealtimes (66.2%); borrow food, or rely on help from a friend or relative (64.9%); restrict consumption by adults in order for small children to eat (50.6%); and skip entire days without eating (42.3%). Coincidentally, withdrawing children from school did not feature in the coping mechanisms cited.

MGD 1.2.1.1/1.3.1.1.Increased Access to Food (School Feeding)

Approximately half of the parents/guardians reported that their children have been receiving school meals at school *in the current school year* (2017). The proportions were consistent among boys and girls.

The proportion of parents/guardians who reported that their child had been receiving school meals (at school) *in the current school year* (2017), was significantly higher in WFPSMP (59.3%) schools compared to control schools (20.0%). The proportion was also significantly higher in HGSMP (80.4%) than in WFPSMP (55.6%).[7]

Two out of five of the parents/guardians reported that the school where their child was learning was serving food *during the survey week*. WFPSMP (51.7%) schools were

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[6] The "Food consumption score" is a "score calculated using the frequency of consumption of different food groups consumed by a household during the 7 days before the survey" (WFP (2008). Food Consumption Analysis. WFP/VAM, p.8). Details of the methodology can be found at: http://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp197216.pdf (accessed 06 August 2017).

[7] It is important to note that the Baseline Survey was undertaken at a time when the drought was severe in the target counties. Further, there was a pipeline break in the WFPSMP in term 1 because no funding was available for SMP. While there was no direct school feeding from WFP during the survey period therefore, the feeding in some WFSMP schools during the survey period (while not expected) was due to the government and other actors intervening in these areas in response to the drought. In addition, a small number of WFP schools were providing school feeding with carryovers from the previous phase of the SMP.

more likely to be serving food in the survey week than control schools (16.3%) and HGSMP schools were more likely (51.5%) than WFPSMP schools (43.9%) to be serving food.

MGD 1.3 Improved Student Attendance

At baseline 85.0% of students in WFP SMP schools, 83.4% of students in control schools and 84.7% of students in HGSMP schools were regularly attending school. There was no significant difference between the average number of students regularly attending WFPSMP schools (232 total, of which 128 boys and 104 girls), compared to control schools (184 total of which 102 boys and 83 girls).

However, the average number of students regularly attending (327 total, of which 185 boys and 142 girls) was significantly higher in HGSMP schools than WFPSMP schools (191 total, of which 107 boys and 83 girls).

MGD 1.3.4 Increased Student Enrolment

A total of 14,284[8] students were enrolled in WFP SMP schools as compared to 8133 students in control schools and 9883 students in HGSMP schools. There was no statistically significant difference in average enrolment in the comparison between the schools in the three arms of the study. Average enrolment in control schools (375 total, of which 207 boys and 168 girls) was not significantly higher than WFPSMP schools (280 total, of which 155 boys and 125 girls) when compared to control schools. Average enrolment in HGSMP schools (430 total, of which 243 boys and 186 girls) was also not significantly higher than WFPSMP schools (290 total of which 163 boys and 127 girls). The totals and averages in enrolments will be computed both at midline and end line.

MGD 1.3.5 Increased Community Understanding of the Benefits of Education

Two out of five parents/guardians in target communities could name at least three benefits of primary education, with a significantly higher proportion of male parents/guardians (47.2%) able to list three benefits than female (39.8%). Parents/ guardians in WFPSMP schools were generally more able to name benefits of primary education when compared to control and HGSMP schools.

MGD 1.4.1 Increased Capacity of Government Institutions

At the national level, the baseline established that there is room for improving the participation by other ministries in school feeding efforts. A Technical Committee that brings together various stakeholders exists and meets on an ad hoc basis to provide technical support on implementation to the Ministry of Education. A National Inter-Ministerial Steering Committee does not yet exist and intersectoral county committees that are foreseen remain to be established.

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[8] This total comprises of all the 46 WFP SMP schools visited compared to 23 schools for control and 23 schools for HGSMP. For WFP SMP school (min=28, aver=317,max=1524 and SD=241), HGSMP schools (min=125, aver=429,max=1113, SD=257) control schools (min=146, aver=364, max=931, SD=187)

Progress has been made in strengthening the policy framework. However, the National School Health, Nutrition and Meals Programme Strategy remained to be formally approved at the time of the baseline.

Government funding for school feeding has increased in nominal terms but remains insufficient to cover school feeding needs. In 2016, government funding allowed for 77 days of school feeding out of 190. It is worth noting that at the baseline, the GoK led HGSMP was in 19 Counties while WFPSMP was in only 7 Counties. There are no other partners implementing the SMP other than WFP and Feed the Children who focus efforts in the informal settlements in Nairobi.

MGD SO 2 Increased Use of Health and Dietary Practices

WFPSMP schools are more likely to store food off the ground compared to control schools. The proportion of WFPSMP schools that store food off the ground (56.5%) was significantly higher than control schools (17.4%). However, there was no significant difference between food storage off the ground in HGSMP schools compared to WFPSMP schools (52.2% for HGSMP and 47.8% for WFPSMP).

MGD 2.2 Increased Knowledge of Safe Food Prep and Storage Practices

Food preparers at WFPSMP schools and at control schools had comparable scores on the test for safe food preparation (43.5% versus 39.1%). However, a significantly higher percentage of food preparers at HGSMP schools achieved a passing score on a test of safe food preparation and storage (73.9%) compared to food preparers in WFPSMP schools (43.5%).

MGD 2.3 Increased Knowledge of Nutrition

The proportion of children who mentioned at least three hygiene habits was significantly higher in WFPSMP schools (51.0%) compared to the control group (19.8%). Similarly, the proportion of children who mentioned at least three hygiene habit was significantly higher in WFPSMP schools (50.4%) than in HGSMP schools (20.7%). The most important nutrition habits mentioned by children include; balanced diet (42.7%) and food type (39.8%).

Associations between variables

The baseline assessment also examined associations between different variables. The objective was to determine association/relationship. The approach did not test or prove causal relationship and the results should thus be interpreted with some caution.

Using this methodology, factors associated with the highest level of English and Kiswahili literacy as well as highest numeracy for a class 2 work among school going children in class 3 to 8 were assessed. The analysis revealed that key factors associated with the highest level of English and Kiswahili literacy as well as highest numeracy for a class 2 work among school going children in class 3 to 8 include:

- Class of the child.
- Mode of travel to school.

- Number of times child normally eat per day.
- Child had a meal today before going to school.
- Child thought it is important to go to school.
- Child having brothers and sisters who currently study in this school.
- Child having brothers and sisters who are old enough to go to school but are NOT currently attending school.
- Education level of the parent/guardian.
- Number of important nutrition habits mentioned by the parent/guardian.
- Number of hygiene habits mentioned by the parent/guardian.
- Household Coping Strategy Index.

The associations between these variables should enable WFP and its partners to further design and/or improve already existing intervention strategies.

Brief reflection on the findings

The process of transitioning WFPSMP to HGSMP in Kenya was initiated in 2009. The initial focus was on the counties in the semi-arid areas that were easier to transition given their agro-pastoral economy and the fact that they were better watered, better serviced and had a more developed school system. Consequently, the WFPSMP schools that transitioned to the HGSMP in that first phase are in socio-economic conditions that are somewhat better than the schools which transitioned in 2015, which are in more arid areas. The schools in the arid locations suffer constrained capacities, considerable enrollment and attendance disparities, and high levels of food insecurity and malnutrition. This is the context in which the schools were selected for the three-arm study – namely WFPSMP, control schools and HGSMP based on vulnerability, food security and education indicators.

The baseline compared literacy and numeracy scores for the WFPSMP schools with the control group, and with the HGSMP schools which is the group of schools that have transitioned to the government programme. An important point to note is that the literacy and numeracy scores that were obtained in this baseline are comparable (i.e. in the same range) to those of the 2013 and 2016 UWEZO assessments. Both assessments consistently find low scores for the ASAL areas. This confirms the reliability of the instruments used for this study.

A key finding from the study is that in both comparisons (WFPSMP versus control, and HGSMP versus WFPSMP) **the WFPSMP schools score lower on literacy and numeracy and on other education indicators** such as attentiveness. Enrolment was the only indicator for which no difference was found in both sets of comparison.

Differences between the WFPSMP and HGSMP schools are in part likely to be the reflection of the fact that **WFPSMP schools/target counties are in the most marginalized, arid and excluded zones of Kenya** which as noted above have consistently performed poorly in the UWEZO tests. These arid zones have suffered long drawn and extreme educational marginalization from colonial times through to post independence, because of which they record low rates on virtually all education

parameters. It is therefore likely that some of the differences can be explained by the fact that the **HGSMP schools are in areas of the country that are less marginalized and better served** economically, socially and politically, and as noted the HGSMP schools were purposely selected for earlier transitioning as they were considered the easiest to transfer. Other differences between the HGSMP schools and the WFPSMP schools that emerge from the baseline may also reflect the relatively better-off status of HGSMP schools/counties. For example, the study baseline also finds that more children in HGSMP schools eat before going to school compared to WFPSMP schools.

In terms of the difference between WFPSMP schools and control schools on education indicators it should be noted that while **every effort was made to select schools in similar zones to those where the WFPSMP schools** were located for the purpose of having a control group, this proved to be very challenging in practice given that WFP targets all schools in each county. The baseline therefore had to select schools in neighboring counties which were identified as being as similar as possible against identified indicators for comparison. However, it is likely that these counties were not similar enough given that WFP-supported schools are exclusively located in Kenya's northern arid counties which have consistently ranked at the bottom quarter of UWEZOs list (Garissa, Turkana, Mandera and Wajir counties have figured as the bottom four counties for the past two assessments). As none of the 'control schools' were drawn from the bottom ranked quarter of the list this would clearly affect comparability, making it rather difficult to effectively compare WFP-supported schools with the control group or the HGSMP. It might therefore also be important to go beyond the comparison between these different schools and focus on progression of the WFP schools over the course of the project in relation to the baseline point which has been measured through the present study.

The baseline shows that **WFPSMP schools have better scores than control schools on selected indicators related to pupil and parental perceptions and practices in the areas of hygiene, nutrition and education**. This could suggest that attention to hygiene, nutrition and the importance of education has been stronger in the ASAL areas, given that these geographical areas have been prioritized by many other actors (UNICEF, and various NGOs) and that the higher awareness may be the result of interventions from other organizations in these areas. Further, previous McGovern-Dole projects (between 2004 and 2013) could have had an impact on indicators in WFP schools. While the baseline was not able to unequivocally establish that this is the case, the mid - and end-line measurements will establish to what extent these indicators will evolve further and how this compares to any change in the comparison groups (the control and the HGSMP).

It will be important **in the next phases of data collection to further examine some of these differences**, and to ensure that the data collection tools (and the qualitative part of the study) focusses on the reasons for these differences. Meanwhile it is important to highlight that despite these differences the baseline has achieved the objective of making it possible to record the values for each of the schools in each of the study arms. This provides the basis for the mid and end-line phases to compare how WFPSMP schools have evolved in terms of these indicators compared to any changes in control and HGSMP schools.

The intention of the comparison between the WFPSMP schools and the HGSMP schools was to identify progress towards sustainability. While the significant differences between the locations of the schools make comparison of the educational indicators challenging there are some differences that are notable. HGSMP schools perform well on food preparation scores, but they do not perform well on hygiene and education awareness. As is the case for the control schools this may reflect the lack of exposure to activities that target education and hygiene awareness. It may also suggest that in the transitioning process attention to hygiene has been lost, and that this is reflected in the poorer scores. The higher scores on food preparation for HGSMP schools, would however, suggest that training that has been provided in this area has been relatively successful (WFPSMP cooks are still to be trained, as the baseline was started before activities started). It should also be remembered in this context that pupils are a 'moving target' in an intervention of this kind (as they move on to other schools or leave the education system and are replaced by new pupils) whereas cooks are likely to stay in the same position for multiple years, consolidating what they have learnt.

Further in terms of sustainability the baseline highlights that **there are still important conditions to be met for the transitioning process to be adequately supported,** in particularly in terms of coordination, policy framework, and timely budget allocation. These will clearly need attention in the coming period, given that with the transitioning of the WFPSMP schools to the GoK the number of schools that are part of the HGSMP will increase rapidly.

Implications for the mid- and end-line phases and for school feeding in Kenya more broadly

The baseline survey has demonstrated that a quasi-experimental design is feasible. Going forward through the mid line and end line evaluations, it would be important to ensure that:

- The same schools visited during the baseline are visited during the midline and end line.

- The changes in school meals programmes in the schools are documented and considered at both the midline and end line

- The same sampling strategy is maintained at midline and end line.

- Other cofounding factors that might influence the outlined hypothesis are documented and reported at both midline and end line.

The experience of the baseline exercise would suggest that for the mid-line and end-line exercises it would be sensible to do the qualitative data collection after the quantitative analysis. This will make it possible to have a more in-depth understanding of differences that are highlighted from the quantitative data and make for an approach to the qualitative questioning that is more directly related to gaps in understanding.

The benchmark values for the indicators in the MGD Performance Monitoring Plan, coupled with the overall baseline findings and the analysis of associated factors, point to **the need to focus on the following areas in implementing the WFPSMP:**

- Progress has been made in drafting the National School Health, Nutrition and

Meals Programme Strategy, however it remains to be formally approved. WFP should continue to advocate for a speedy adoption and implementation of this strategy.

- Adequate and regular funding through the Government budget is a challenge in transitioning schools to the Government led HGSMP (see also below). WFP should work with partners in advocating with the Ministry of Finance and the Treasury for ring-fencing SMP budgets (which would be consistent with the GOK's social protection commitments). It should also advocate for regular and timely disbursements of GoK funds to schools, and for a progressive increase in government funding to the HGSMP.

- Strong participation by all partners, regular meetings, and better coordination are critical to using scarce resource more efficiently and effectively. With the exception of nutrition, coordination among key ministries and programmes at national level remains weak. WFP should support the Ministry of Education in establishing the National Multi-sectoral Steering Committee, and support the GoK in seeking stronger participation of key ministries and programmes such as social protection and agriculture in this forum.

- The baseline highlights poor literacy and numeracy scores of the schools in the WFPSMP areas. School feeding can offer only part of the solution and WFP should therefore actively coordinate its efforts with that of other partners in the same counties to ensure that the factors that affect school participation and achievement are addressed in a holistic manner.

- The analysis of associated factors that are presented in this report should inform further research and guide programming work by WFP and its partners to further design and/or improve already existing intervention strategies. WFP could use these findings as input into a meeting with partners to discuss how to strengthen support to education in the targeted areas.

- To support the transition WFPSMP schools there should be a strong focus on mentorship and capacity building of school leaders to be able to properly manage school feeding.

- Given the importance of involving various sectors and actors in school feeding to cover all dimensions of the programme (nutrition, literacy, local production, etc.), WFP should actively support counties where it is operating in setting up County Level Multi-SectoralSteering Committees (bringing in health, agriculture, academic institutions, the private sector, and other partners as relevant) and support these groups with capacity development if necessary.

- WFP should develop a clear and convincing case for decentralizing the management of school feeding to the county level, as is already the case for the management of ECD. This will promote a better quality programme where the key partners respond to/are answerable to their constituents and are more in tune with needs and requirements of the county, and will allow for better allocation and utilization or resources and monitoring programme implementation. A decentralized programme would also allow for the establishment of mechanisms by which counties might advance funds to purchase goods at the best possible time, and make the school feeding interventions more cost effective.

- Most of the schools that participated in the baseline were having pipeline

breaks. WFP should identify the key factors that are contributing to these pipeline issues and ensure regular delivery to the schools to minimize the number of days without school feeding.

Finally, the results of the baseline which compared the HGSMP and WFPSMP schools highlight challenges in the **transitioning process.** Recommendations in this matter fall outside of the strict scope of the WFPSMP but are still captured here as they are important for the broader group of stakeholders, and if they do not receive attention may in the future also affect the WFPSMP schools that are transitioning. In the view of this evaluation a successful transition from WFPSMP to sustainable HGSMP will need to take into account the following considerations:

- Adequate budget allocations should be set aside (and ring fenced) by the GoK and disbursed to schools on time to ensure timely and cost effective purchase of the requisite food.

- Capacity should be developed at all levels – national, county, and school to ensure effective implementation of the intervention.

- The transition process should be allowed adequate time to ensure contextualization of best models and practices.

- Enhanced coordination among all the stakeholders at various levels – national, county and school will be key to the success of the HGSMP.

- Strong linkages with local smallholder farmers and traders and enhancement of their capacity to tap into the school markets effectively will be critical to the success of the HGSMP

- The baseline finds that HGSMP schools perform well on food preparation scores, but they do not perform well on hygiene and education awareness. This suggests that in the transitioning process attention to hygiene has been lost and that this may need attention.

- While it is the Kenya Government's responsibility to provide food to school going regions in Arid and Semi-Arid areas, particularly with the anticipated transition to HGSMP, donors and other supporters will need to walk with the Ministry of Education over the transitional period to ensure success of the move from WFPSMP to HGSMP. To do this effectively, it would be important for support towards the transition efforts to be more coordinated to reduce uncertainty and breaks in the resources that are necessary for an effective transition. It is also critical that adequate time be given to the transition process as well as predictable technical and other associated support through WFP.

Kenya still has a lot to be done on these elements to ensure a sustainable Home Grown School Meals Programme. In so doing, the country will still need the technical and financial support of the various partners that have brought the SMP this far.

1. Introduction

1.1. Introduction to the Baseline Study

1. The United States Department of Agriculture (USDA) – Mc Govern Dole (MGD) International Food for Education and Child Nutrition Programme have granted the World Food Programme (WFP) Kenya US$ 28 million to support its programme in Kenya that will run from 2016 -2020. The MGD program supports education, child development and food security in low-income, food-deficit countries around the globe. Support includes United States (US) produced agricultural commodities and financial assistance as well as support to capacity development and to monitoring and reporting. Sustainability of interventions is a critical consideration for USDA. It is worth noting that MGD is not the only funding agency to the programme. It is a multi-donor supported intervention to which MGD provided 70 percent of the financial contribution in 2016 and 2017.[9]

2. Since the inception of the School Meals Programme in Kenya in the 1980s, WFP works closely with Kenyan Government Ministries (Education, Agriculture, and Health), with counties in Kenya, and with other partners to provide school meals to vulnerable children in arid counties and in the unplanned settlements of Nairobi. It also works to improve the management and implementation of the national school feeding programme and to strengthen the capacities of national, county and school level actors to ensure reliable and cost-efficient and-effective implementation of the intervention.

3. The current MGD programme is the last of four phases of support, and will result in a full hand-over of the school feeding programme to the Government of Kenya (GoK) by 2019. Previous phases of USDA support included three single year awards in 2004, 2005, and 2006, and three multi-year phases awarded in 2007 (2007-2009), 2010 (2010-2012), and 2013 (2013-2016), respectively. These phases were followed by the current multi-year phase awarded in 2016 (2016-2020). The total funds awarded between 2004 and 2015 amount to approximately 93 million USD.

4. A process of transitioning WFPSMP schools to the Government started in Kenya in 2009, and involves what is known as the Home Grown School Meals Programme (HGSMP). The first phase of transitioning focussed on the semi-arid counties that were relatively easier to transition and which are characterized by a relatively favourable agro-pastoral economy, good rainfall, better services and a more developed school system. The programme includes strengthening linkages with smallholder farmers to enhance agricultural production and promote local purchasing of food as key to the sustainability of HGSMP. A second transitioning process focuses on the arid counties under the current MGD programme. These counties represent a completely different context. They are arid, vast, and poorly populated, food insecure and have suffered marginalization for a long time. They have poor infrastructure in general and schools which are far apart. Consequently, to transition these counties effectively a completely different model from that used the semi-arid counties has been conceived. This model is based on transitional cash transfers. The model has been developed,

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[9] Annex 5 provides an overview of funding by donors to school to MGD school feeding between 2014 and 2017.

piloted and the initial counties where it was operationalized by WFP have been handed over to government.

5. In the spirit of transition, the MGD 2016-2020 programme is divided into two phases. For the first period of three years (2016-2018), the program will provide daily school lunches to a total of 358,000 primary school children in targeted arid and food insecure counties of Kenya. At the end of the first three years the responsibility for the school feeding will have been handed over to the HGSMP and the government will be responsible for managing the programme. Support from USDA will then continue for a further two years (2019-2020) in the form of WFP's continued technical assistance to further strengthen institutional structures and to ensure that the capacity is in place for the management of the HGSMP in Kenya.

6. Over the five years the programme will be implemented in eight counties: Baringo, Garissa, Mandera, Turkana, Wajir and West Pokot, Marsabit and Tana River. The latter two counties will not receive food but will benefit from complementary activities. The complementary activities focus on: strengthening governance and multi-sectoral coordination and collaboration for the school meals programme; advocacy and dialogue to ensure adequate and regular budget allocations and to maintain political commitment to the programme; strengthening oversight and management functions; and empowering communities to manage school feeding activities through training and capacity building of school managers, teachers, and parents in order to ensure a solid level of awareness about school feeding implementation principles.

7. At the school-level, the MGD School Meals Programme (SMP) includes WFP support to train education officials to monitor school feeding and train trainers among local education, health and agriculture officers, equipping them to facilitate school feeding management trainings at the sub-county level. WFP shares the responsibility for the commodity delivery with the Ministry of Education (MOE), with WFP managing the pipeline and ensuring delivery to central warehouses and the MOE transporting commodities to the sub county level and to schools. The hot lunch with food from MGD funds will be served for 120 out of the 190 school days, comprising 150 grams of bulgur wheat, 40 grams of green split peas, 5 grams of vegetable oil (fortified with vitamin A and D), and 2 grams of iodized salt – to be procured separately by WFP from funds from other sources.

8. The SMP seeks to contribute to improved enrollment, retention, and attentiveness at school level and ultimately contribute to improved literacy and numeracy in primary schools in the intervention areas – together with actions promoted by other partners like the USAID Funded Tusome Programme. The Tusome ("Let's Read" in Kiswahili) Early Grade Reading Activity is a collaboration between the MOE, USAID and UKAID to improve learning outcomes in English and Kiswahili in Class 1 and 2. The Tusome Programme was conceptualized and developed as a national literacy programme and implemented in all public primary schools in the country (including those in the WFPSMP target counties). It targets approximately 60,000 teachers and 22,600 schools for improvement in literacy instruction and outcomes. It is envisaged that 5.4 million class 1 and 2 pupils will be twice as likely to meet MOE benchmarks for literacy. The programme is being implemented in all public primary schools and 1000 alternative basic education institutions serving low cost urban settlements

countrywide.

9. In parallel, there are interventions in place that seek to improve critical gaps in nutrition and hygiene awareness as well as strengthen literacy and numeracy. The aforementioned Tusome programme targets pupil literacy. Within the education sector, the United Nations Children's Fund (UNICEF) is working with the GoK to update the current national curriculum, an essential step to improve the quality of teaching and pupils' learning experience. WFP is supporting this process and providing inputs to the review of the national curriculum. UNICEF also aims to increase enrolment, through awareness campaigns - sensitizing communities about the importance of education. UNICEF is also active in the Water, Sanitation and Health (WaSH) sector, providing toilets and running water at school level. These activities complement the SMP. The MOE is implementing an initiative aimed at improving numeracy under the Global Partnership for Education (GPE) grant. In terms of scope, the literacy and numeracy interventions noted are country-wide interventions and overlap with the target counties and schools in the baseline study. The WASH and nutrition interventions are implemented by different actors with a concentration in the counties targeted in the baseline because these are areas where the situation of WASH and nutrition is challenging/dire and warrants attention.

1.2. Objectives of the Baseline Survey

10. The purpose of the Baseline Survey - for which the Terms of Reference (ToR) can be found in the Inception Report (Visser et al, 2017) - is to establish a clear benchmark for WFP and her partners with information against project indicators at the start of the intervention (see Annex 1) and a set of values against which to verify the targets.

11. The baseline thus:

- Records the situation at the start of the intervention phase in terms of output and performance indicators for the lower level results in the logical framework. These baseline values will be used to regularly monitor progress.

- Provides a situational analysis – based on a desk review of documentation and a small number of interviews – of the conditions for implementation of the SMP at the baseline.

- Forms the foundation for planned midterm and final evaluations which will measure performance indicators for MGD strategic objectives as well as the indicators of highest level results that feed into the strategic objectives.

12. The present report is divided into the following chapters:

- The next chapter (Chapter 2) outlines the methodology for establishing the baseline for which more information can be found in Annex 2, and discusses study limitations.

- Chapter 3 forms the bulk of the findings of the study and covers the findings of the survey for each of the MGD Strategic Objectives (SO) and key indicators.

- Chapter 4 examines key associations between variables.

- Chapter 5 presents a further discussion of the baseline findings and considers

selected implications.

2. Study Methodology

13. The present baseline has been prepared using a combination of primary data collection and secondary data available from Government and WFP records. A detailed methodology for the baseline was drawn up during the inception phase (Visser et al, 2017). An important aspect of the inception phase was to establish whether the envisioned quasi-experimental design for the study was feasible. As the team's assessment showed that this was feasible - given that it was possible to get a match between the intervention and control groups - the study was designed in line with these parameters.

14. A three-arm quasi-experimental design was employed for the study. The baseline involves two sets of comparison between these three 'types' of schools, namely schools where the MGD funded WFPSMP operates, WFPSMP control schools, and schools that are part of the HGSMP (i.e. schools that have been taken over by the government). The two comparisons are as follows:

    - A comparison of WFPSMP schools with the WFPSMP control schools.
    - A comparison of HGSMP schools with WFPSMP schools.

15. The HGSMP arm of the study was included in the baseline purely to assess the progress of sustainability through government-led and owned interventions. It is the reason why the choice of sample schools was based on those that have been in the programme for a while and not those that had just been handed over in the recent past (2014-15 in the arid counties). The inclusion was a response to a request that was made during the initial/inception briefings with the WFP Kenya Country Office and USDA/MGD teams and it was included in the inception report which was approved by the baseline reference group. This comparison will provide an opportunity for reflection on how best to transition the WFPSMP arid counties to HGSMP at the end of this phase of the intervention, including what should be done to ensure sustainability given the context of aridity, food insecurity and other factors like long drawn marginalization in the target areas.

16. The research questions and testable hypotheses that underpin the quasi-experimental design focus on examining whether the baseline, mid-term and end-line primary education outcomes (literacy and numeracy levels) and other educational indicators (enrolment, attendance, etc.) in the arid and semi-arid lands (ASAL) areas of Kenya are the same in schools included in WFP/USDA-MGD school meals programme (2016 -2020) as those not included (controls and those transitioning to HGSMP). Four different hypotheses were formulated and proposed for testing at mid-term and end-line for each indicator. These hypotheses are further explained in Annex 2, and are as follows:

Indicator 1:

- **Ho**: Enrolment in schools included in WFP/USDA-MGD SMP ≠ Enrolment in schools not included in WFP/USDA-MGD SMP

- **H1:** Enrolment in schools included in WFP/USDA-MGD SMP= Enrolment in schools not included in WFP/USDA-MGD SMP

Indicator 2:

- **Ho:** Attendance rate in schools included in WFP/USDA-MGD SMP≠ Attendance rate in schools not included in WFP/USDA-MGD SMP
- **H1:** Attendance rate in schools included in WFP/USDA-MGD SMP = Attendance rate in schools not included in WFP/USDA-MGD SMP

Indicator 3:

- **Ho:** Primary school completion rate in schools included in WFP/USDA-MGD SMP ≠ Primary school completion rate in schools not included in WFP/USDA-MGD SMP
- **H1:** Primary school completion rate in schools included in WFP/USDA-MGD SMP = Primary school completion rate in schools not included in WFP/USDA-MGD SMP

Indicator 4:

- **Ho:** Literacy/numeracy rate in schools included in WFP/USDA-MGD SMP ≠ Literacy/numeracy rate in schools not included in WFP/USDA-MGD SMP
- **H1:** Literacy/numeracy rate in schools included in WFP/USDA-MGD SMP = Literacy/numeracy rate in schools not included in WFP/USDA-MGD SMP

17. The inception phase identified key parameters for the study including: procedures for sampling and required sample size; data collection approach and tools; and, procedures for data analysis.

18. The conceptual framework for the MGD intervention envisages realization of two results as follows:

    1. Results framework #1: *MGD Strategic Objective (SO) 1 Improved Literacy of School-Age Children.*
    2. Results framework #2: *MGD SO2 Increased Use of Health and Dietary Practices.*

19. Since MGD SO2 is a function of MGD SO1, the sample size was calculated based on MGD SO1. The baseline estimate aligned to MGD SO1 was interpreted to be the proportion of children ages 7-13 that have attained literacy and numeracy at Standard 2 level.

20. UWEZO[10] Kenya's Sixth Learning Assessment Report December 2016, suggested that the learning outcome by selected counties on Class 3 who can do Class 2/Standard 2 level work showed a substantial degree of variance.[11] Due to variation in baseline estimate across selected counties and with potential variation in other measurement indicators, this study design used a 50% conservative estimate as the proportion of

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[10] Uwezo is a five-year initiative that aims to improve competencies in literacy and numeracy among children aged 6-16 years old in Kenya, Tanzania and Uganda, by using an innovative approach to social change that is citizen driven and accountable to the public.

[11] The proportions in the proposed intervention areas ranged as follows; Wajir – 9.9%, Mandera – 10.1%, Turkana – 11.4%, Garissa – 12.9%, West Pokot – 15.4%, and Baringo – 16.6%.

children aged 7-13 that have attained literacy and numeracy of a Standard 2 level-Standard 2 competencies in literacy and numeracy. The proportion optimized the sample size to allow for estimation of all indicators devoid of the risk of low sample size calculation. The study presumed a 20% effect size on the primary indicator.

21. The minimum sample size was calculated using the Fleiss et al formula. This resulted in a sample size calculation per study arm (without replacement) of 689. To address gender mainstreaming and women's empowerment as per WFP's evaluation principle of gender equality, the overall sample size in both interventions (WFPSMP and HGSMP) and control arms was tripled to 4,134 (2067 boys (689 HGSMP, 689 WFPSMP, 689 controls); 2,067 girls (689 HGSMP, 689 WFPSMP, and 689 control). As each pupil questionnaire also included questions for a corresponding parent (see Annex 4), an equal number of parental responses was sought (i.e. 4,134 parents). Actual participants surpassed the targeted number and added up to 5130 with approximately equal number of boys (2558) and girls (2572). An equal number of parents were reached (5130), of which 1446 were male, and 61 percent (3684) were female.

22. The original design in the inception report for the study anticipated a matching of 30*30*30 for the three groups of schools where these schools would all overlap. In reality, the data collected allowed for the matching of 23 schools from each set. In this manner, 23 WFPSMP schools were matched with 23 control schools, and 23 HGSMP schools were matched to 23 WFPSMP schools.[12]

Figure 1 - Comparison of the quasi-experimental initial design and final situation
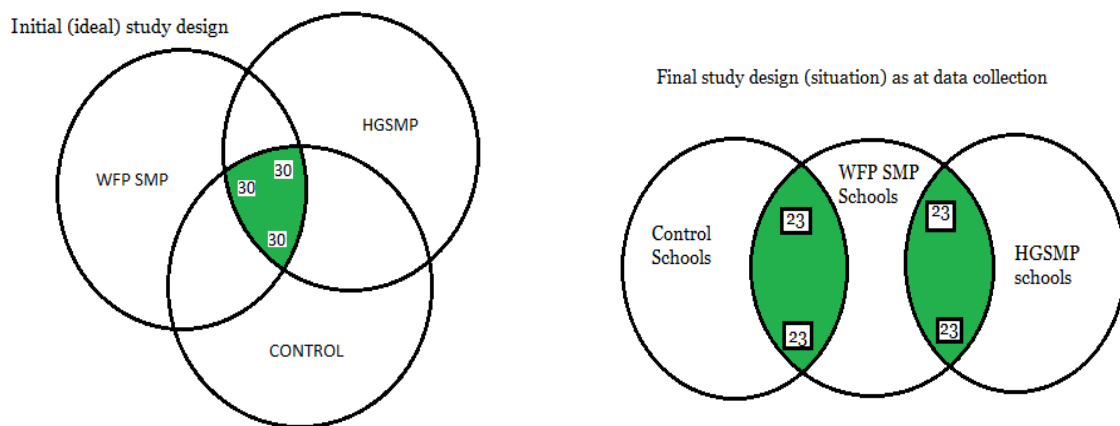
23. While the matching and number of schools is different from the design it had no implications for the study as such as the comparison between WFPSMP and HGSMP

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[12] A total of 92 schools would thus have been covered by the study. However, data were not collected at two of the selected schools because of challenges of accessibility of the schools during the data collection phase. The final count of schools covered by the study was therefore 90 across the three arms of the study.

was not part of the initial design.

24. Primary data collection was undertaken in five (Garissa, Turkana, Mandera, West Pokot, and Wajir)[13] out of the six[14] targeted ASAL counties. Control schools were selected from the neighboring areas (either within the same county or in a neighboring county in a manner that matched as closely as possible the socio-economic activities and livelihood zones to ensure similarity in terms of vulnerability and food insecurity).[15] HGSMP schools were also selected from the neighboring areas with comparable socio-economic activities.[16]

25. Control and HGSMP schools were matched against WFPSMP schools using propensity score matching (PSM). Selected school characteristics derived from the MOE Education Management Information System (EMIS) tool assisted in facilitating matching of schools using PSM. Characteristics (covariates) that were used in matching included: boy to girl ratio; average pupils/class; pupils to teacher ratio; and residence type (rural/urban). These characteristics are generally known to influence academic performance in schools and thus were identified and/or computed to carry out the PSM.

26. Schools in the first group with a propensity score lower than the lowest observed value in the second group were discarded. Similarly, schools in the second group with a propensity score higher than the highest observed value in the first group were also discarded. The same approach was used for the control group. The remaining schools were in the 'region of common support' from which participating schools were selected. This process resulted in the identification of three groups of schools that were as similar as possible in terms of characteristics that influence academic performance.

27. Figure 2 and 3 demonstrate comparison of schools before and after matching.

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[13] Isiolo, Nairobi, Samburu, and Tana River were excluded from the HGSMP group for the following reasons: Nairobi was excluded because the majority of the counties of focus are in the arid, rural areas, consequently, there were hardly any common contextual similarities that will match the urban context of the capital; the other three have been beneficiaries of the Transitional Cash Transfers to Schools Model developed and implemented by WFP and the Ministry of Education before being handed over to HGSMP – consequently their evolution modality and short history of the same does not approximate to a pure HGSMP modality of government that has been going on in some of the selected counties since 2009.

[14] Baringo was initially included as a target county for data collection. However due to security concerns it was not possible to undertake data collection in this county.

[15] The control schools were located in Elgeyo Marakwet, Kajiado, Kitui, Laikipia, Machakos, Makueni, Nyeri and Taita Taveta.

[16] This covered Elgeyo Marakwet, Embu, Kajiado, Kitui, Laikipia, Machakos, Makueni and Nyeri.

Figure 2 - Selection of Control and WFPSMP schools using PSM
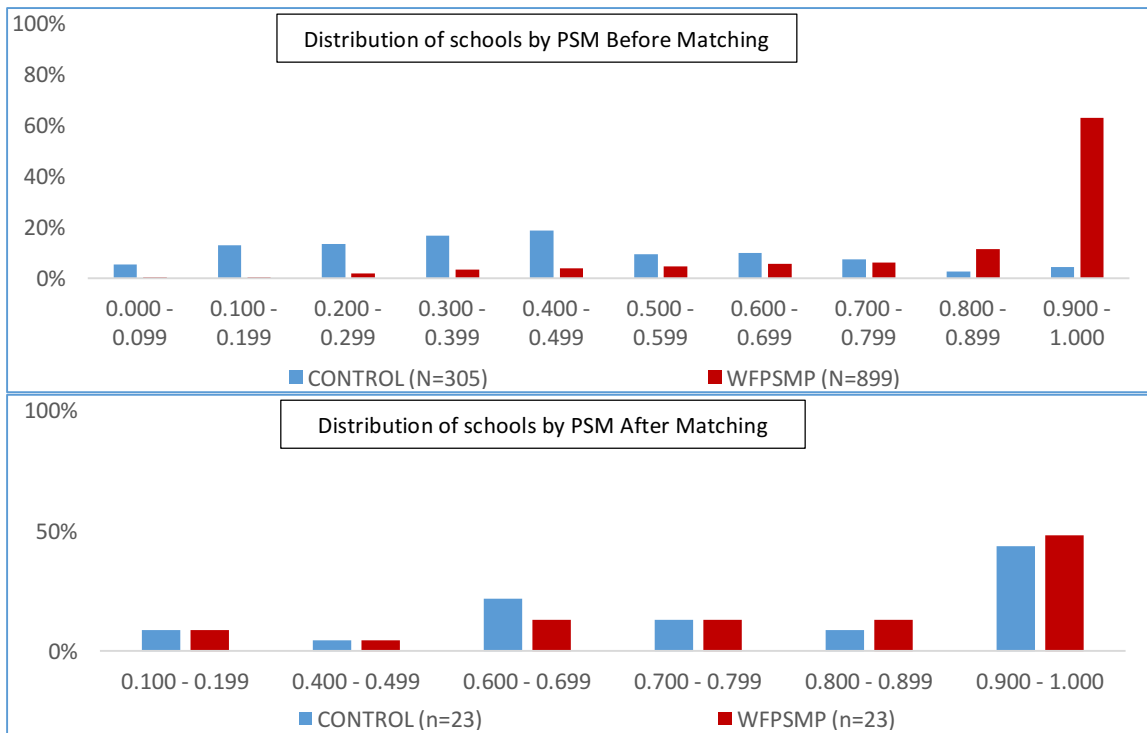
Figure 3 - Selection of WFPSMP and HGSMP schools using PSM
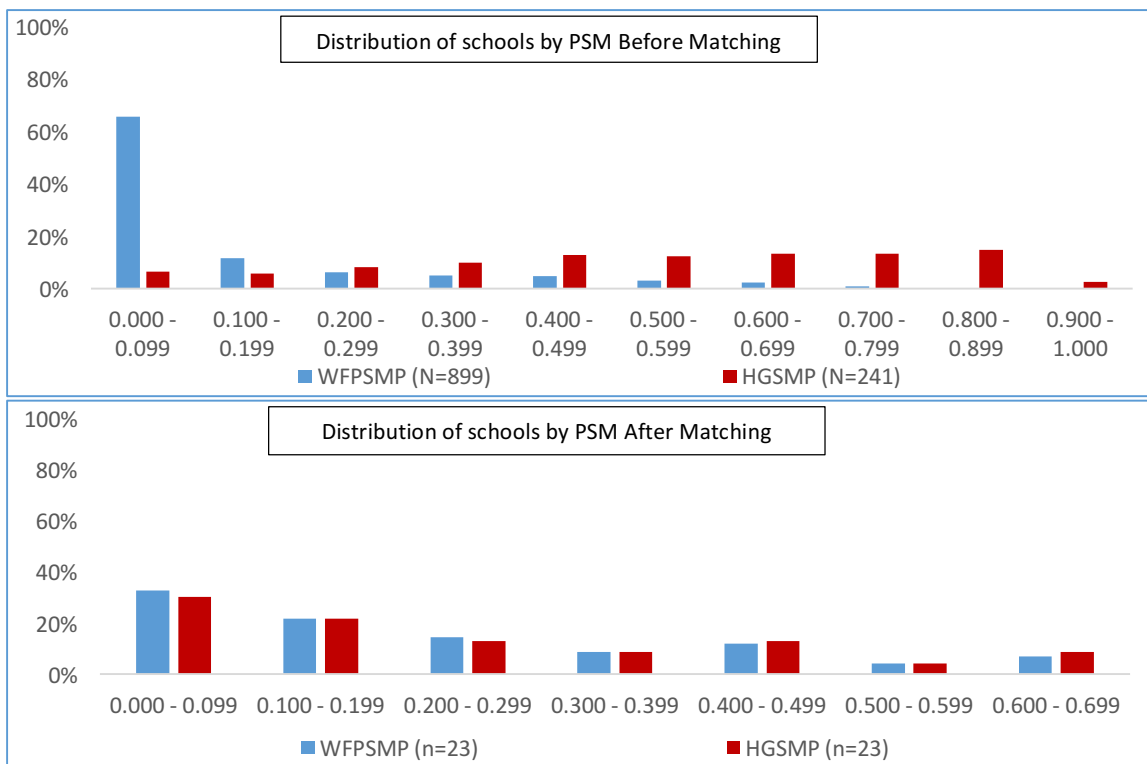
28. A two-stage sampling procedure was employed at the WFPSMP sites as follows.

- *First stage sampling:* involved the selection of primary sampling units (PSUs) - i.e. schools - across the five selected counties. Using probability proportionate to size (PPS) method, the PSUs were distributed across the five counties. Selection of schools within counties was done using simple random sampling, with application of a random number generator.
- *Second stage sampling:* involved the selection of secondary sampling units (SSUs) which were *children ages 7-13 years in class 3 to 8,* across the selected schools. Distribution of school specific sample size allocation was done across gender and school grade using PPS, where gender specific samples across school grade were drawn. Selection of children within gender and across school grade was done using simple random sampling, with application of a random number generator.

29. Data collection for the baseline took place in March/April 2017. Data collection was preceded by a five-day training of a team of 88 enumerators and supervisors on the process. Data were collected from a total of 90 schools[17] using real time digital data collection and supplemented by manual data registration and audio recording for the focus group discussion (FGD) in schools. A Global Positioning System (GPS) picking capability was integrated into the mobile/electronic version of the data collection script to ensure that data corresponded to the correct schools.

30. A total of 5130 pupils and their parents/guardians were covered by the study. The parent-pupil data collection tool for grades 3 to 8 was the main data collection tool. It was developed as one continuous tool which was responded to first by the parent of the child and then by the child (without the parent present). The parent-pupil tool examined parents' awareness of the value of education, and views on the barriers to enrolment, participation and learning, situation at home in terms of asset ownership (productive and non-productive), agricultural land holding and land tenure system, issues of food security, nutrition, siblings and whether these go to school, and hygiene. From the pupil's perspective, the tool examined issues affecting enrolment, attendance, attentiveness, the importance of education, knowledge of nutrition and hygiene, and importantly also included the UWEZO numeracy and literacy test.[18]

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[17] Data collection was planned for a total of 92 schools. However, issues related to the access meant that two schools could not be reached at the time of data collection.

[18] Uwezo is a five-year initiative that aims to improve competencies in literacy and numeracy among children aged 6-16 years old in Kenya, Tanzania and Uganda, by using an innovative approach to social change that is citizen driven and accountable to the public.

Figure 4 - Data collection sites for the baseline
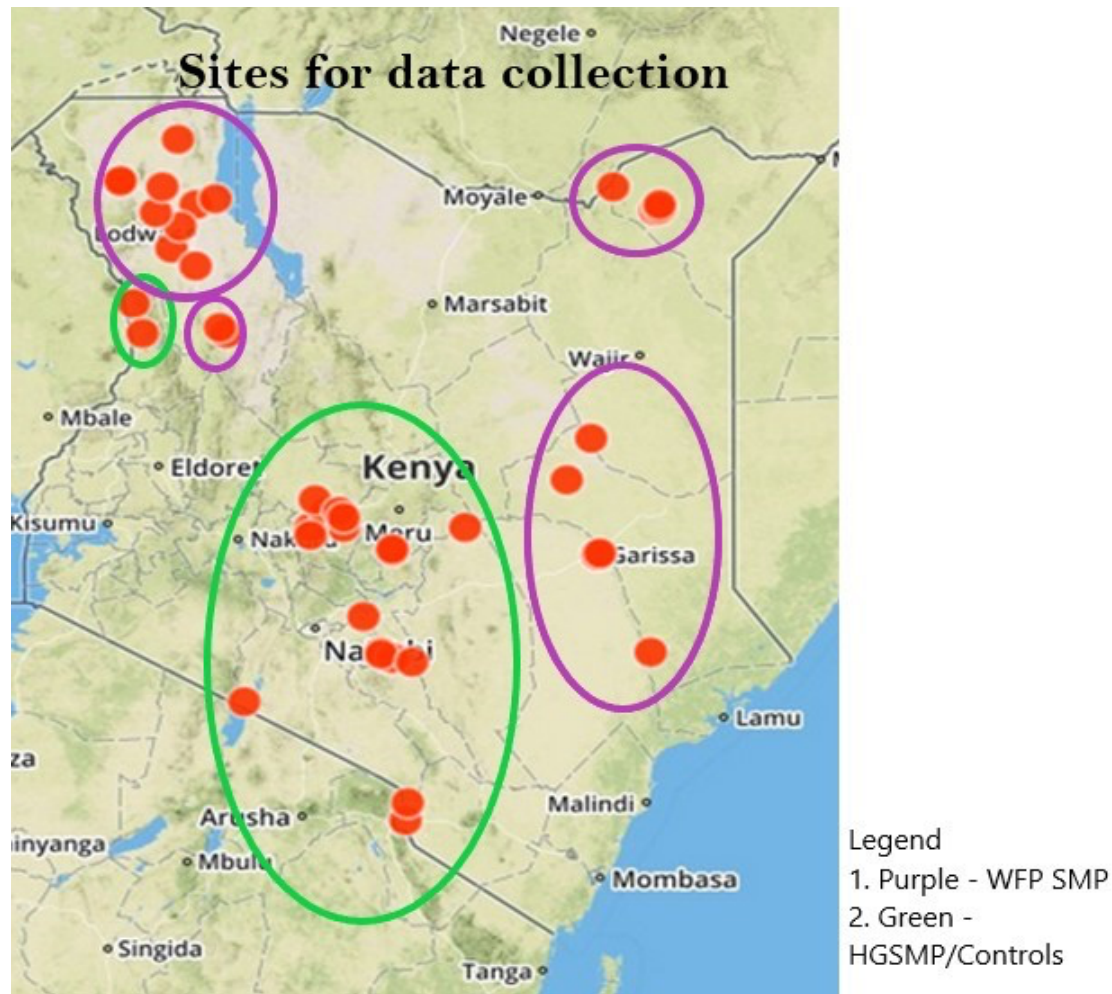
31. Additional data collection covered head teachers in all schools, selected class teachers, cooks, representatives of the Parent Teacher Associations (PTA) and of the School Board of Management (BOM). FGD complemented survey data collection for all informants and served to gain in-depth insight into the perception of teachers, parents, PTA members, and pupils of the issues behind poor enrolment, attendance and retention. It also explored the role of school feeding and other measures which may impact on performance of pupils. All data collection tools can be found in the inception report (Visser et al, 2017).

32. Ethical considerations were taken on board in the study in the following manner:

- Enumerators training included a substantial training on the ethical considerations for conducting surveys in schools, in particular with pupils.
- A courtesy call was made to the county district education official before starting the activity.
- The head teacher consented to the study before any activity was undertaken in the school.

- The teachers introduced the enumerators to the class to explain the purpose of the exercise.
- Participation was voluntary and all participants were told that they could opt not to participate. Participants who consented to being part of the study were informed at the start of the interview that they could discontinue the interview at any time without any repercussions. All participants were thanked at the end of the data collection.
- Consent was sought from teachers, pupils and parents. Parents were interviewed prior to the interviews of their respective children so that consent could be sought for the interviews with the children.
- All responses were coded and the individual performance of students was not traceable to the student or shared with the participants. All data collected has been kept confidential and none of the information in the report can be traced to specific informants.

33. Data analysis was done using IBM SPSS version 24.0. MS-Excel was used to generate graphical presentation of specific findings.

34. The next Chapter presents the findings of the baseline across the three arms of the design.

3. Survey findings

3.1. Introduction

35. The survey findings present the results across the three arms of the study with respect to the USDA MGD indicators. The chapter is divided to cover the main objectives and indicators as follows:

- **Learning outcomes** – this section discusses the findings with respect to indicators of literacy and numeracy for the school children aged 7-13 years, as well as indicators on attentiveness and student attendance.

- **Short term hunger** - this section covers the situation with respect to food consumption by children during the day and week.

- **School meals and expected outcomes** – this section presents the situation with respect to access to food and to school meals during the year of the study (2017) and in the week of the survey. It also reports on the situation with respect to community understanding.

- **National capacity** - examines the situation with respect to capacity, government support, policy and regulatory framework at the time of the baseline

- **Food utilization and food safety** – covers issues related to hygiene and nutrition and provides the baseline with respect to the situation in the schools in terms of food preparation and storage and the knowledge of nutrition.

For each of these headings, quantitative findings from the survey instruments are presented first. Where appropriate, qualitative findings are also presented to provide additional insights and further understanding.

3.2. Characteristics of the respondents

36. In this part of the report, an overall picture of population and school characteristics for the three-arm target population baseline survey is presented. The survey was completed in 90 schools in 14 counties, covering 5130 pupils (2558 boys, 2572 girls) 5130 parents (1446 male, 3684 female) 34 head teachers (25 male, 9 female) and 90 PTA and BoMs (Table 3).

Table 3 - Study population in the three arm target counties

Characteristic	Frequency
Number of Counties	14
Number of Schools	90
WFSMP schools	44
Control Schools	23
HGSMP Schools	23
Number of Pupils sampled for the survey	5130
Boys	2558
Girls	2572
Head Teachers Interviewed	34
Male	25
Female	9
Teachers Interviewed	56
Male	34
Female	22
Parents Interviewed	5130
Male	1446
Female	3684
PTA and BoMs reached	90

37. Table 4 presents the distribution of study pupils by study arm and grade. Enrolment per study arm (Control (1396), WFPSMP (2221), and HGSMP (1513)) was approximately in the ratio of 1:2:1, while that of gender (boys (2558), girls (2572)) was approximately 1:1. Enrolment by grade was almost equal across class 3 to 7, with class 8 slightly lower.

Table 4 - Study pupils' characteristics

Variable	Boys (n=2558)		Girls (n=2572)		Total (n=5130)	
	N	%	n	%	n	%
Study arm						
Control	675	26.4%	721	28.0%	1396	27.2%
WFPSMP	1146	44.8%	1075	41.8%	2221	43.3%
HGSMP	737	28.8%	776	30.2%	1513	29.5%
Grade						
Class 3	438	17.1%	459	17.8%	897	17.5%
Class4	443	17.3%	464	18.0%	907	17.7%
Class 5	472	18.5%	428	16.6%	900	17.5%
Class 6	455	17.8%	439	17.1%	894	17.4%
Class 7	442	17.3%	438	17.0%	880	17.2%
Class 8	308	12.0%	344	13.4%	652	12.7%

38. Table 5 presents the characteristics of the schools that were reached in the study. It captures aspects related to teacher and pupil attendance rates, completion rates, food storage and cooking facilities (kitchens), sources of water supply, sanitation facilities and associated hygiene practices in schools and in relation to the preparation of school meals. This information shows that:

- A significantly high proportion of WFPSMP schools had a storage facility (82.6%) compared to control schools (43.5%); (p=0.006).
- A significantly high proportion of HGSMP schools had a large enough kitchen/facility for preparing food for pupils (82.6%) compared to WFPSMP schools (43.5%); (p=0.004).
- A significantly high proportion of WFPSMP schools indicated that most pupils wash their hands (81.8%) compared to control schools (33.3%); (p=0.046). Similarly, a significantly high proportion of WFPSMP schools indicated that most pupils wash their hands (83.3%) compared to HGSMP schools (40.0%); (p=0.030).
- A significantly low proportion of WFPSMP schools indicated that their cook is trained in food storage and handling (47.8%) compared to control schools (17.4%); (p=0.028). Similarly, a significantly low proportion of WFPSMP schools indicated that their cook is trained in food storage and handling (17.4%) compared to HGSMP schools (60.9%); (p=0.003).

39. Other characteristics were not significantly different between the three study arms.

Table 5 - Characteristics of the schools covered by the Study

Characteristics	Control (n=23)	WFPSMP (n=23)	p value	HGSMP (n=23)	WFPSMP (n=23)	p value
Teacher Attendance Rates	92.0%	92.9%	0.656	94.1%	94.0%	0.955
Pupil Attendance Rates	83.8%	81.3%	0.534	84.7%	86.6%	0.488
Proportion of Pupils who completed the last grade of school	77.7%	81.9%	0.513	78.1%	77.4%	0.919
Schools with a storage facility	43.5%	82.6%	**0.006**	65.2%	82.6%	0.179
Sufficient kitchen for preparing pupils food						
Yes, and large enough to prepare food	52.9%	43.5%	0.385	82.4%	30.4%	**0.004**
Yes, but not large enough for food preparation	23.5%	43.5%		17.6%	56.5%	
No	23.5%	13.0%		0.0%	13.0%	
Status of the Kitchen						
Can't repair	7.7%	10.0%	0.993	29.4%	15.0%	0.052
Good Condition	23.1%	25.0%		35.3%	20.0%	
Slight Repair	38.5%	35.0%		35.3%	30.0%	
Serious repair	30.8%	30.0%		0.0%	35.0%	
Has enough fuel-efficient stoves						
Yes, and sufficient quantity	46.2%	40.0%	0.059	70.6%	40.0%	0.156
Yes, but not sufficient quantity	15.4%	50.0%		23.5%	40.0%	
No	38.5%	10.0%		5.9%	20.0%	
School main water supply						
No water source	0.0%	4.3%		0.0%	8.7%	
Water tank	35.3%	8.7%		11.8%	8.7%	
Water piped into school	11.8%	13.0%		23.5%	8.7%	
Water brought by pupils	0.0%	4.3%		0.0%	8.7%	
Public taps/stand pipes	0.0%	4.3%		11.8%	4.3%	
Tube well/borehole	23.5%	8.7%		23.5%	4.3%	
Rainwater collection	5.9%	4.3%		5.9%	0.0%	
Unprotected spring	0.0%	8.7%		11.8%	4.3%	
Cart with small tank	0.0%	4.3%		0.0%	8.7%	
Tanker truck	0.0%	21.7%		0.0%	8.7%	
Surface water	11.8%	4.3%		0.0%	13.0%	
Children carry water to school	11.8%	8.7%		11.8%	4.3%	
Other	0.0%	4.3%		0.0%	17.4%	
School Sanitation Facilities						
Has Latrines	100.0%	100.0%		100.0%	100.0%	
Has separate facilities for boys and girls	94.1%	87.0%	0.624	100.0%	87.0%	0.248
Has hand washing facilities that are used by pupils	35.3%	47.8%	0.428	58.8%	52.2%	0.676
Proportion of pupils who wash their hands						
Most pupils wash their hands	33.3%	81.8%	**0.046**	40.0%	83.3%	**0.030**
Only some pupils wash their hands	66.7%	18.2%		60.0%	8.3%	
There is no water to wash hands close to the latrine	0.0%	0.0%		0.0%	8.3%	
The School has a library	5.9%	26.1%	0.096	30.0%	47.1%	0.283
School Cook						
The school has a cook	100.0%	100.0%		100.0%	100.0%	
The cook is trained in food preparation	43.5%	26.1%	0.216	34.8%	21.7%	0.326
The cook is trained in food storage and handling	47.8%	17.4%	**0.028**	60.9%	17.4%	**0.003**
The Cook has a health certificate	30.4%	47.8%	0.227	60.9%	43.5%	0.238

Characteristics	Control (n=23)	WFPSMP (n=23)	p value	HGSMP (n=23)	WFPSMP (n=23)	p value
Schools with a storage facility	43.5%	82.6%	**0.006**	65.2%	82.6%	0.179
Sufficient kitchen for preparing pupils food						
Yes, and large enough to prepare food	52.9%	43.5%	0.385	82.4%	30.4%	**0.004**
Yes, but not large enough for food preparation	23.5%	43.5%		17.6%	56.5%	
No	23.5%	13.0%		0.0%	13.0%	
Status of the Kitchen						
Can't repair	7.7%	10.0%	0.993	29.4%	15.0%	0.052
Good Condition	23.1%	25.0%		35.3%	20.0%	
Slight Repair	38.5%	35.0%		35.3%	30.0%	
Serious repair	30.8%	30.0%		0.0%	35.0%	
Has enough fuel-efficient stoves						
Yes, and sufficient quantity	46.2%	40.0%	0.059	70.6%	40.0%	0.156
Yes, but not sufficient quantity	15.4%	50.0%		23.5%	40.0%	
No	38.5%	10.0%		5.9%	20.0%	
School main water supply						
No water source	0.0%	4.3%		0.0%	8.7%	
Water tank	35.3%	8.7%		11.8%	8.7%	
Water piped into school	11.8%	13.0%		23.5%	8.7%	
Water brought by pupils	0.0%	4.3%		0.0%	8.7%	
Public taps/stand pipes	0.0%	4.3%		11.8%	4.3%	
Tube well/borehole	23.5%	8.7%		23.5%	4.3%	
Rainwater collection	5.9%	4.3%		5.9%	0.0%	
Unprotected spring	0.0%	8.7%		11.8%	4.3%	
Cart with small tank	0.0%	4.3%		0.0%	8.7%	
Tanker truck	0.0%	21.7%		0.0%	8.7%	
Surface water	11.8%	4.3%		0.0%	13.0%	
Children carry water to school	11.8%	8.7%		11.8%	4.3%	
Other	0.0%	4.3%		0.0%	17.4%	
School Sanitation Facilities						
Has Latrines	100.0%	100.0%		100.0%	100.0%	
Has separate facilities for boys and girls	94.1%	87.0%	0.624	100.0%	87.0%	0.248
Has hand washing facilities that are used by pupils	35.3%	47.8%	0.428	58.8%	52.2%	0.676
Proportion of pupils who wash their hands						
Most pupils wash their hands	33.3%	81.8%	**0.046**	40.0%	83.3%	**0.030**
Only some pupils wash their hands	66.7%	18.2%		60.0%	8.3%	
There is no water to wash hands close to the latrine	0.0%	0.0%		0.0%	8.3%	
The School has a library	5.9%	26.1%	0.096	30.0%	47.1%	0.283
School Cook						
The school has a cook	100.0%	100.0%		100.0%	100.0%	
The cook is trained in food preparation	43.5%	26.1%	0.216	34.8%	21.7%	0.326
The cook is trained in food storage and handling	47.8%	17.4%	**0.028**	60.9%	17.4%	**0.003**
The Cook has a health certificate	30.4%	47.8%	0.227	60.9%	43.5%	0.238

40. A detailed comparison of background and other characteristics of parents and children is presented in Annex 8.

3.3.   Learning Outcomes

41. This section discusses the findings with respect to indicators of literacy and numeracy of school age children (7-13 years): improved attentiveness; and improved student attendance. It presents the findings organized under specific objectives and outcomes

in the MGD Performance Monitoring Plan (PMP).

MGD SO 1: Improved literacy of school age children

Summary of main findings
- Children in the control arm of the study (55.6%) performed significantly better on the highest category of the English literacy level (story) compared to the WFPSMP arm (40.6%).
- Children in the HGSMP arm of the study (64.6%) performed significantly better on the highest category of the English literacy level (story) compared to the WFPSMP arm (45.0%).
- The proportion of children with highest Kiswahili literacy level (story) was significantly higher in the control arm (66.0%) than WFPSMP (51.2%).
- The proportion of children with highest Kiswahili literacy level (story) was significantly higher in HGSMP arm (74.9%) than WFPSMP (53.5%).
- The proportion of children with highest numeracy level (division) was significantly higher in control arm (73.5%) than WFPSMP (60.9%).
- The proportion of children with highest numeracy level (division) was significantly higher in HGSMP arm (77.7%) than WFPSMP (60.1%).

42. Three specific performance indicators were agreed on for the monitoring of these learning outcomes.

Indicator 1: Proportion of 7-13 year olds that can solve Class 2 numeracy and literacy problems

43. As noted in the methodology, the data analyzed in this section was collected through the incorporation and use of the UWEZO test booklet in the survey tool for pupils. As part of the survey 5130 Pupils (2572 girls, 2558 boys) from class 3-8 were tested for literacy in Kiswahili and English and for numeracy using this tool.

44. The results followed the UWEZO parameters for numeracy acquisition which breaks down the level of language acquisition into five categories distinguishing between: children who are not able to read anything (marked as 'nothing'), those who can distinguish letters ('letter'); those who can read words ('word'); those who can read sentences ('sentence') and those who can read a story ('story'). All these capabilities are measured at a level that corresponds to Class 2. This means learning outcomes are assessed among children aged six to 16 years through tests set at what one would expect to have achieved in terms of literacy (and numeracy) at Standard (Grade/Class) 2 level in Kenya. The assumption behind this is that children need to acquire the basic skills in literacy and numeracy by the end of grade 2 to be able to acquire higher skills in the later grades. This is the standard at which many of learning assessments, including those in Kenya, peg their learning outcomes interventions.

Literacy (English)

45. The results show that across the full set of children, and regardless of the types of school, half of the children (52.5%) were able to handle the highest English literacy

level (story) of a class 2 child. The proportion was not significantly different between boys (51.2%) and girls (53.7%); (p=0.073)[19] (Figure 5).

Figure 5 – Percentage of boys and girls across English literacy categories of achievement for all types of schools using the UWEZO methodology (n=5130)

	Boys (n=2558)	Girls (n=2572)	Total (n=5130)
■ Nothing	3,6%	4,4%	4,0%
■ Letter	10,9%	10,8%	10,8%
■ Word	16,9%	15,4%	16,1%
■ Paragraph	17,5%	15,7%	16,6%
■ Story	51,2%	53,7%	52,5%
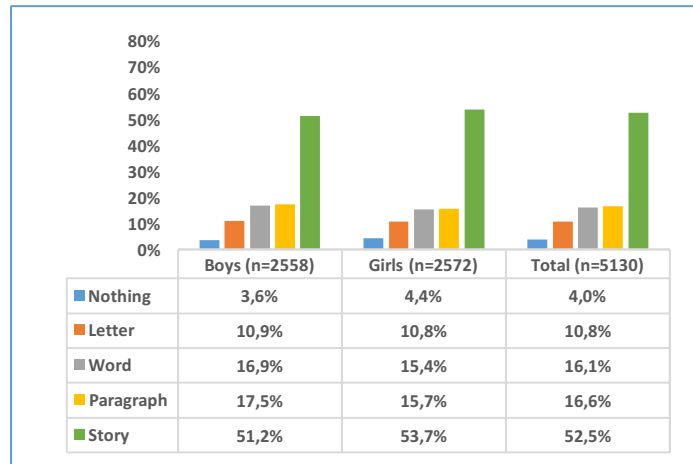
46. The percentage of children who could read at Class 2 level increased with the class of the child. The trend was consistent among boys and girls. However, while at class 3, the girls have a slightly higher level than boys, the latter catch up with girls at class 4 and 5. At class 6 and 7 girls perform better than boys, but the boys catch up with them again at class 8 (Figure 6).

Figure 6 - Percentage of children who attained the highest level English score in the UWEZO test (story), regardless of type of school, by class and by gender

	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
— Boys (n=2558)	15,1%	30,9%	46,0%	60,9%	77,1%	88,3%
— Girls (n=2572)	20,7%	31,5%	44,6%	65,8%	82,9%	86,6%
— Total (n=5130)	17,9%	31,2%	45,3%	63,3%	80,0%	87,4%

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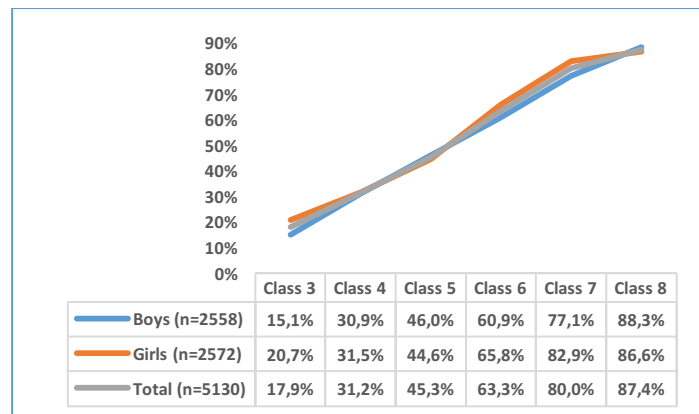
[19] P is a probability value that helps to determine the significance of the results. A small p value (typically $\leq$ 0.05) indicates strong evidence of difference (significant difference) between the compared parameter estimates. A large p value (typically > 0.05) indicates weak evidence of difference (no significant difference) between parameter estimates; p value very close to the cut off (0.05), is considered to infer marginal difference.

47. A further analysis examined the difference across target arms. Comparing pupils from the control group of school with the WFPSMP schools, Figure 7 and Table 6 show that, the proportion of children with highest English literacy level (story) was significantly higher in the control arm (55.6%) than in the WFPSMP arm (40.6%), (p=0.003).

48. Further analysis by gender revealed varying results. The proportion of children with highest English literacy level (story) among boys was significantly higher in the control arm (54.0%) than in the WFPSMP arm (42.8%), (p=0.019). However, among girls, the difference was not statistically significant (p=0.327).

Figure 7 – English literacy scores by category of achievement, comparing control schools with WFPSMP schools, by gender

	CONTROL (n=675)	WFPSMP (n=579)	CONTROL (n=721)	WFPSMP (n=565)	CONTROL (n=1396)	WFPSMP (n=1144)
	Boys (n=1254)		Girls (n=1286)		Total (n=2540)	
■ Nothing	3,4%	5,7%	3,1%	8,3%	3,2%	7,0%
■ Letter	11%	12,1%	9,3%	17,3%	10,1%	14,7%
■ Word	15%	20,4%	15,0%	18,6%	15,0%	19,5%
■ Paragraph	17%	19,0%	15,5%	17,5%	16,0%	18,3%
■ Story	54%	42,8%	57,1%	38,2%	55,6%	40,6%

49. A further comparison was done between the HGSMP schools and the WFPSMP schools. This analysis showed that a significantly higher proportion of pupils from the HGSMP arm obtained the highest English literacy level (story) (64.6%), compared to the WFPSMP pupils (45.0%), (p=0.001) (Figure 8 and Table 6).

Figure 8 - English literacy scores by category of achievement, comparing WFPSMP schools with HGSMP schools, by gender

	WFPSMP (n=593)	HGSMP (n=713)	WFPSMP (n=541)	HGSMP (n=743)	WFPSMP (n=1134)	HGSMP (n=1456)
	Boys (n=1306)		Girls (n=1284)		Total (n=2590)	
■ Nothing	5,4%	2,4%	8,5%	1,9%	6,9%	2,1%
■ Letter	10,3%	9,5%	14,4%	6,2%	12,3%	7,8%
■ Word	18,7%	13,9%	14,4%	11,2%	16,7%	12,5%
■ Paragraph	19,1%	13,2%	19,4%	12,8%	19,2%	13,0%
■ Story	46,5%	61,0%	43,3%	68,0%	45,0%	64,6%
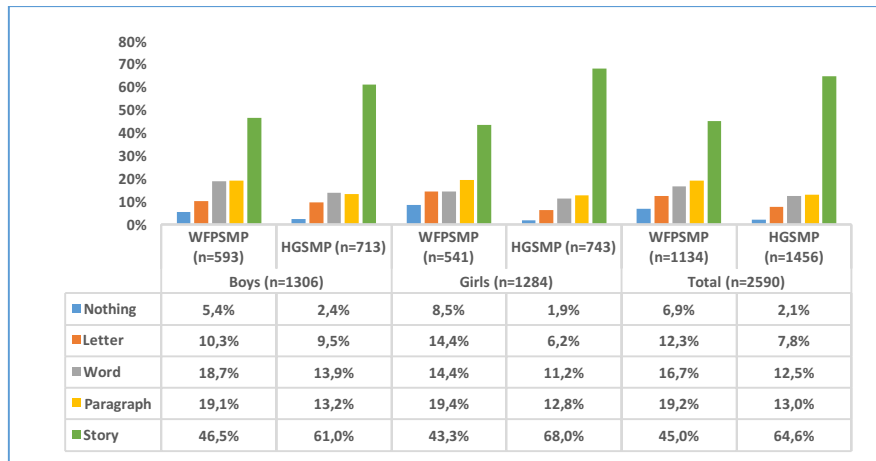
50. The proportion of girls with highest English literacy level (story) was significantly higher in HGSMP (68.0%) than in WFPSMP (43.3%), (p<0.001). However, the comparison between boys in both arms was not statistically significant (p=0.131).

Table 6 - Highest English Literacy Level of the Child

Variables	Boys (n=1254)				Girls (n=1286)				Total (n=2540)			
	AOR	95% CI		p value	AOR	95% CI		p value	AOR	95% CI		p value
		Lower	Upper			Lower	Upper			Lower	Upper	
Group												
WFPSMP	0.60	0.39	0.92	**0.019**	0.80	0.52	1.24	0.327	0.63	0.47	0.86	**0.003**
CONTROL	1.00				1.00				1.00			
Propensity score quintiles												
First	0.80	0.46	1.39	0.428	1.90	1.08	3.32	0.026	1.11	0.75	1.64	0.602
Second	1.03	0.60	1.76	0.927	1.89	1.08	3.29	0.025	1.38	0.94	2.03	0.099
Third	0.91	0.58	1.41	0.661	2.12	1.33	3.39	0.002	1.18	0.85	1.62	0.32
Fourth	0.95	0.67	1.36	0.794	0.94	0.66	1.36	0.751	1.04	0.81	1.34	0.765
Fifth	1.00				1.00				1.00			
Variables	**Boys (n=1306)**				**Girls (n=1284)**				**Total (n=2590)**			
	AOR	95% CI		p value	AOR	95% CI		p value	AOR	95% CI		p value
		Lower	Upper			Lower	Upper			Lower	Upper	
Group												
HGSMP	1.38	0.91	2.09	0.131	2.44	1.59	3.75	**<0.001**	1.64	1.23	2.19	**0.001**
WFPSMP	1.00				1.00				1.00			
Propensity score quintiles												
First	0.62	0.36	1.07	0.084	0.82	0.47	1.43	0.474	0.60	0.41	0.88	0.009
Second	0.63	0.38	1.07	0.085	0.66	0.39	1.11	0.113	0.54	0.38	0.77	0.001
Third	0.73	0.50	1.07	0.105	0.63	0.43	0.93	0.021	0.65	0.50	0.86	0.002
Fourth	0.79	0.56	1.13	0.200	0.88	0.60	1.28	0.489	0.77	0.59	0.99	0.042
Fifth	1.00				1.00				1.00			
AOR – Adjusted Odds Ratio												

Literacy (Kiswahili)

51. The results on literacy in Kiswahili indicate that 62.2% of children in class 3-8 were able to handle the highest Kiswahili literacy level (story) of a Class 2 child (Figure 9) showing therefore an acquisition of Kiswahili that was superior to that of the English literacy (see Section above). The proportion was significantly higher in girls (63.6%) than boys (60.9%); (p=0.046).

52. As was the case for the English results (reported above) the proportion of children by class achieving the highest Kiswahili literacy level (story) increased as the class level of the child went up. The trend was consistent in boys and girls.

Figure 9 – Percentage of boys and girls across Kiswahili literacy categories of achievement for all types of schools using the UWEZO methodology (n=5130)

	Boys (n=2558)	Girls (n=2572)	Total (n=5130)
Nothing	4,9%	5,2%	5,1%
Letter	6,2%	6,3%	6,3%
Word	10,9%	10,8%	10,9%
Paragraph	17,1%	14,0%	15,5%
Story	60,9%	63,6%	62,2%
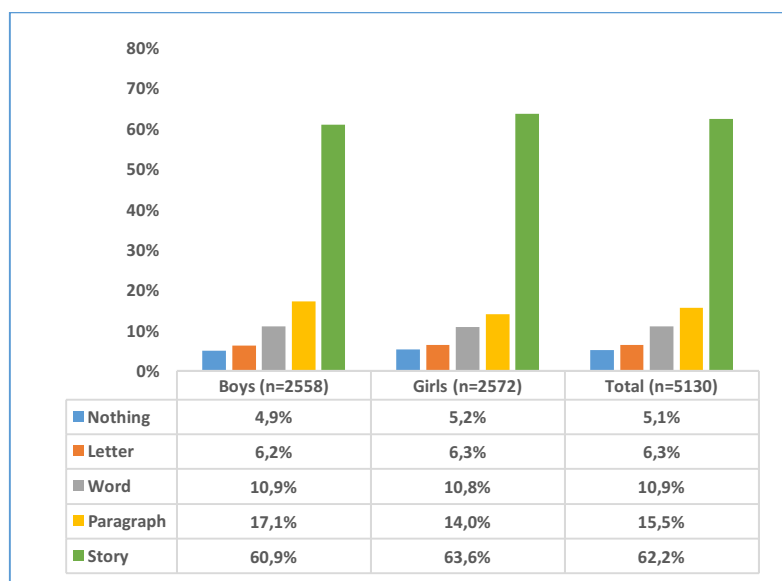
53. However, comparing across boys and girls, at class 3, the girls start at a slightly higher level than boys. Boys later catch up with girls at class 4 and 5. At class 6 and 7 girls perform better than boys, but the boys catch up with them again at class 8 (Figure 10).

Figure 10 - Percentage of children who attained the highest level Kiswahili score in the UWEZO test (story), regardless of type of school, by class and by gender

	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
Boys (n=2558)	22,1%	45,8%	60,2%	72,3%	82,6%	90,6%
Girls (n=2572)	29,4%	43,5%	60,3%	78,6%	88,6%	89,5%
Total (n=5130)	25,9%	44,7%	60,2%	75,4%	85,6%	90,0%
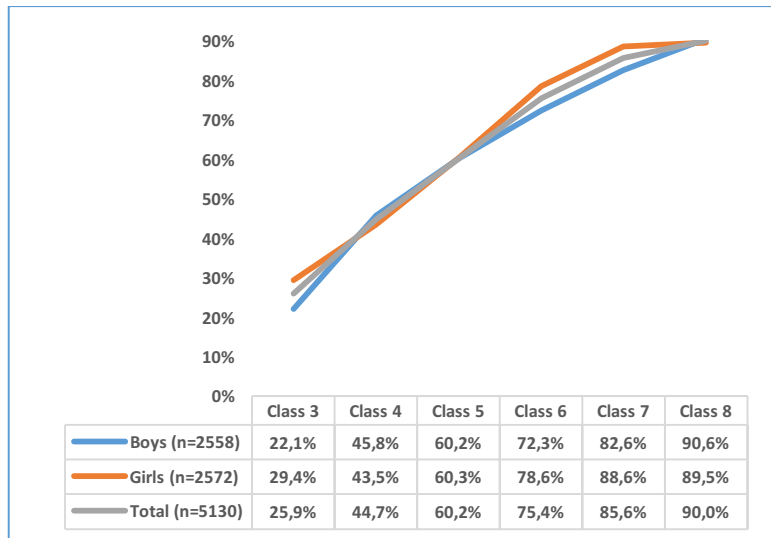
54. As was the case for the English results, further analysis, comparing the different arms was done for the Kiswahili results. Adjusting for propensity score, the proportion of children with highest Kiswahili literacy level (story) was significantly higher in control arm (66.0%) than WFPSMP (51.2%); (p=0.034), and significantly higher in HGSMP arm (74.9%) than WFPSMP (53.5%); (p<0.001) (Figure 11 and Table 7). Like the English results, the stratification by gender again revealed contrary results. Disaggregated by gender the proportion of children with highest Kiswahili literacy level (story) was not significantly different between control and WFPSMP arms, in both boys (p=0.183) and girls (p=0.236).

Figure 11 – Kiswahili results by category of achievement, comparing control schools with WFPSMP schools, by gender

	CONTROL (n=675)	WFPSMP (n=579)	CONTROL (n=721)	WFPSMP (n=565)	CONTROL (n=1396)	WFPSMP (n=1144)
	Boys (n=1254)		Girls (n=1286)		Total (n=2540)	
Nothing	5,5%	5,7%	5,5%	7,1%	5,5%	6,4%
Letter	4,7%	7,9%	4,3%	9,7%	4,5%	8,8%
Word	10,1%	13,5%	8,7%	17,0%	9,4%	15,2%
Paragraph	15,7%	20,6%	13,6%	16,1%	14,6%	18,4%
Story	64,0%	52,3%	67,8%	50,1%	66,0%	51,2%
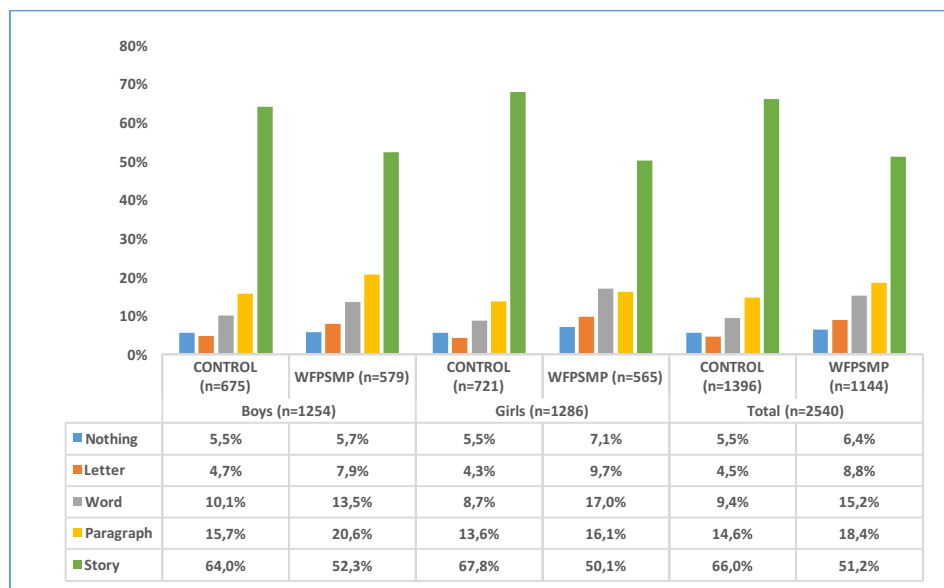
55. However, comparing the HGSMP arm, with the WFPSMP arm, it was found that the proportion of children with the highest Kiswahili literacy level (story) was significantly higher in HGSMP arm (78.1%) than WFPSMP (53.2%); (p<0.001). This was similar among the boys, where the proportion of children with highest Kiswahili literacy level (story) was also significantly higher in HGSMP arm (71.5%) than WFPSMP (53.8%); (p=0.055) (Figure 12).

Figure 12 - Kiswahili results by category of achievement, comparing WFPSMP schools with HGSMP schools, by gender

	Boys (n=1306)		Girls (n=1284)		Total (n=2590)	
	WFPSMP (n=593)	HGSMP (n=713)	WFPSMP (n=541)	HGSMP (n=743)	WFPSMP (n=1134)	HGSMP (n=1456)
Nothing	5,4%	4,6%	8,5%	2,8%	6,9%	3,7%
Letter	7,6%	4,2%	7,9%	3,1%	7,8%	3,6%
Word	12,3%	8,0%	12,9%	6,1%	12,6%	7,0%
Paragraph	20,9%	11,6%	17,4%	10,0%	19,2%	10,8%
Story	53,8%	71,5%	53,2%	78,1%	53,5%	74,9%
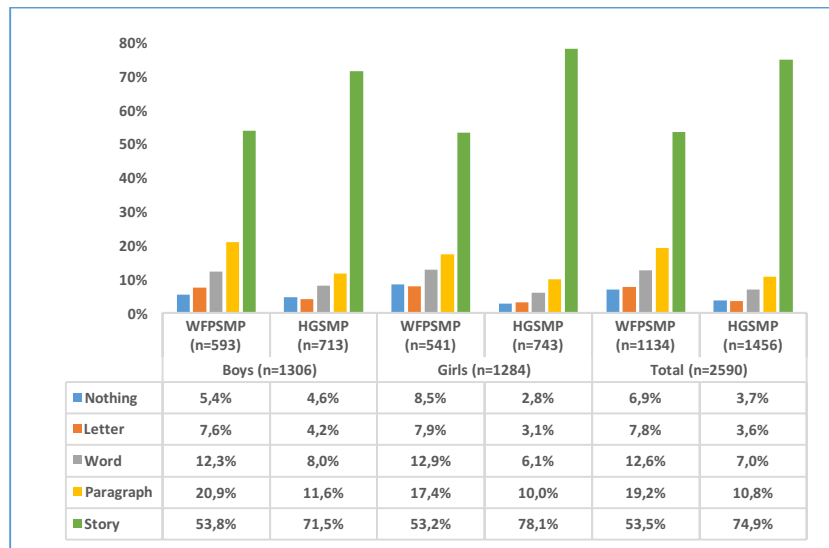
Table 7 - Highest Kiswahili Literacy Level (story) of the Child

	Boys (n=1254)				Girls (n=1286)				Total (n=2540)			
		95% CI		p value		95% CI		p value		95% CI		p value
Variables	AOR	Lower	Upper		AOR	Lower	Upper		AOR	Lower	Upper	
Group												
WFPSMP	0.75	0.49	1.15	0.183	0.76	0.49	1.19	0.236	0.72	0.53	0.98	**0.034**
CONTROL	1.00				1.00				1.00			
Propensity score quintiles												
First	1.09	0.63	1.89	0.772	1.75	0.99	3.10	0.055	1.36	0.92	2.02	0.127
Second	1.46	0.84	2.52	0.177	1.74	0.99	3.05	0.056	1.51	1.03	2.23	0.037
Third	1.10	0.70	1.71	0.684	1.87	1.17	2.99	0.009	1.32	0.96	1.82	0.088
Fourth	0.94	0.66	1.33	0.716	0.97	0.68	1.38	0.865	0.99	0.78	1.27	0.958
Fifth	1.00				1.00				1.00			
	Boys (n=1306)				Girls (n=1284)				Total (n=2590)			
		95% CI		p value		95% CI		p value		95% CI		p value
Variables	AOR	Lower	Upper		AOR	Lower	Upper		AOR	Lower	Upper	
Group												
HGSMP	1.53	0.99	2.35	0.055	2.77	1.76	4.37	**<0.001**	1.74	1.28	2.35	**<0.001**
WFPSMP	1.00				1.00				1.00			
Propensity score quintiles												

First	0.49	0.28	0.86	0.013	0.65	0.36	1.19	0.164	0.45	0.30	0.68	<0.001
Second	0.58	0.33	1.00	0.049	0.87	0.49	1.55	0.640	0.57	0.39	0.83	0.004
Third	0.72	0.48	1.09	0.117	0.71	0.46	1.10	0.123	0.66	0.49	0.89	0.007
Fourth	0.68	0.46	1.00	0.050	0.81	0.53	1.24	0.322	0.74	0.56	0.99	0.042
Fifth	1.00				1.00				1.00			
AOR – Adjusted Odds Ratio												

Numeracy

56. Similar analyses were done on the numeracy portion of the UWEZO test. The numeracy test includes eight levels of acquisition which are ordered from 'nothing' to 'division' with the latter reflecting the highest level of acquisition.

57. The results show that over two-thirds of children in Class 3-8 (69.7%) can solve the highest numeracy level tasks (division) of a Class 2 child. The proportion was consistent between boys (69.9%) and girls (69.4%) (Figure 13).

Figure 13 – Percentage of boys and girls across categories of numeracy achievement for all types of schools (n=5130)

	Boys (n=2558)	Girls (n=2572)	Total (n=5130)
Nothing	2,0%	1,7%	1,9%
Counting and matching	1,9%	2,8%	2,4%
Numerical recognition 10-99	1,7%	2,0%	1,9%
Which one is greater	0,2%	0,3%	0,3%
Addition	5,8%	4,5%	5,1%
Subtraction	8,8%	9,8%	9,3%
Multiplication	9,7%	9,4%	9,6%
Division	69,9%	69,4%	69,7%
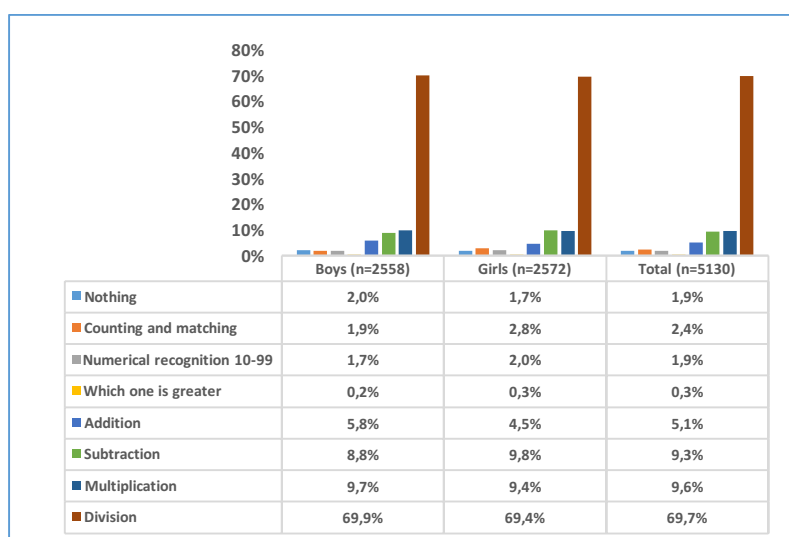
58. There was an increasing trend in highest numeracy level (division) of a Class 2 child with increase in class of the child. The trend was consistent among boys and girls. However, at class 3, the boys start at a slightly higher level than girls, the latter catch up with boys at class 4 and above (Figure 14).

Figure 14 - Percentage of children who attained the highest level Numeracy score in the UWEZO test (division), regardless of type of school, by class and by gender

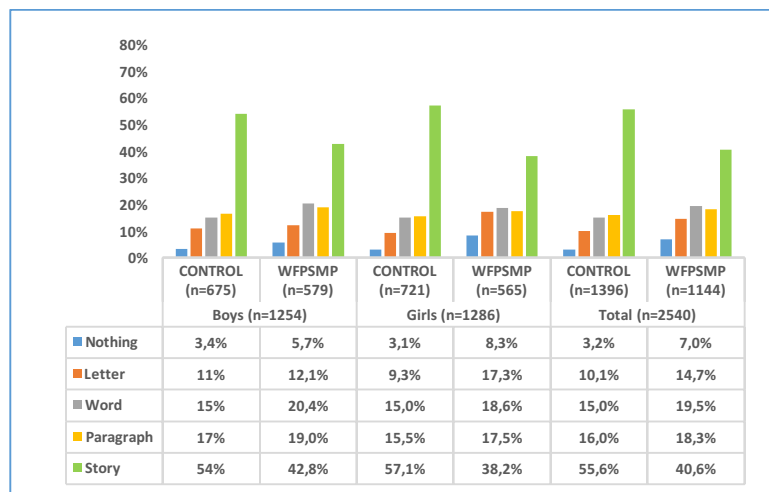|	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
Boys (n=2558)	38,8%	55,1%	72,2%	80,7%	86,4%	92,5%
Girls (n=2572)	34,0%	55,6%	72,4%	81,3%	87,0%	93,9%
Total (n=5130)	36,3%	55,3%	72,3%	81,0%	86,7%	93,3%
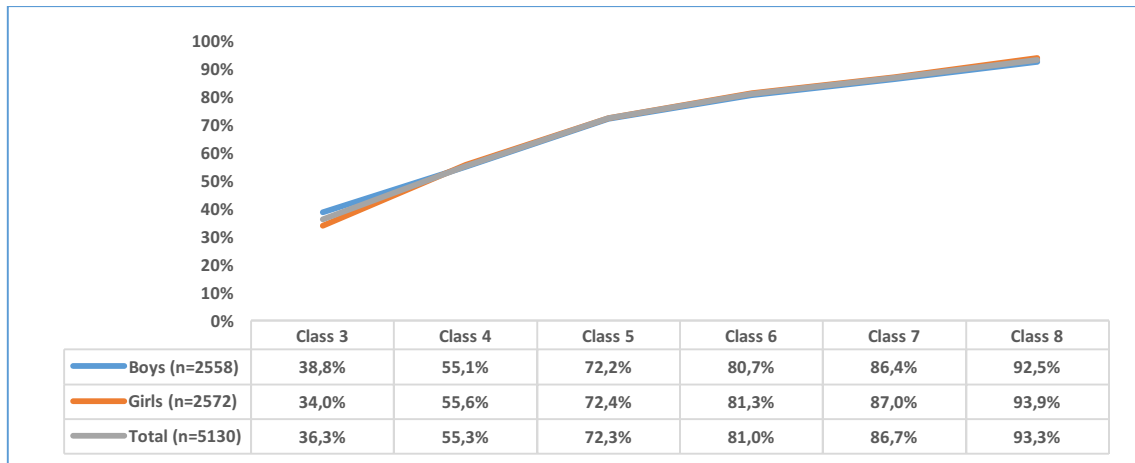
59. The results after adjusting for differences across the three arms of study show that, the proportion of children with highest numeracy level (division) was significantly higher in control arm (73.5%) than WFPSMP (60.9%); (p=0.034) (Figure 15 and Table 8).

Figure 15 - Numeracy results by category of achievement, comparing control schools with WFPSMP schools, by gender

	CONTROL (n=675) Boys (n=1254)	WFPSMP (n=579)	CONTROL (n=721) Girls (n=1286)	WFPSMP (n=565)	CONTROL (n=1396) Total (n=2540)	WFPSMP (n=1144)
Nothing	1,3%	2,8%	0,8%	3,4%	1,1%	3,1%
Counting and matching	1,8%	2,4%	1,8%	5,3%	1,8%	3,8%
Numerical recognition 10-99	0,9%	3,5%	1,5%	2,5%	1,2%	3,0%
Which one is greater	0,0%	0,3%	0,3%	0,2%	0,1%	0,3%
Addition	5,2%	7,9%	3,7%	7,6%	4,4%	7,8%
Subtraction	8,6%	10,9%	8,9%	10,8%	8,7%	10,8%
Multiplication	9,6%	10,4%	8,6%	10,3%	9,1%	10,3%
Division	72,6%	61,8%	74,3%	60,0%	73,5%	60,9%
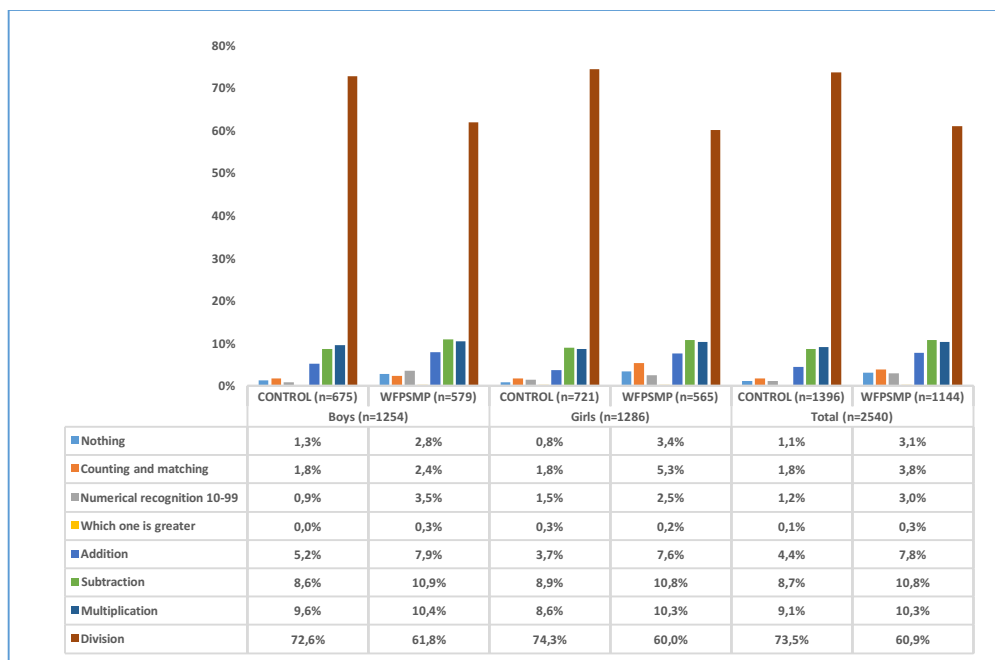
60. Similarly, the proportion of children with the highest numeracy level (division) was significantly different between the HGSMP (77.7%) and WFPSMP (60.1%); (p=0.001),

(Figure 13 and Table 8).

Figure 16 - Numeracy results by category of achievement, comparing WFPSMP schools with HGSMP School, by gender

	WFPSMP (n=593)	HGSMP (n=713)	WFPSMP (n=541)	HGSMP (n=743)	WFPSMP (n=1134)	HGSMP (n=1456)
	Boys (n=1306)		Girls (n=1284)		Total (n=2590)	
■ Nothing	4,0%	1,4%	3,1%	0,9%	3,6%	1,2%
■ Counting and matching	3,2%	1,5%	6,8%	1,2%	4,9%	1,4%
■ Numerical recognition 10-99	1,3%	1,3%	2,8%	1,3%	2,0%	1,3%
■ Which one is greater	0,2%	0,3%	0,6%	0,0%	0,4%	0,1%
■ Addition	7,4%	3,6%	7,0%	2,7%	7,2%	3,2%
■ Subtraction	9,9%	6,5%	11,3%	8,9%	10,6%	7,7%
■ Multiplication	11,3%	6,6%	10,9%	8,3%	11,1%	7,5%
■ Division	62,6%	78,8%	57,5%	76,6%	60,1%	77,7%
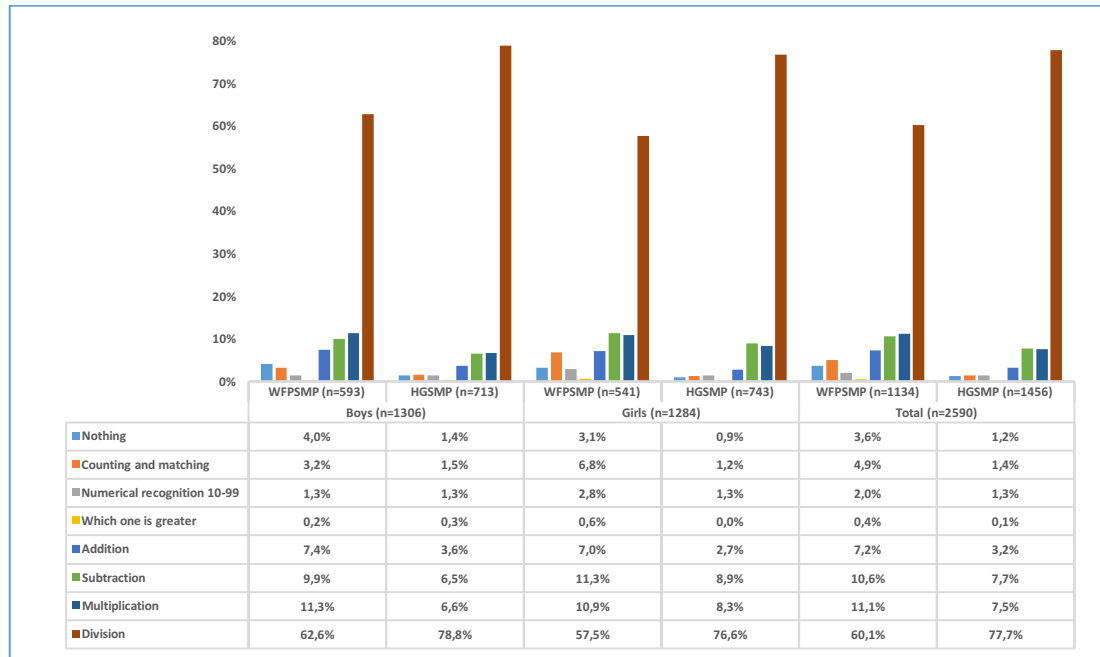
61. Stratification by gender revealed contrary results. The proportion of children with highest numeracy level (division) was not significantly different between control and WFPSMP arms, in both boys (p=0.103) and girls (p=0.205). However, this was not the case for HGSMP and WFPSMP where stratification by gender revealed consistent results. Among the girls, the proportion of children with highest numeracy level (division) was significantly higher in HGSMP arm (76.6%) than WFPSMP (57.5%), (p=0.007). Among the boys, the proportion of children with highest numeracy level (division) was not significantly higher in HGSMP arm (78.8%) than WFPSMP (68.8%) (p=0.073).

Table 8 - Highest Numeracy Level (division) of the Child

Variables	Boys (n=1254)				Girls (n=1286)				Total (n=2540)			
		95% CI				95% CI		p value		95% CI		
	AOR	Lower	Upper	p value	AOR	Lower	Upper		AOR	Lower	Upper	p value
Group												
WFPSMP	0.69	0.44	1.08	0.103	0.74	0.47	1.18	0.205	0.71	0.51	0.97	**0.034**
CONTROL	1.00				1.00				1.00			
Propensity score quintiles												
First	0.97	0.54	1.73	0.906	1.56	0.86	2.82	0.144	1.24	0.82	1.88	0.309
Second	1.23	0.69	2.18	0.491	1.57	0.87	2.83	0.131	1.33	0.89	2.00	0.17
Third	1.07	0.68	1.70	0.763	1.32	0.82	2.13	0.259	1.19	0.86	1.66	0.301
Fourth	0.87	0.61	1.25	0.449	0.95	0.67	1.36	0.789	0.91	0.71	1.17	0.454
Fifth	1.00				1.00				1.00			

Variables	Boys (n=1306)				Girls (n=1284)				Total (n=2590)			
		95% CI				95% CI		p value		95% CI		
	AOR	Lower	Upper	p value	AOR	Lower	Upper		AOR	Lower	Upper	p value
Group												
HGSMP	1.52	0.96	2.40	0.073	1.85	1.18	2.89	0.007	1.72	1.26	2.35	**0.001**
WFPSMP	1.00				1.00				1.00			
Propensity score quintiles												
First	0.55	0.30	1.01	0.052	0.65	0.36	1.16	0.143	0.65	0.43	0.98	0.038
Second	0.61	0.34	1.09	0.096	0.73	0.42	1.27	0.27	0.68	0.46	1.01	0.053
Third	0.72	0.46	1.12	0.142	0.77	0.51	1.18	0.226	0.82	0.60	1.11	0.198
Fourth	0.95	0.62	1.46	0.804	0.99	0.65	1.50	0.957	0.96	0.71	1.29	0.764
Fifth	1.00				1.00				1.00			
AOR – Adjusted Odds Ratio												

Indicator 2: Number of individuals benefiting directly from USDA-funded interventions

62. No activities, USDA - WFP interventions, had been planned prior to the time of the baseline. The value for this indicator is therefore zero at baseline.

Indicator 3: Number of individuals benefiting indirectly from USDA-funded interventions

63. No activities, USDA - WFP interventions, had been planned prior to the time of the baseline. The value for this indicator is therefore zero at baseline.

64. The direct beneficiaries of the USDA interventions are primarily the girls and boys

receiving school meals and attending schools supported by WFP.

65. The indirect beneficiaries are primarily the household members who do not receive school meals themselves (parents, other adults, and out-of-school siblings), but who benefit, as the food security of the entire household is relieved if the school-going children receive healthy school meals.

66. Data for this indicator would be realized through interviews with parents to determine the average number of children per household going to schools supported by WFP. Since the average household size in target areas is known.

Indirect beneficiaries = Number of Households (HH) * (HH size- average number of children per HH going to school).

MGD 1.2: Improved Attentiveness

Indicator 4: Percent of students in classrooms identified as inattentive by their teachers

67. The data on this indicator was collected using the parent-child tool. A relatively high proportion of the children (43.0%) indicated that they sometimes find it difficult to concentrate in class. The findings indicate that the proportion of children who sometimes find it difficult to concentrate in class was comparable between boys (43.8%) and girls (42.2%) (Figure 17).

Figure 17 - Percentage of boys and girls for all types of schools who report "sometimes" finding it difficult to concentrate in class (n=5130)
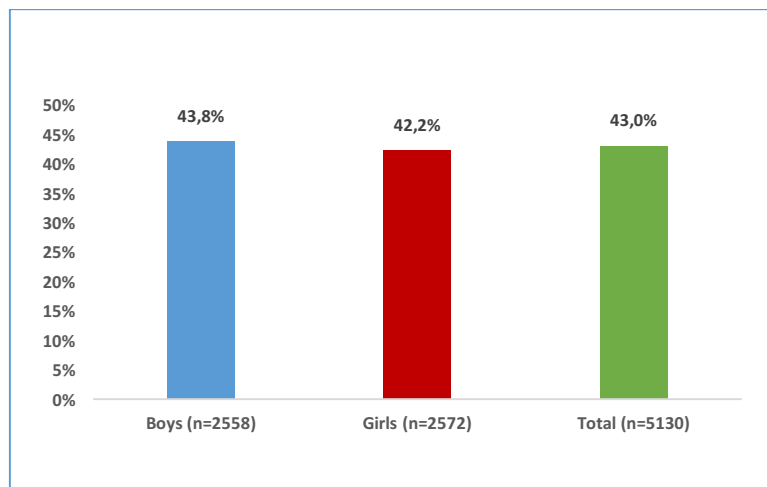
68. Adjusting for propensity score, the proportion of children who indicated that sometimes they find it difficult to concentrate in class was significantly higher in

control arm (46.4%) than WFPSMP (41.1%) (p=0.016) (Figure 18 and Table 9).

Figure 18 - Percentage of children who sometimes find it difficult to concentrate in class comparing control and WFPSMP schools, by gender
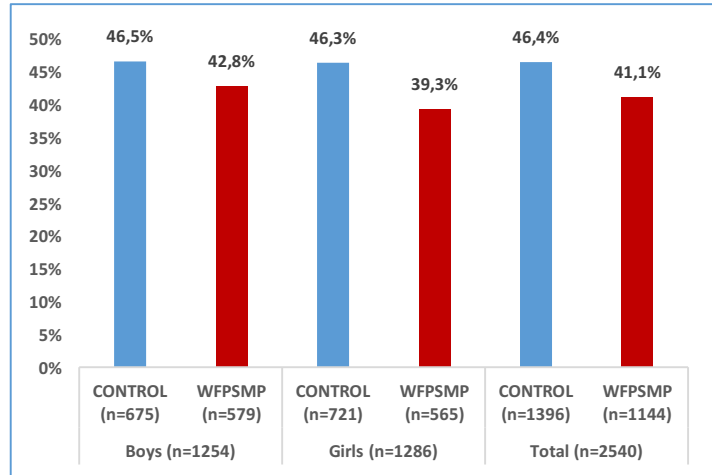
69. On the other hand, adjusting for difference between HGSMP and WFPSMP shows the proportion to be significantly higher in HGSMP arm (43.5%) than WFPSMP (37.4%), (p=0.028) (Figure 19 and Table 9). Stratification by gender reveals consistent results in both cases.

Figure 19 – Percentage of children who sometimes find it difficult to concentrate in class comparing WFPSMP schools with HGSMP School, by gender
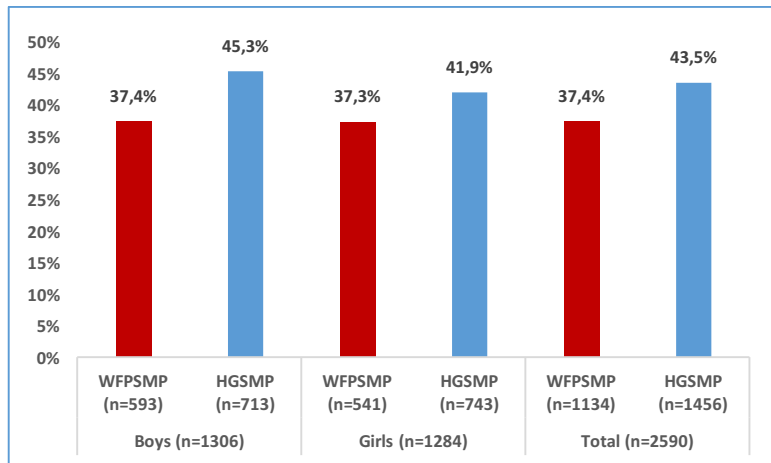
Table 9 - Child sometimes finds it difficult to concentrate in class

Variables	Boys (n=1254)				Girls (n=1286)				Total (n=2540)			
		95% CI				95% CI				95% CI		
	AOR	Lower	Upper	p value	AOR	Lower	Upper	p value	AOR	Lower	Upper	p value
Group												
WFPSMP	0.70	0.46	1.08	0.108	0.67	0.43	1.03	0.068	0.69	0.51	0.93	**0.016**
CONTROL	1.00				1.00				1.00			
Propensity score quintiles												
First	0.71	0.41	1.24	0.227	0.98	0.56	1.73	0.954	0.79	0.53	1.16	0.228
Second	0.79	0.46	1.35	0.384	1.01	0.58	1.77	0.961	0.89	0.61	1.31	0.568
Third	0.79	0.50	1.23	0.292	1.14	0.71	1.83	0.581	0.91	0.66	1.26	0.581
Fourth	0.93	0.66	1.33	0.699	1.43	1.00	2.05	0.049	1.06	0.82	1.36	0.673
Fifth	1.00				1.00				1.00			
Variables	Boys (n=1306)				Girls (n=1284)				Total (n=2590)			
		95% CI				95% CI				95% CI		
	AOR	Lower	Upper	p value	AOR	Lower	Upper	p value	AOR	Lower	Upper	p value
Group												
HGSMP	1.57	1.03	2.39	**0.038**	1.19	0.78	1.82	0.420	1.39	1.04	1.86	**0.028**
WFPSMPL	1.00				1.00				1.00			
Propensity score quintiles												
First	1.10	0.64	1.90	0.722	1.04	0.60	1.81	0.881	1.05	0.72	1.54	0.798
Second	1.25	0.74	2.11	0.402	1.32	0.80	2.20	0.278	1.33	0.93	1.89	0.117
Third	1.33	0.92	1.92	0.136	1.35	0.94	1.96	0.108	1.41	1.08	1.83	0.01
Fourth	0.93	0.65	1.31	0.662	1.32	0.93	1.88	0.124	1.05	0.82	1.34	0.716
Fifth	1.00				1.00				1.00			
AOR – Adjusted Odds Ratio												

70. The findings of the key reasons why children at times find it difficult to concentrate in class (across all types of school) are shown in the table below. This shows that "I am hungry" ranked as the most prevalent explanation (62 percent), followed by "feeling sick" (36 percent) (Figure 20).

Figure 20 - Reasons why children "sometimes" find it difficult to concentrate in class
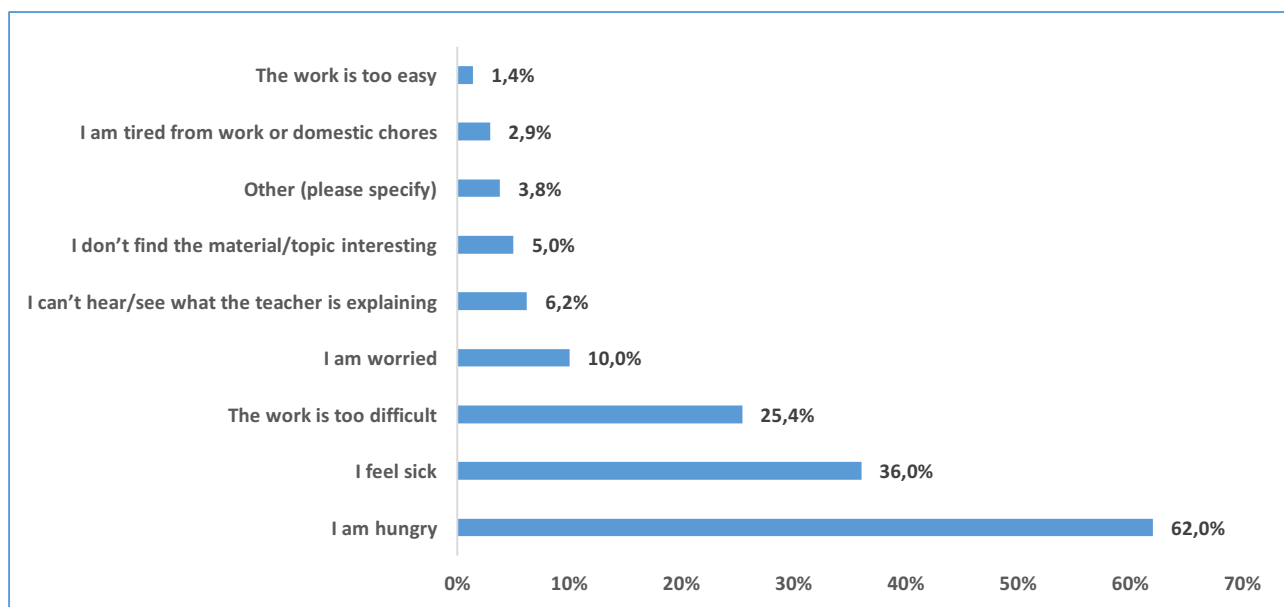
71. Results from the focus group discussions in the survey schools with parents and pupils provided additional insights on how hunger and the absence of school meals impacts on the capacity for concentration and the willingness of children to stay in school (Box 1).

Box 1 – PTA, BoM and Student's Government responses across the three target arms of the study on the impact of hunger/absence of school meals on attention and willingness to go to school

Impact of hunger/absence of school meals on attention and willingness to go to school:

- Absenteeism rises as many pupils stay at home.
- Pupils are released from school earlier than usual.
- Poor concentration in class- pupils are inattentive in class.
- Pupils transfer or drop out of school.
- Pupils perform poorly in school – they fail examinations.
- There is an increase in indiscipline among pupils including sneaking out of school to look for food.
- Pupils fall sick or fake sickness to leave school.
- Pupils go to the nearest market to beg or resort to stealing.
- Pupils spend most of their time discussing about food and do not cooperate when asked to do school work.

3.4.   Short-term Hunger

72. This section covers the situation with respect to food consumption by children during the day and week. It also looks at results for the Food Consumption Scores of households covered by the survey and associated coping mechanisms. The data was collected through the parent/child tool with the parents as respondents.

MGD 1.2.1 Reduced Short-Term Hunger

Summary of main findings
- Just over one-third of the parents/guardians (38.7%) indicated their children ate food daily (in the last 1 week) *before going to school.*
- The proportion of parents/guardians who indicated their children ate food daily (in the last 1 week) before going to school was significantly higher among those in control schools (38.0%) than WFPSMP schools (33.0%).
- The proportion of parents/guardians who indicated their children ate food daily (in the last 1 week) before going to school was slightly higher among those in HGSMP (43.2%) than WFPSMP (38.7%).

Indicator 5: Number of daily school meals (breakfast, snack, lunch) provided to school-age children because of USDA assistance

73. No activities, USDA-WFP interventions, had been planned prior to the time of the baseline. This indicator will therefore be measured at mid- and end-line and is zero at baseline.

Indicator 6: Number of school-aged children receiving daily school meals (breakfast, snack, lunch) because of USDA assistance

74. No activities, USDA-WFP interventions, had been planned prior to the time of the baseline. This indicator will therefore be measured at mid- and end-line and is zero at baseline.

Indicator 7: Percent of students in target schools who regularly consume a meal before the school day

75. Data for this indicator was collected through the parent/pupil tool. A total of 5130 parents and 5130 pupils were interviewed.

76. More than one-third of the parents/guardians (38.7%) indicated their children ate food daily (in the last 1 week) before going to school. More than one-half of the parents/guardians (59.2%) indicated their children ate food daily (in the last 1 week) after coming from school.

77. Adjusted for propensity score, the results shown in Figure 21 indicate that the proportion of parents/guardians who indicated their children ate food daily (in the last 1 week) *before* going to school was significantly higher among those in control

schools (38.0%) than WFPSMP schools (33.0%); (p=0.009).

Figure 21 - Percentage of parents/guardians who reported their children ate daily before going to school, comparing control and WFPSMP schools, by gender
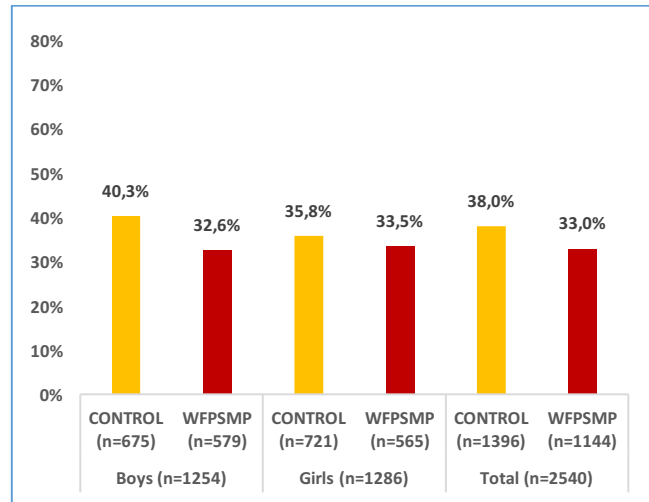
78. The percentage of parents/guardians whose children ate food daily (in the last 1 week) *after* coming from school (Figure 22) was significantly higher among those in control (70.6%) than WFPSMP (45.5%); (p<0.001). The results in both cases were consistent by gender.

Figure 22 - Percentage of parents/guardians who reported their children ate daily after going to school, comparing control and WFPSMP schools, by gender
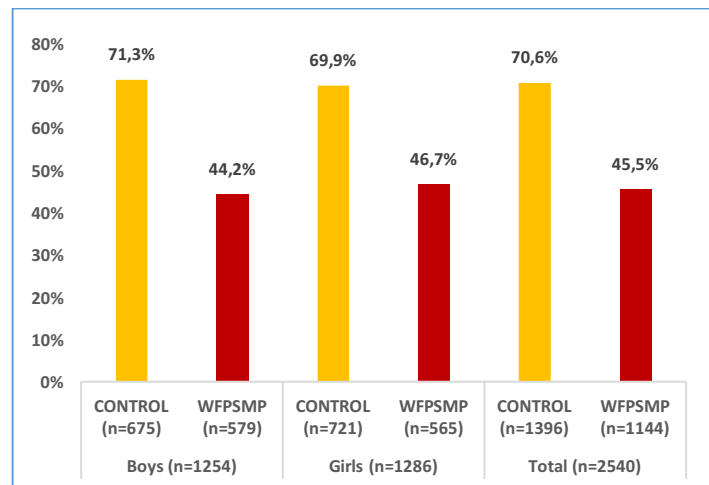
79. An analysis of the difference between WFPSMP and HGSMP schools (Figure 23) showed a similar trend. The proportion of parents/guardians whose children ate food daily (in the last 1 week) before going to school was slightly higher among children in

the HGSMP (43.2%) than in the WFPSMP (38.7%); (p=0.021).

Figure 23 - Percentage of parents/guardians who reported their children ate daily before going to school, comparing WFPSMP schools and HGSMP schools, by gender
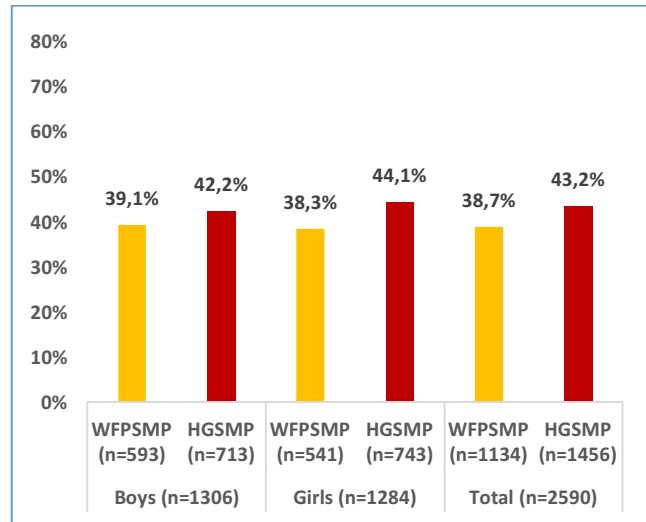
80. Similarly, the proportion of parents/guardians whose children ate food daily (in the last 1 week) *after* coming from school (Figure 24) was significantly higher among those in HGSMP (71.2%) than WFPSMP (46.9%); (p<0.001). The results were consistent by gender.

Figure 24 - Percentage of parents/guardians who reported their children ate daily after going to school, comparing WFPSMP schools and HGSMP schools, by gender
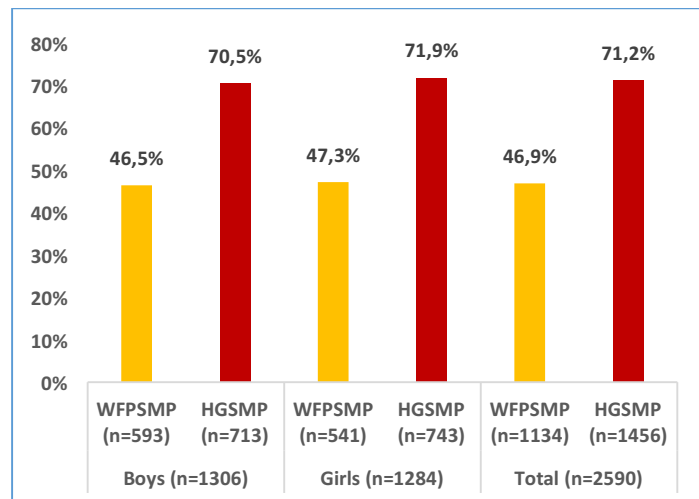
81. **Food Consumption Scores:**[20] To further anchor the preceding results in the context, an analysis of the household Food Consumption Score was undertaken. The results show that over a third of the children (39.5%) reside in households with acceptable food consumption score, 32.2% in households with borderline and 28.3% in households with poor consumption score. The proportion of households with acceptable food consumption score was significantly higher among male parents/guardians (42.9%) than female (38.2%); (p=0.002) (Figure 25).

Figure 25 – Percentage of parent/guardians with acceptable food consumption score (FCS) by gender
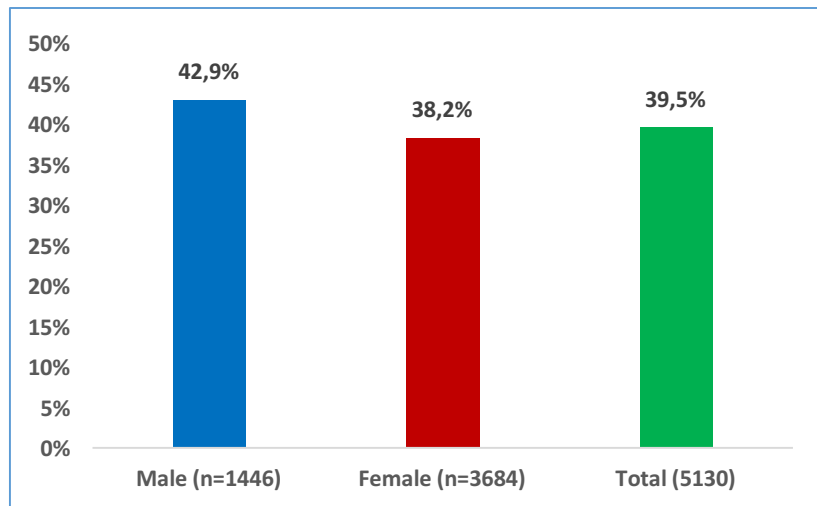
82. Looking at these results in more detail against level of education of the parents (Figure 26), the proportion of households with acceptable food consumption scores was significantly higher among parents/guardians who attained madrasa/adult learning level of education (62.7%) and those with technical college/university level (58.9%), and lower among parents/guardians who have never attended school (36.7%) and those who did not complete primary education (34.1%); (p<0.001).

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[20] The Food consumption score was calculated using WFP's guidelines as set out in: WFP VAM Unit (2008). Food consumption analysis - Calculation and use of the food consumption score in food security analysis. World Food Programme, Vulnerability Analysis and Mapping.

83. The results for the analysis of differences across the three study arms in the survey (Figure 27) show that the proportion of children residing in households with acceptable FCS was not significantly different among those in control (35.4%) and WFPSMP (35.2%) (p=0.916).

Figure 27 - Proportion of children residing in households with acceptable FCS, comparing control and WFPSMP schools
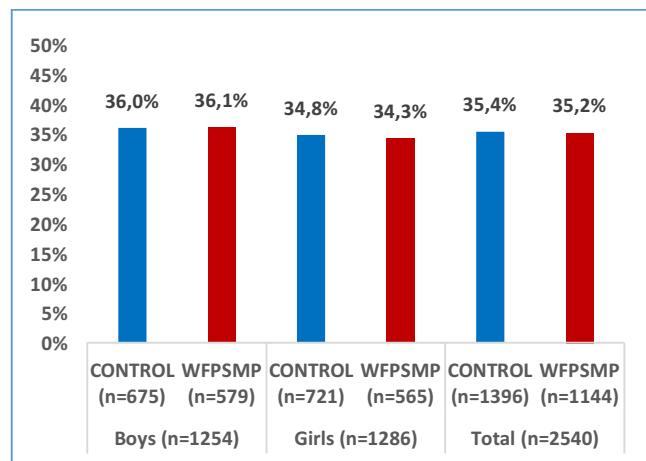
84. Similarly, the results for children residing in households with acceptable FCS was not significantly different among those in HGSMP (41.2%) and WFPSMP (42.7%);

(p=0.443) (Figure 28). The results were consistent by gender.

Figure 28 - Proportion of children residing in households with acceptable FCS, comparing WFPSMP and HGSMP schools
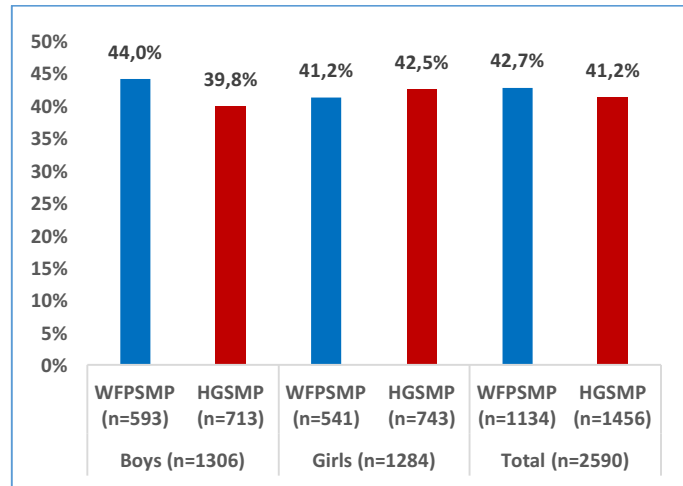
85. **Coping Mechanisms:** The survey sought to establish what the most common coping strategies were by parents/guardians on days when the family did not have enough food or money to buy food.

86. In order of importance the reported coping strategies include: purchase food on credit (80.8%), reliance on less preferred and less expensive foods (80.6%), reduce number of meals eaten in a day (67.4%), limit portion size at mealtimes (66.2%), borrow food, or rely on help from a friend or relative (64.9%), restrict consumption by adults in order for small children to eat (50.6%) or skip entire days without eating (42.3%) (Figure 29). Coincidentally, withdrawing children from school did not feature in the coping mechanisms cited.

Figure 29 – Reported coping strategies on days when the family did not have enough food, or money to buy food

Strategy	Value
Feed working members of HH at the expense of non-working members	12,1%
Send household members to beg	13,5%
Consume seed stock held for next season	15,6%
Gather wild food, hunt, or harvest immature crops	22,9%
Send household members to eat elsewhere	24,0%
Skip entire days without eating	42,3%
Restrict consumption by adults in order for small children to eat	50,6%
Borrow food, or rely on help from a friend or relative	64,9%
Limit portion size at mealtimes	66,2%
Reduce number of meals eaten in a day	67,4%
Rely on less preferred and less expensive foods	80,6%
Purchase food on credit	80,8%

87. The computed mean coping strategy index (CSI)[21] (Figure 30) was comparable between control (33.1) and WFPSMP (32.0).

Figure 30 - CSI comparing WFPSMP and control group schools, by gender

	WFPSMP (n=579)	CONTROL (n=675)	WFPSMP (n=565)	CONTROL (n=721)	WFPSMP (n=1144)	CONTROL (n=1396)
Top	33,0	34,9	34,5	34,1	33,2	34,1
Mean	31,3	33,5	32,8	32,7	32,0	33,1
Bottom	29,6	32,0	31,1	31,3	30,8	32,1
	Boys (n=1254)		Girls (n=1286)		Total (n=2540)	

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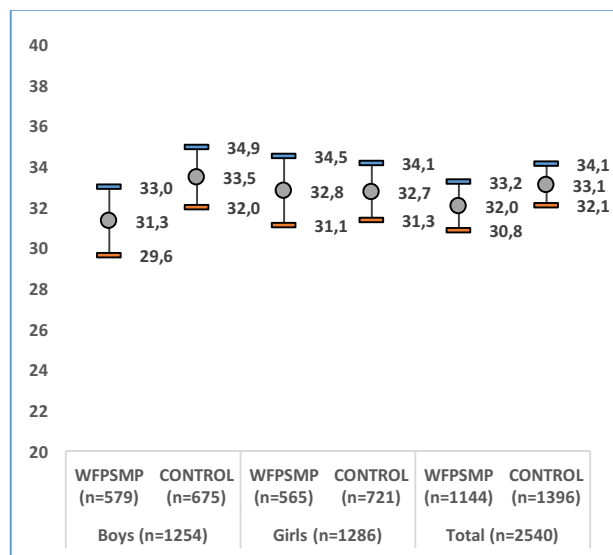
[21] The Coping Strategies Index was calculated using the methodology proposed in: Maxwell, D. & R. Caldwell (2008). A tool for rapid measurement of household food security and the impact of food aid programs in humanitarian emergencies. Field Methods Manual, Second Edition.

88. The CSI was also comparable between HGSMP (35.2) and WFPSMP (35.6). The results were consistent by gender.

Figure 31 - CSI comparing HGSMP and WFPSMP schools, by gender
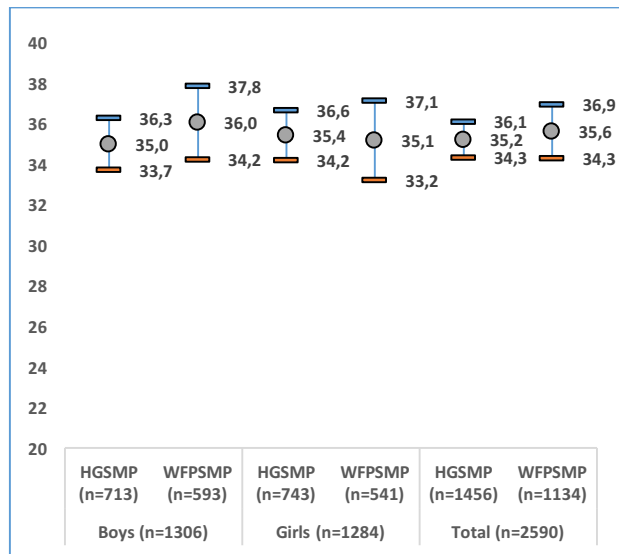
89. Results from the focus group discussions in the survey schools with parents and pupils provided additional insights on the food security situation of families.

Box 2 – PTA, BoM and Student's Government responses across the three target arms of the study on food security situation in families

In response to a question on alternatives to school meals where the latter are not consistently available the respondents indicated the following that shed light on the food security situation in the families:

Responses from WFPSMP schools	Responses from Control schools	Responses from HGSMP schools
• Parents are required to pay or their children stay without lunch. • Parents are asked to bring food to school • Parents and teachers contribute money for buying food • children stay without lunch	• Parents give their children cash to buy food from nearby markets • The children survive without lunch • The learners go home for lunch • Some learners carry food from home.	• Learners go home for lunch • Learners carry lunch from home • Parents give children cash to buy food from nearby markets • Pupils share with others what they carried or some borrow food from nearby homesteads. • Pupils drink water

3.5. School meals and expected outcomes

90. This section presents the situation with respect to access to food and to school meals during the year of the study (2017) and in the week of the survey. It also reports on the situation with respect to key expected outcomes of school feeding, namely attendance, enrollment and community understanding.

91. It is important to note that the Baseline Survey was undertaken at a time when the drought was severe in the target counties. At the same time, WFP had a complete pipeline break in term one of 2017. No funding was availed for any school meals in the arid counties. While there was no direct school feeding from WFP during the survey period there was school feeding in some of the schools where this was not expected, mainly because there were interventions from Government and other actors to mitigate the effects of the drought. In addition, a small number of WFP schools were providing school feeding with carryovers from the previous phase of the SMP.

MGD 1.2.1.1/1.3.1.1.Increased Access to Food (School Feeding)

Summary of main findings

- Approximately half of the parents/guardians reported that their children had been receiving school meals at school *in the current school year* (2017). The proportions were consistent among boys and girls.

- The proportion of parents/guardians who reported that the child has been receiving school meals (at school) in the current school year (2017), was significantly higher in WFPSMP (59.3%) than in Control (20.0%). The proportion was also significantly higher in HGSMP (80.4%) than in WFPSMP (55.6%). The results were consistent for boys and girls.

- Two out of five of the parents/guardians reported that the school where the child was learning was serving food *during the survey week*. WFPSMP (51.7%) schools were more likely to be serving food in the survey week than control schools (16.3%), and HGSMP schools were more likely (51.5% than WFPSMP schools (43.9%) to be serving food, as reported by parents/guardians. The results were consistent for boys and girls.

Indicator 8: Percent of students in target schools who regularly consume a meal

92. This section of the survey examined regularity of school meal consumption during the school year, and during the week of the survey.

School meals situation in the current school year (2017)

93. Approximately half of the parents/guardians (53.7%) responded that their children have been receiving school meals at school in the current school year (2017). As might be expected, the proportions were consistent among boys (53.4%) and girls (54.0%).

94. The analysis of differences across the three arms show that the proportion of parents/guardians who indicated that the child has been receiving school meals (at

school) in the current school year (2017), was significantly higher in WFPSMP (59.3%) than in the Control schools (20.0%) (p<0.001) (Figure 32).

Figure 32 - Percentage of parents/guardians indicating that their child had received school meals in the current school year (2017), comparing Control and WFPSMP schools, by gender
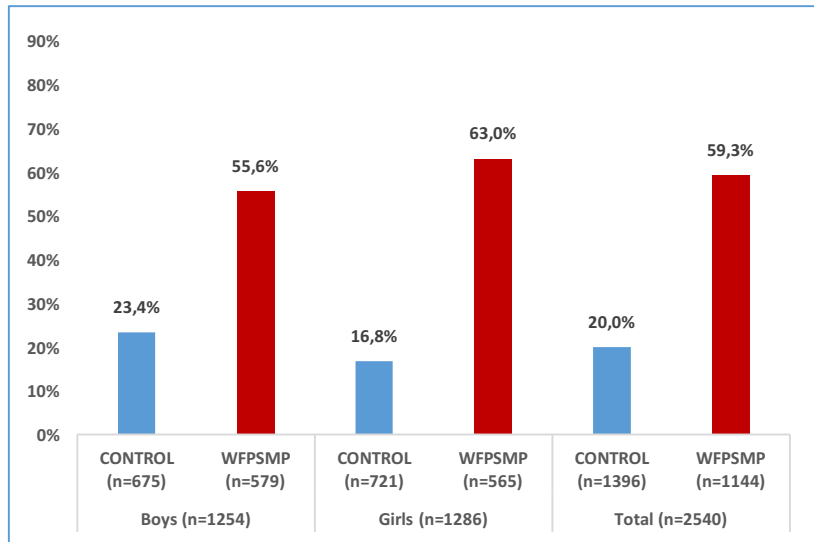
95. The proportion was also significantly higher in HGSMP (80.4%) than in WFPSMP (55.6%); (p<0.001) (Figure 33). The patterns were consistent among boys and girls.

Figure 33 - Percentage of parents/guardians indicating that their child had received school meals in the current school year (2017), comparing WFPSMP and HGSMP schools, by gender
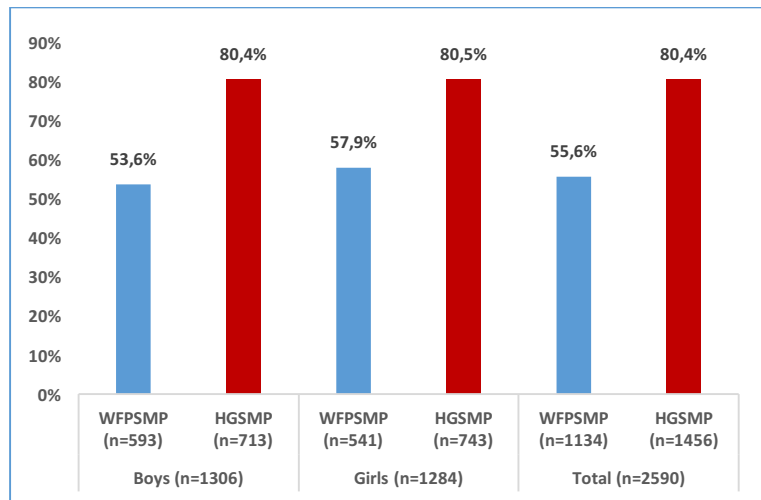
School meals situation in the current week

96. More than one-third of the parents/guardians (40.6%) reported that the school where the child was learning was serving food during the survey week. The proportions were found to be consistent for boys (39.8%) and girls (41.5%) (figure 34).

Figure 34 - Percentage of parents/guardians indicating that their child had received school meals in the week of the survey, comparing Control and WFPSMP schools, by gender
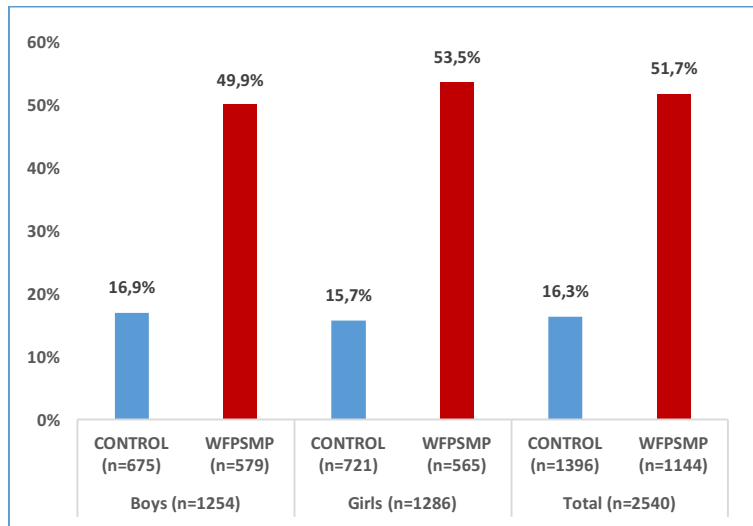
97. The proportion of parents/guardians that reported that the school where the child was learning was serving food during the survey week, was significantly higher in WFPSMP (51.7%) than in Control (16.3%); (p<0.001). Comparing the HGSMP with WFPSMP it was found that the proportion of children having food during the week of the survey was significantly higher in HGSMP (51.5%) than in WFPSMP (43.9%) (Figure 35); (p<0.001). The patterns were consistent among boys and girls.

98. Qualitative data provided further insights into the importance of school meals from the perspective of the family and community. These are highlighted in Box 3 below.

Box 3 - PTA, BoM and pupil responses across the three target arms of the study on the importance of school meals for families and communities

School meals are important in:

- Supplementing food at home
- Reducing the burden of carrying food from home
- Curbing hunger because some pupils do not get food at home and so depend on only one meal they get in school
- Relieving the burden of providing three meals on parents

Indicator 9: Total amount of commodities that have been provided as a part of USDA-funded intervention.

99. No activities, USDA-WFP interventions, had been planned prior to the time of the baseline. This indicator is therefore zero at baseline.

MGD 1.3 Improved Student Attendance

Summary of main findings
- There was no significant difference between the average number of students regularly attending WFPSMP schools compared to control schools
- However, there was a significant difference between the average numbers of students regularly attending HGSMP schools compared to WFPSMP schools, with this number being higher in the HGSMP schools.

Indicator 10: Number of students regularly (80%) attending USDA supported classrooms/schools

100.   The average number of students regularly attending[22] was not significantly higher in control schools (232 total, of which 128 boys and 104 girls) than WFPSMP schools (184 total of which 102 boys and 83 girls); (p=0.157) (Figure 36).

Figure 36 - Comparison of the average number of students attending school 80% of the time in Control and WFPSMP schools, by gender
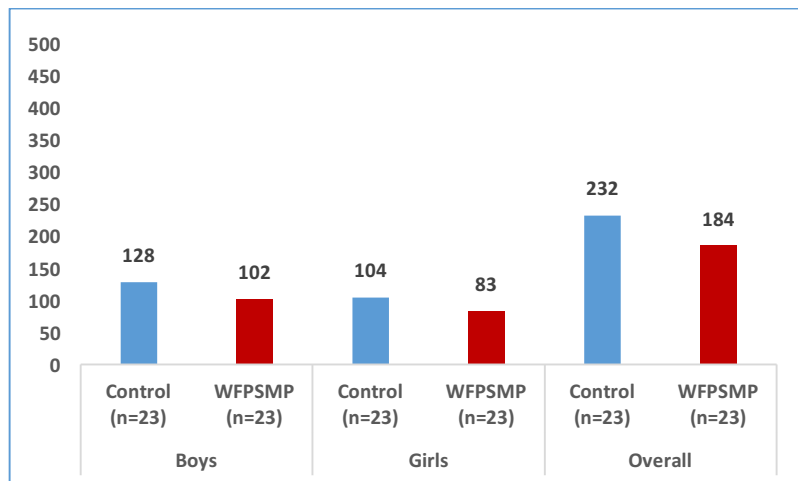
101.   The average number of students regularly attending (327 total, of which 185 boys and 142 girls) was significantly higher in HGSMP schools than WFPSMP schools (191 total, of which 107 boys and 83 girls); (p=0.024) (Figure 37).

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[22] Regular attendance was defined as attending school $\geq$80% of the time.

Figure 37 - Comparison of the average number of students attending school 80% of the time in WFPSMP and HGSMP schools, by gender
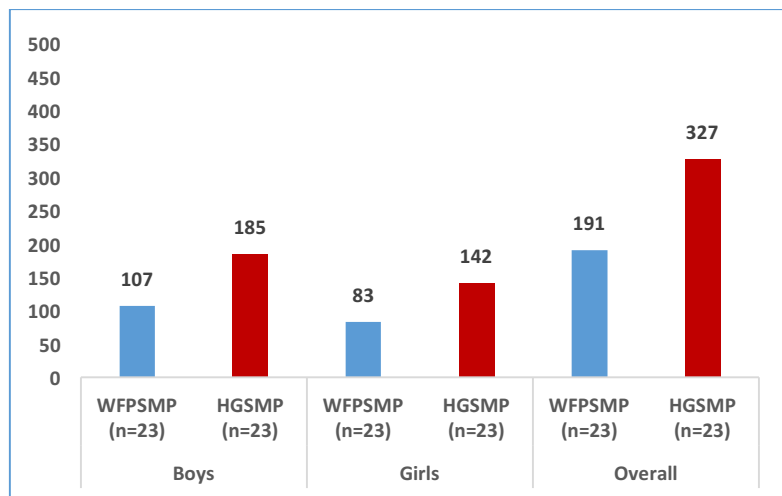
MGD 1.3.4 Increased Student Enrolment

Summary of main findings
- There was no statistically significant difference in average enrolment in the comparison between control schools and WFPSMP schools.
- Similarly, there was no statistically significant difference in average enrolment between WFPSMP and HGSMP schools.

Indicator 11: Number of students enrolled in schools receiving USDA assistance

102. Average enrolment in control schools (375 total, of which 207 boys and 168 girls) was not significantly higher than WFPSMP schools (280 total, of which 155 boys and 125 girls); (p=0.076) (Figure 38).

Figure 38 - Average number of boys, girls, and overall students enrolled in control and WFPSMP schools
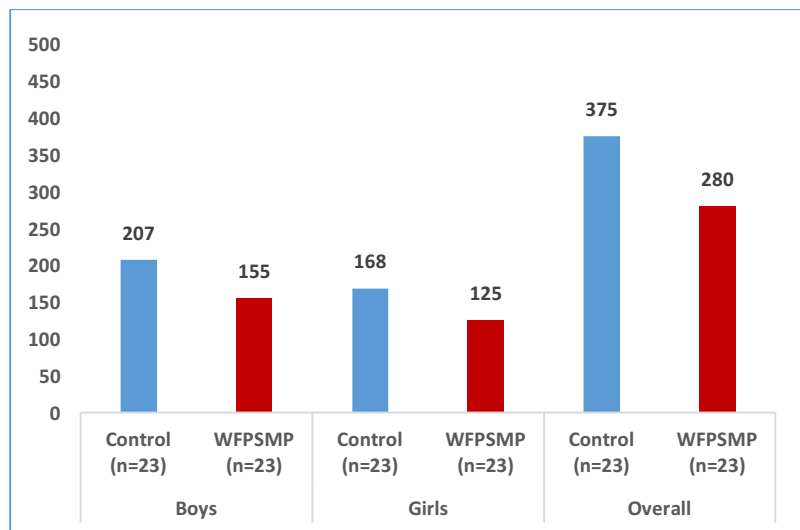
103. Average enrolment in HGSMP schools (430 total, of which 243 boys and 186 girls) was not significantly higher than WFPSMP schools (290 total of which 163 boys and 127 girls); (p=0.095) (Figure 39).

Figure 39 - Average number of boys, girls, and overall students enrolled in WFPSMP and HGSMP schools
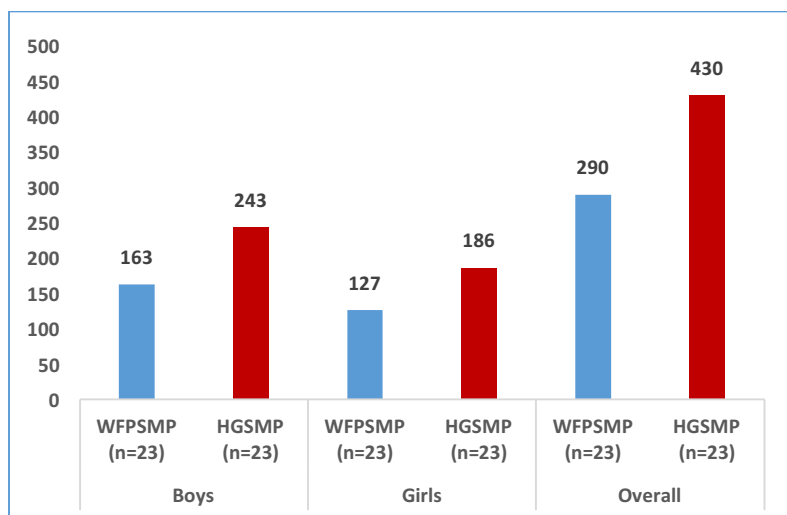
MGD 1.3.5 Increased Community Understanding of the Benefits of Education

Summary of main findings
- Two out of five parents/guardians in target communities could name at least three benefits of primary education, with a significantly higher proportion of male parents/guardians (47.2%) able to list three benefits than female (39.8%).
- Parents/guardians in WFPSMP schools were generally more able to name benefits of primary education when compared to control and HGSMP schools.
- Specifically, the proportion of parents/guardians in target communities who could name at least three benefits of primary education, was significantly higher in WFPSMP arm (57.2%) than in control (26.1%). Similarly, the proportion of parents/guardians in target communities who could name at least three benefits of primary education, was significantly higher in WFPSMP (57.3%) than in HGSMP (30.0%).

Indicator 12: Percent of parents in target communities who can name at least three benefits of primary education

104. The parent tool was responded to by 28.2% male and 71.8% female parents. This section examines the findings on the benefits of primary education.

105. The most commonly mentioned benefits of education by the parents/guardians related to the benefit of education in improving literacy (67.5%); increasing the chance of the pupil's future economic self-reliance (64.6%); and that education helps break the cycle of poverty (47.5%) (Figure 40).

Figure 40 - Distribution of parental/guardian responses on the benefits of education (n=5130)
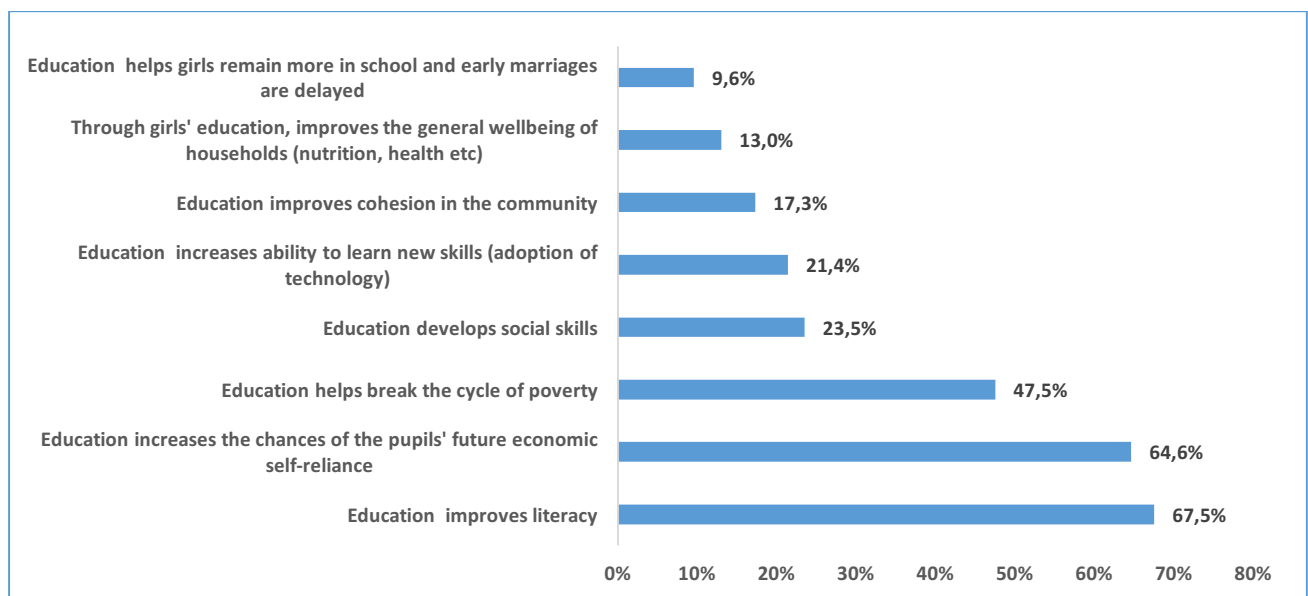
106. The results show that 41.9% of parents/guardians could name at least three benefits of primary education, with a significantly higher proportion of male parents/guardians (47.2%) than female (39.8%); (p<0.001) (Figure 41).

Figure 41 – Parents/guardians in target communities who could name at least three benefits of primary education, by gender
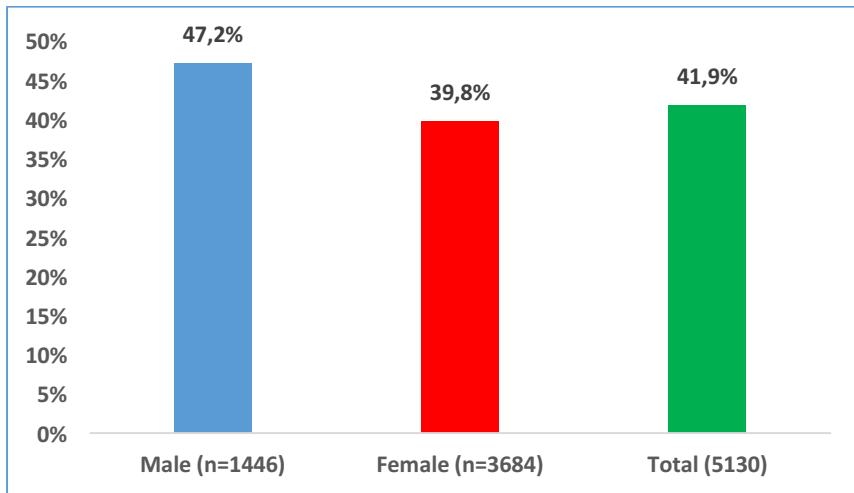
107. The results of the analysis from adjusting for differences across the three arms show that the proportion of parents/guardians in target communities who could name at least three benefits of primary education, was significantly higher in WFPSMP (57.2%) than in control (26.1%); (p<0.001).

Figure 42 - Percentage of parents/guardians in control and WFPSMP schools who can name at least three benefits of primary education
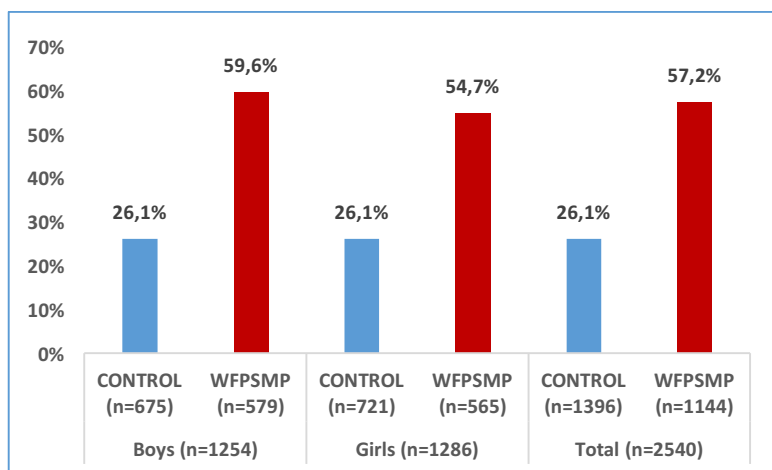
108. A similar pattern was evident between WFPSMP and HGSMP where the proportion of parents/guardians in target communities who could name at least three benefits of primary education, was significantly higher in WFPSMP (57.3%) than in

HGSMP (30.0%); (p<0.001) (Figure 42 and 43). The pattern was in both cases consistent among boys and girls.

Figure 43 - Percentage of parents/guardians in WFPSMP and HGSMP schools who can name at least three benefits of primary education

Figure 39) Parents/guardians in target communities who can name at least three benefits of primary education
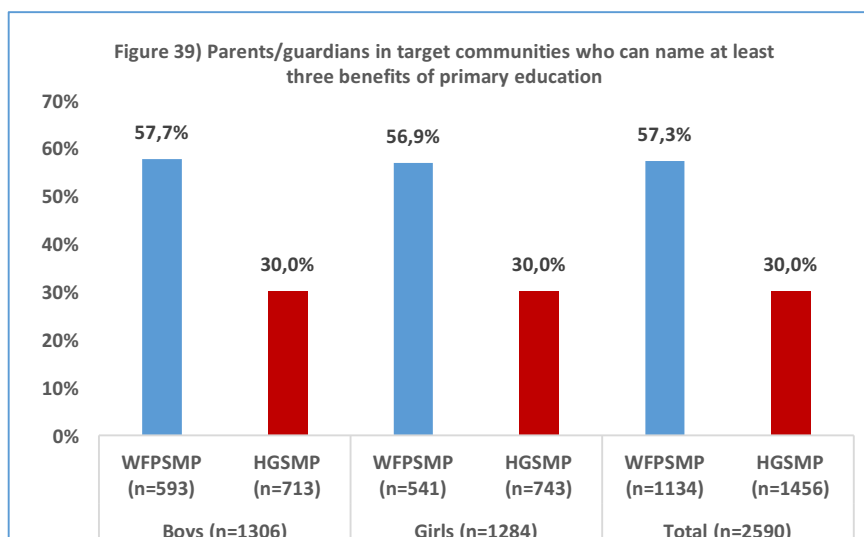
109. The following responses from FGDs indicate how parents came to know about the benefits of education across the three arms:

Box 4 - PTA, BoM and pupil responses across the target arms of the study on how parents come to know about the benefits of education

Ways in which parents are informed about the benefits of education:

- Through organized public "barazas"/meetings
- Through government sensitization of community members
- Through having parents' meeting at school
- Through role modelling and motivational initiatives
- Through guidance and counselling both parents and pupils

3.6.   Increased Capacity

Summary of main findings
- The overall view from key informant interviews was that the policy and institutional environment has improved in the period preceding this baseline.
- In terms of the baseline:
  o The absence of a national steering committee or equivalent that brings together the key stakeholders reduces the effectiveness of coordination at national level. In general, there is insufficient participation by other

110. WFP, with the support of USDA and others, will through this intervention seek to strengthen national capacity to improve the performance of the HGSFP and the WFPSMP and to ensure adequate transitioning of the schools that are still managed by WFP to the Government within the agreed time-frame.

111. This section examines the situation with respect to capacity, government support and regulatory framework at the time of the baseline, as drawn from documentary review, key informant interviews and school and county visits during the baseline data collection phase.

MGD 1.4.1 Increased Capacity of Government Institutions

Indicator 13: Number of county-level inter-ministerial committees for HGSMP established

112. Effective implementation of the school meals programmes at decentralized levels requires strong inter-ministerial coordination at the county level.

113. At baseline, there were no county level inter-ministerial committees in place for the control and the WFPSMP schools.

114. The key informant interviews, as well as the school visits, established several key limitations:

- At present the departments of health and agriculture are not fully involved in all the county level coordination, with some exceptions. This is essential to ensure complementary activities and approaches in nutrition and key areas such as agricultural production and marketing.

- Challenges arise from the different levels at which school feeding is managed. The pre-primary level (ECDE) has been decentralized to the counties while the primary

education level remains the responsibility of MOE. Coordination between these two levels presents challenges, with each claiming and focusing on what is their jurisdiction without due attention to the bigger picture.

- Most key informant interviews expressed the view that decentralizing school feeding for primary to county level would improve school feeding management across the different levels of education. In the absence of such decentralization it was felt that improved co-ordination between the MOE national level school feeding structures (MOE and national level committees) and the county level would help streamline management and increase the level of ownership of school feeding. This was felt to be insufficient in evidence at the baseline.

Indicator 14: Number of national-level inter-ministerial coordination committees for HGSMP established

115.   Effective implementation of the schools meals programmes also presumes strong and broad-based multi-sectoral coordination.

116.   A schematic overview of the national coordination mechanisms for school feeding in the country is provided in Annex 3. The annex also outlines the responsibilities for the implementation of the school meals initiatives across ministries and non–governmental stakeholders. At present, there is no national level inter-ministerial coordination committee. The baseline for this indicator is therefore zero (the target is one).

117.   Stakeholder analysis informed by documentary research and key informant interviews (see Annex 4 for list of persons interviewed) identified and confirmed the critical roles played by government ministries, development partners, other government entities and departments and civil society organizations in the implementation of school meals programmes in Kenya. In particular, the MOE, the Ministry of Agriculture and the Ministry of Health stand out in their respective roles and responsibilities in designing and implementing the school meals programmes.

118.   However, qualitative data from KIIs indicated that the participation of other ministries in school feeding coordination continues to be ad-hoc and participation and commitment is not always ensured. The process continues to be mostly driven by the education sector and the envisioned multi-sectoral ownership has been lacking, although there have been some improvements. A challenge has been frequent changes in leadership and senior positions in the MOE. The MOE acknowledges, and confirms the important roles played by the development partners and civil society organizations, with roles that range from resource/funding provision (USDA/MGD, GAC etc.) to implementing partners (WFP, Deworm the World, PCD etc.). However, inadequate multi-sectoral commitment to school feeding is evident, with the programme being mostly run by the MOE, although nutrition has been participating well.

119.   At baseline, there continues to be a need for much stronger multi-sectoral approach, as evidenced by:

- The absence of a national steering committee or equivalent that brings together

the key stakeholders and provides a stronger anchoring and coordination role at national level.

- The need for increased integration of the program with the national social protection programming.
- The need for increased integration of SMP with agricultural production and marketing programs.

MGD 1.4.2/2.7.2 Improved Policy and Regulatory Framework

Indicator 15: Number of educational policies, regulations, and/or administrative procedures in each of the following stages of development because of USDA assistance (Stage 5)

Indicator 16: Number of child health and nutrition policies, regulations, and/or administrative procedures in each of the following stages of development because of USDA assistance (Stage 5)

120. As indicators 15 and 16 are closely linked, the baseline findings are discussed together.

121. At the time of the baseline the following overall policy documents were in place.

- The **Vision 2030** which highlights the importance of agriculture and the need for improved market access for small-scale farmers. This document is in place and is a key guideline for government and other stakeholder interventions.
- The **Agriculture Sector Development Strategy** (2010) – focusing (among other priorities) on food and nutrition security for all Kenyans and increased employment and incomes in rural areas.
- The **National Social Protection Policy** (2011) – in which school meals are one of the approaches to ensuring social protection.
- The **National School Health Policy** (2009).
- **National School Health Guidelines** (2009) – which emphasize that school meal programmes should have three components: balanced meals for children in all schools; encourage children in day schools to carry nutritious snacks and lunch; and supplementary feeding for children from the most underserved, food insecure regions, etc.
- **Food and Nutrition Security Policy** (2011) – stresses that school meal programmes decrease short-term hunger, help pupils to concentrate and learn, encourage parents to enrol their children; and can provide iodine and iron and other micronutrients.
- **Home Grown School Meals Programme** -Technical Development Plan (2012).
- **National School Health, Nutrition and Meals Programme Strategy** (Draft Version 2016) which outlines the specific strategy for implementing school feeding in Kenya and which has received support from WFP. The Strategy

focusses on bringing together the broader policy into a more concrete strategy of government vision. It is based on a multi-sectoral commitment, coordination and ownership.

122. It should be noted that these documents were not developed as a result of the USDA assistance under this project, and that therefore strictly speaking the baseline for indicator 15 is zero.

123. The predominant view expressed in national level interviews was that there has been a lot of work done to improve the policy environment. There was also much appreciation of the GOK commitment to implementing: *"Kenya has done a great job on the HGSMP, and it has taken up responsibilities"* (source: interview).

124. A gap at the time of the baseline is that the key **National School Health, Nutrition and Meals Programme Strategy remained to be formally approved**. Key informant interviews specifically highlighted the importance of this document (which has been under preparation for a while), being approved. The expectation is that this would happened after the national election process in August 2017.

MGD 1.4.3/2.7.3 Increased Government Support

Indicator 17: Value of new public and private sector investments leveraged as a result of USDA assistance

125. At baseline the value of new public and private sector investments because of USDA assistance is zero given that work in this phase was yet to start.

126. However, to provide a benchmark against which progress can be measured the baseline examined the current public sector commitment (by the Government of Kenya) to school meals. This is by far the most substantial financial commitment to this initiative (see tables 10 and 11). Table 10 shows the trend in funding and coverage by the government led HGSMP, while table 11 shows the same by WFP. It is important to note the reducing budget commitment and coverage by WFP which reflects the transition from WFPSMP to HGSMP that has been going on since 2009. In addition, Annex 5 provides an overview of other school meals initiatives in the country including private initiatives, although it was beyond the focus of this study to quantify the financial investments in these interventions.

Table 10 - Government Funding of HGSMP since inception and the coverage in terms of Number of Pupils and Number of days the children were fed in a year

Year	Budget/Funding allocated (kshs)	Number of Pupils reached	Number of days children were fed in the year
2009	400 million	550,000	In most cases schools received 50% of the budget required and therefore were only able to feed the increasing number of children for two terms or even less.
2010	600 million	620,000	
2011	650 million	770,000	
2012	800 million	810,000	
2013	850 million	810,000	
2014	850 million	920,000	During this time, the MOE was only able to feed children for 77 (40% of the days) out of 190 days
2015	850 million	998,000	
2016	850 million	1.2 million	
2017	2.5 Billion	1.2 million	2017 -2018 likely to feed children for the three terms

Source: Information provided by MOE to the Baseline Team, July 2017.

Table 11 - WFP SMP Funding and Actual Beneficiaries reached (2009-2016)

Year	Budget/Funding allocated (USD)	Number of Pupils reached		
		Boys	Girls	Total
2009	27,816,522	493,518	368,730	862,248
2010	19,029,232	457,524	346,145	803,669
2011	18,290,159	483,631	380,470	864,101
2012	17,614,011	469,598	376,623	846,221
2013	9,515,965	425,435	341,673	767,108
2014	10,451,862	417,865	378,251	796,116
2015	9,782,097	451,871	333,582	785,453
2016	7,274,713	297,559	233,908	531,467

Source: WFP records

127.   It should be noted that in 2016 and 2017, the GoK allocated additional funds to school feeding from the Drought Response Fund. Funds have also been provisionally marked in the GoK budget for 2018 for this priority.

128.   Evidence reviewed at the baseline stage acknowledges the efforts made by the GoK in funding school feeding. However, concerns were voiced about:

• Limited resourcing by GoK - actual implementation is limited by resources and that there has not been a commensurate scale up of financial resources to match the growing number of pupils.

• Impact on the number of days of school feeding in schools that have transitioned to government ownership - thus, in 2016 school feeding was only provided 77 days

out of 190, compromising the quality of programme.[23]

- Challenges in budgeting and timeliness of the budget - allocations per year are not sufficient. There is as yet insufficient appreciation from treasury of the commitments the government has made in policy documents and of the corresponding budget that is needed. Thus, while the GoK has taken over the HGSMP and the number of children has been increasing per year, the funding amounts have remained the same, with exception (as noted above) of the funds that were received from the Drought Response Fund.

Indicator 18: Number of public-private partnerships formed as a result of USDA assistance

129.   No USDA-WFP interventions had been implemented in this respect at the time of the baseline. This indicator will therefore be measured at mid- and end-line and is zero at baseline.

Indicator 19: Number of Parent-Teacher Associations (PTAs) or similar "school" governance structures supported as a result of USDA assistance

130.   No USDA-WFP interventions had been implemented in this respect at the time of the baseline. This indicator will therefore be measured at mid- and end-line and is zero at baseline.

3.7.   Food utilization and food safety

131.   This final section of the survey reports on issues related to hygiene and nutrition and provides the baseline with respect to the situation in the schools in terms of food preparation and storage.

MGD SO 2 Increased Use of Health and Dietary Practices

Summary of main findings
- The proportion of schools that store food off the ground in WFPSMP schools (56.5%) was significantly higher than control schools (17.4%).
- The proportion of schools that store food off the ground in HGSMP schools (52.2%) was not significantly high than WFPSMP schools (47.8%); (p=0.271).

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[23] These figures would suggest that the situation has become worse. The previous HGSMP review of 2012 had found that during the programme's first three years (2009-2012), school meals had actually only been provided on about 54 percent of school days.

Indicator 20: Percent of schools in target counties that store food off the ground [24]

132. The proportion of WFPSMP schools with a storage facility (82.6%) was significantly higher than of control schools (43.5%); (p=0.006). Contrary to what was expected some control school had a storage facility meaning that they prepare meals at the school.

133. The proportion of WFPSMP schools that store food off the ground (56.5%) was significantly higher than control schools (17.4%); (p=0.006) (Figure 44).

Figure 44 - Comparison between the percentage of control and WFPSMP schools that store food off the ground
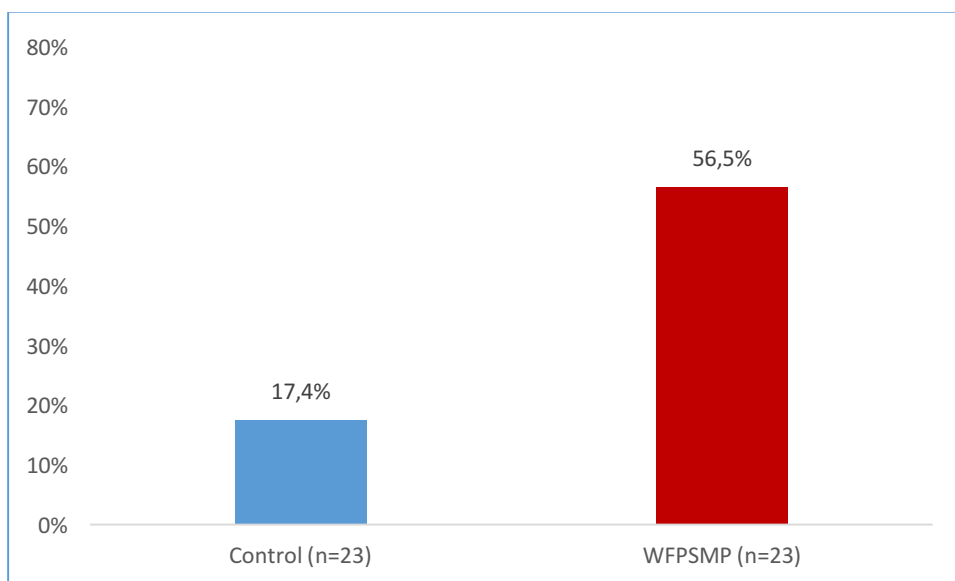
134. The proportion of WFPSMP schools with a storage facility (82.6%) was not significant higher than HGSMP schools (65.2%); (p=0.179).

135. The proportion of HGSMP schools that store food off the ground (52.2%) was not significantly higher than WFPSMP schools (47.8%); (p=0.768) (Figure 45).

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[24] The denominator is 23 schools (with or without food store) per arm. Please note that as the denominators are different for some variables a small percentage difference in one part of the analysis may be significant, while it may not be significant in other analyses where the denominator is much lower.

Figure 45 - Comparison between the percentage of WFPSMP schools and HGSMP school that store food off the ground
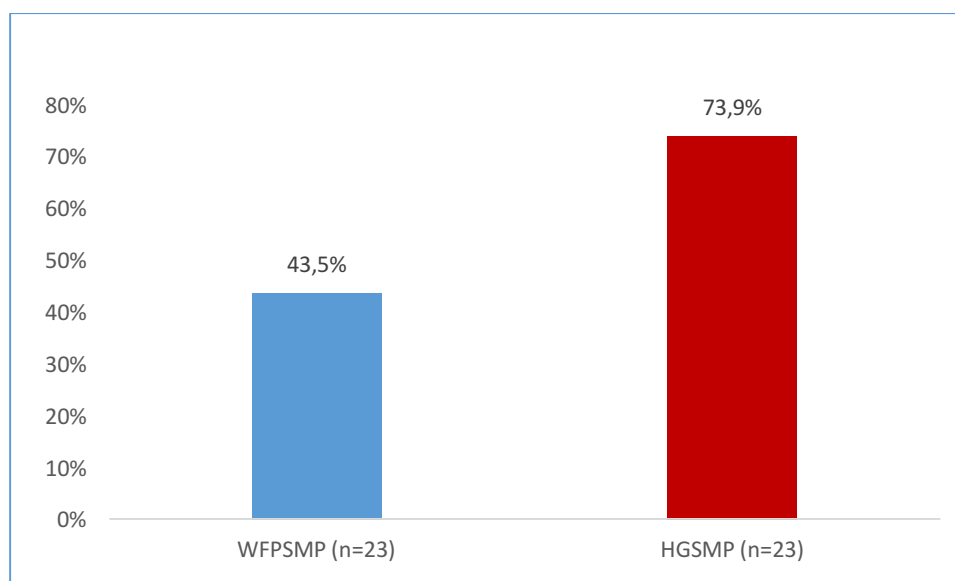
MGD 2.2 Increased Knowledge of Safe Food Prep and Storage Practices

Summary of main findings
- There was no significant difference in the percentage of food preparers at WFPSMP schools who achieve a passing score on a test of safe food preparation in (43.5%), when compared to control schools (39.1%).
- There was significantly higher percentage of food preparers at HGSMP schools who achieve a passing score on a test of safe food preparation and storage (73.9%) than those in WFPSMP schools (43.5%).

Indicator 21: Percent of food preparers at target schools who achieve a passing score on a test of safe food preparation and storage

136.   The percentage of food preparers at schools who achieve a passing score[25] on a test of safe food preparation and storage in WFPSMP schools (43.5%) was not significantly higher than in the control schools (39.1%); (p=0.765) (Figure 46).

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[25] The passing score was computed using the following variable;
Q1 - Have you been trained in safe food preparation?
Q2 - Have you been trained in food storage and handling?
Q3 - Do you have a valid health certificate?
Q4 - Do you have a uniform or apron to use in the kitchen?
Q5 - When do you clean the kitchen?
Q6 - When do you usually wash your hands for food preparation?
Q7 - How do you ensure the food is clean before cooking?

Figure 46 - Percent of food preparers at control and WFPSMP schools who achieve a passing score on a test of safe food preparation and storage
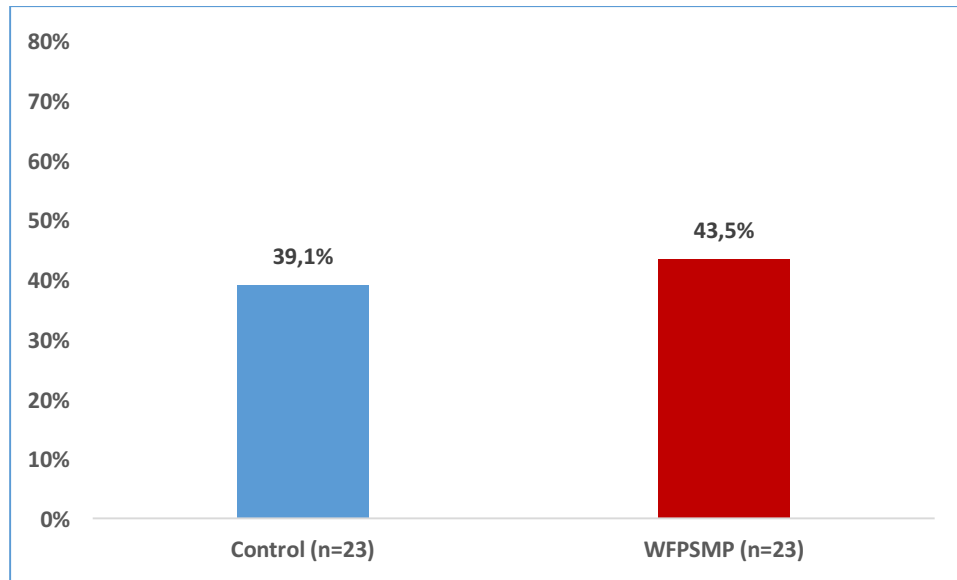
137. The percentage of food preparers at schools who achieved a passing score on a test of safe food preparation and storage in HGSMP schools (73.9%) was significantly higher than in the WFPSMP schools (43.5%); (p=0.036) (Figure 47).

Q8 - How do you verify that food is in good condition before cooking?
Q9 - How do you store food prior to serving it?
It was computed as follows: Q1 (Yes=1) + Q2 (Yes=1) + Q3 (Yes=1) + Q4 (Yes=1) + Q5 (Every morning before food preparation=1) + Q6 (Before handling food=1) + Q7 (Use clean containers to collect food from store, remove foreign matters and then wash with clean water thoroughly before cooking=1) + Q8 (Look at Expiry date =1)+ Q9 (Store cooked food in covered cooking pots in a clean, safe place before serving the pupils=1). A % score was calculated using the attained score divided by 9 [attained score/9]. Those who score 50% and above are considered to achieve a passing score.
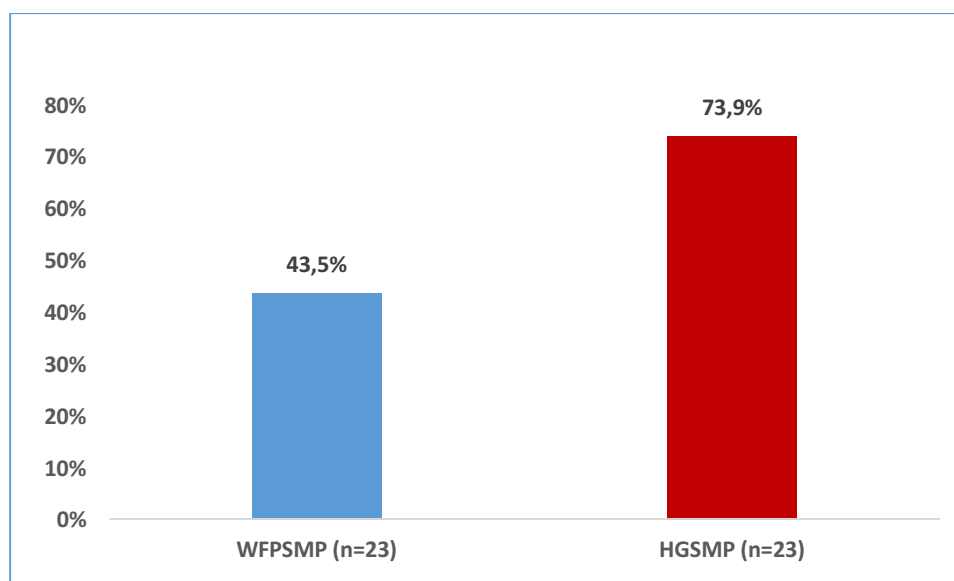
MGD 2.3 Increased Knowledge of Nutrition

Summary of main findings

- The proportion of children who mentioned at least three hygiene habits was significantly higher in WFPSMP schools (51.0%) when compared to the control group (19.8%).
- Similarly, the proportion of children who mentioned at least three hygiene habits was significantly higher in WFPSMP schools (50.4%) than in HGSMP schools (20.7%).

Indicator 22: Number of schools benefitting from nutrition and hygiene education

Hygiene

138.   The most important hygiene habits mentioned by children included: general body hygiene/cleanliness (72.4%), hand washing (70.4%), safe drinking water (27.7%) and sanitation (25.0%) (Figure 48).

Figure 48 – Frequency and importance of different hygiene habits mentioned by children in response to the survey
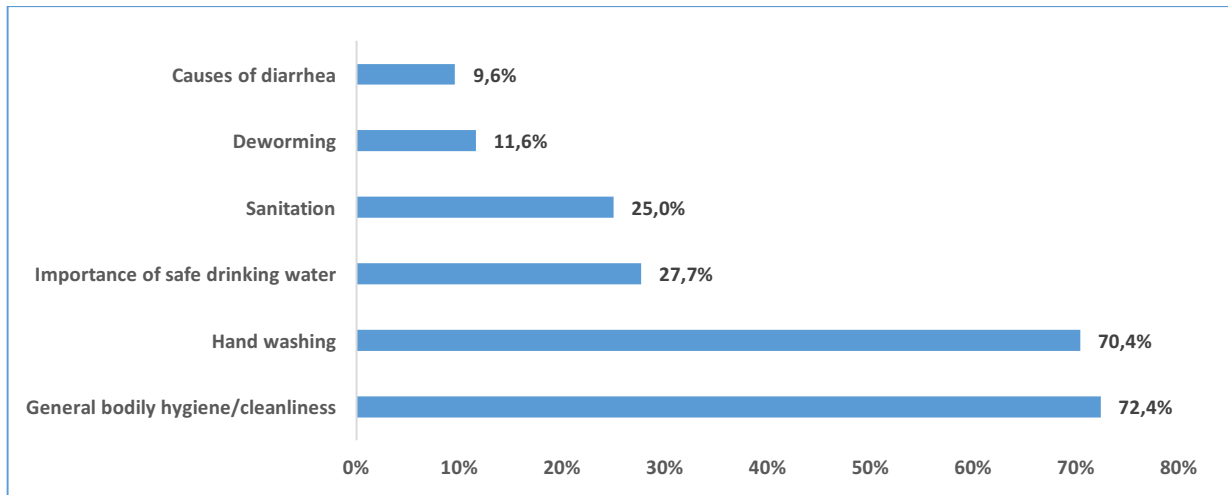
139. The number of most important hygiene habits mentioned by the children varied significantly between study arms. However, the proportion of those that did not mention any habit was not significantly different between control (9.2%) and WFPSMP (8.2%); (p=0.375) (Figure 49).

Figure 49 - Proportion of children who responded to the survey who mentioned three most important hygiene methods, by research arm (Control and WFPSMP)
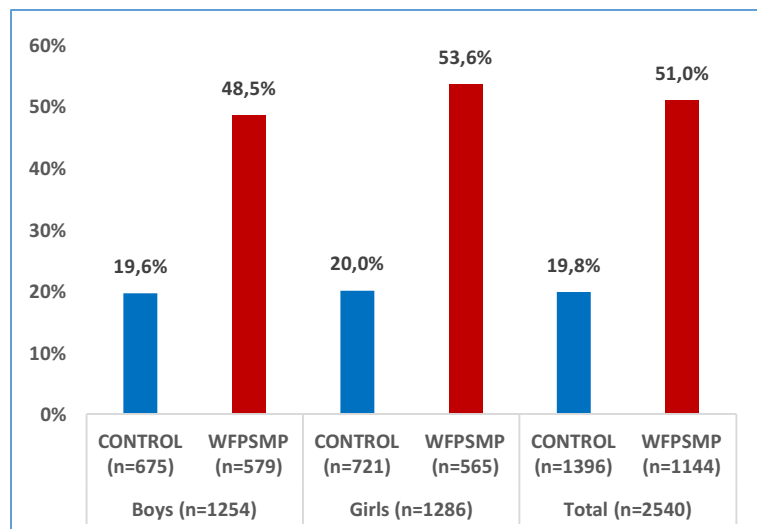
140. Differences were also not significant between the HGSMP (7.4%) and WFPSMP (6.9%); (p=0.625) (Figure 50). The proportions were consistent across the genders.

Figure 50 - Proportion of children who responded to the survey who mentioned three most important hygiene methods by research arm (WFPSMP and HGSMP)

Figure 46) Proportion of children who mentioned three most important hygiene habits
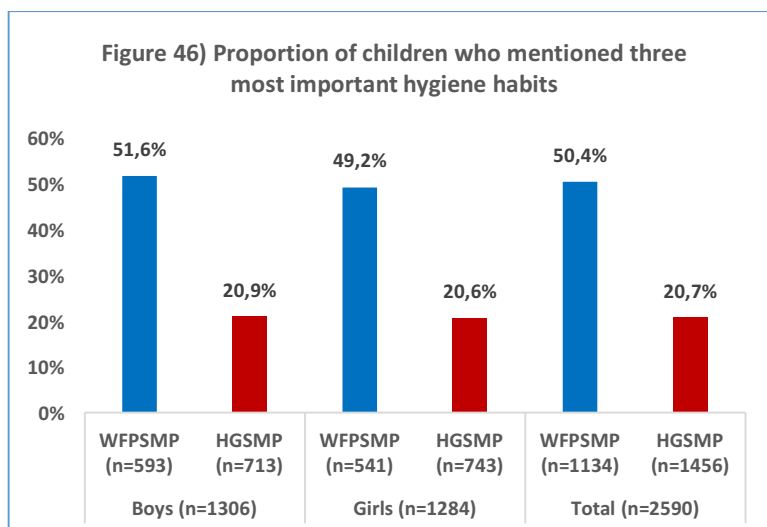
141.   Data from the qualitative study on hygiene practices in schools provided a series of responses that underlined a strong rationale for hygiene in schools and resulted in suggestions as to how it could be improved further as shown below.

Box 5 - Responses through the qualitative interviews as to the perceived importance of hygiene and suggestions on how to strengthen this component of the intervention

Encouraging handwashing before eating and after visiting the toilet, observation of general body cleanliness, maintaining cleanliness in the school compound and teaching pupils the importance of hygiene in science lessons and while on parade were considered as some of the key ways of enhancing good hygiene practices in schools (from FGD).

Respondents suggested that such hygiene practices are important to promote good health among learners, prevent diseases, build the body; enhance concentration in class which improves performance; prevent absenteeism thus increasing school attendance; and enhance pupils' confidence.

Suggestions for improving hygiene practices in schools included:
- Strengthening the provision of water for drinking and handwashing
- Conducting education and capacity building through the creation of hygiene clubs
- Having hygiene campaigns in schools and communities
- Training teachers on hygiene camp
- Ensuring regular deworming of learners and encouraging proper sanitation practices.

Nutrition

142. Results from this study show that the most important nutrition habits mentioned by children include; balanced diet (42.7%) and food type (39.8%) (Figure 51). However, the responses varied between study groups.

Figure 51 - Frequency by which children mentioned different types of nutritional habits
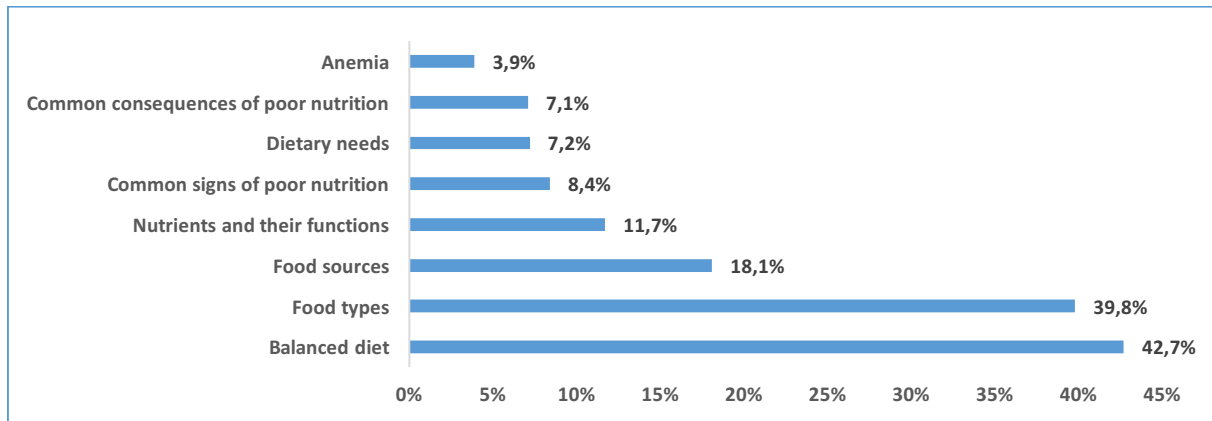
Over two-thirds of the respondents in WFPSMP group (72.3%) mentioned at least one important nutritional habit, compared to 61.7% of their counterparts in control (p<0.001) (data not shown). On the other hand, close to two-thirds of the respondents in HGSMP group (63.3%) mentioned at least one important nutritional habit/practice compared to 78.6% of their counterparts in WFPSMP (p<0.001) (Figure 51). The pattern was consistent among the genders in both cases (data now shown).

Figure 52 and 53 below shows the percentage of children in different study arms who were able to mention three or more important nutritional habits.

Figure 52 – Proportion of children from Control and WFPSP schools who mentioned three most important nutrition efforts
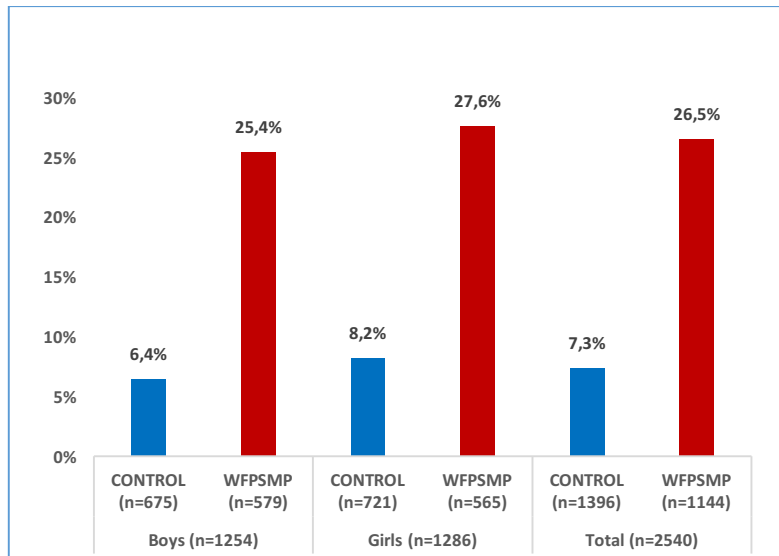
Figure 53 - Proportion of children from WFPSP and HGSMP schools who mentioned three most important nutrition efforts
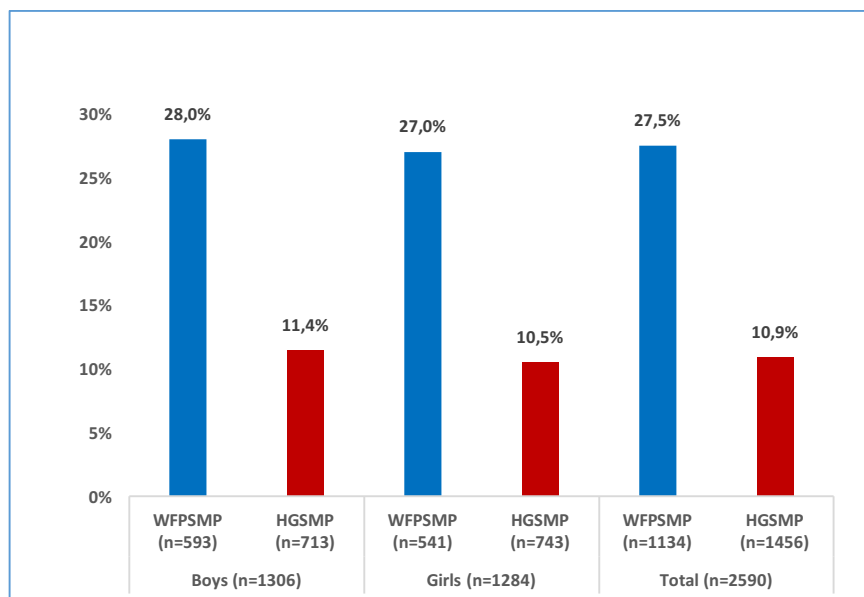
143. Qualitative data responses from parents and pupils indicated the importance of nutrition and how this could be improved. These responses are shown below.

Box 6 - PTA, BoM and pupil responses across the three target arms of the study on the importance of nutrition and how it could be improved going forward

On importance of nutrition, both sets of respondents indicated that good nutrition:
- promotes good learning processes
- boost self-esteem and confidence
- reduces sickness
- reduces absenteeism
- promotes concentration
- promotes good health
- motivates learning
- keeps learner's active
- Enables retention of learners in school
- Ensures pupils perform better

On how nutritional habits practices could be improved, the following were noted as key:

- Ensuring the child has three meals (including those in school and at home)
- Providing enough food
- Providing variety of foods and building proper kitchens and food stores.

Indicator 23: Number of individuals trained in child health and nutrition as a result of USDA assistance

144. No activities, USDA-WFP interventions, had been planned prior to the time of the baseline. This indicator will therefore be measured at mid- and end-line and is zero at baseline.

MGD 2.6 Increased Access to Requisite Food Prep and Storage Tools

Summary of main findings

- The baseline for schools with improved food preparation and storage facilities and for the number of meals provided under the USDA programme is zero.

Indicator 24: Number of target schools with increased access to improved food preparation and storage equipment (kitchens, storerooms, stoves, kitchen utensils)

145. No activities, USDA-WFP interventions, had been planned prior to the time of the baseline. This indicator will therefore be measured at mid- and end-line and is

zero at baseline. However, 34.1% (WFP SMP schools), 26.1% (control schools) and 52.3% (HGSPM) schools had access to fuel efficient stoves as shown in Table 12.

Table 12 - Food preparation conditions in the three arms of the study

Food preparation	Control (n=23)		p value	WFP SMP (n=44)		HGSMP (n=23)		p value
	n	%		n	%	n	%	
Sufficient kitchen for preparing pupils food	9	39.1%	0.428	13	29.5%	14	60.9%	**0.013**
Kitchen have fuel efficient stoves in sufficient quantity?	6	26.1%	0.502	15	34.1%	12	52.2%	0.152
Enough utensils	0	0.0%		20	45.5%	7	30.4%	0.234

146.   Table 13 shows the distribution of storage properties among the different study arms. There was a significantly high number of WFP schools with better storage conditions compared to control schools. However, there was no significant difference in number of schools with improved better storage conditions between WFPSMP and HGSMP schools.

Table 13 - Storage conditions in the three arms of the study

Storage properties	Control (n=23)		p value	WFP SMP (n=44)		HGSMP (n=23)		p value
	n	%		n	%	n	%	
Storage locked	7	30.4%	**<0.001**	37	84.1%	15	65.2%	0.078
Storage ventilated	6	26.1%	**0.001**	30	68.2%	15	65.2%	0.806
Humidity free storage	7	30.4%	**<0.001**	33	75.0%	13	56.5%	0.123
Store have pallets	4	17.4%	**0.003**	24	54.5%	12	52.2%	0.853
Store have weighing scale	1	4.3%	**0.016**	13	29.5%	7	30.4%	0.940

Indicator 25: Number of school-aged children receiving daily school meals (breakfast, snack, lunch) as a result of USDA assistance

147.   No activities, USDA-WFP interventions, had been planned prior to the time of the baseline. This indicator will therefore be measured at mid- and end-line and is zero at baseline.

4. Associated Factors

148. Factors associated with the highest level of English and Kiswahili literacy (story) as well as highest numeracy for a class 2 work among school going children in class 3 to 8 were established.

149. The analysis of associated factors forms part of the key findings that could inform programming work and should enable WFP and its partners to further design and/or improve already existing intervention strategies.

Summary of main findings

Key factors associated with the highest level of English and Kiswahili literacy (story); as well as highest numeracy for a class 2 work among school going children in class 3 to 8 include:

- Class of the child
- Mode of travel to school
- Number of times child normally eat per day
- Child had a meal today before going to school
- Child thought it is important to go to school
- Child having brothers and sisters who currently study in this school
- Child having brothers and sisters who are old enough to go to school but are NOT currently attending school
- Education level of the parent/guardian
- Number of important nutrition habits mentioned by the parent/guardian
- Number of hygiene habits mentioned by the parent/guardian
- Household Coping Strategy Index

4.1. Factors associated with the highest level of English literacy (story) for a class 2 work among school going children in class 3 to 8.

150. Analysis of factors associated with the highest level of English literacy (story) for a class 2 work among school going children in class 3 to 8 was done as presented in Annex 2. The analysis is based on binary logistic model, with a single dependent variable (dichotomous) against multiple independent variable.

151. The objective is to determine association/ relationship. The approach does not test or prove causal relationship and the results should thus be interpreted with some

caution. In summary, this analysis finds that:

- The highest level of English literacy was significantly associated with higher grades (ranging from 31.2% in class 4 to 87.4% in class 8) compared to class 3 (17.9%).

- Highest level of English literacy was significantly higher in children provided with transport (76.4%) compared to those walking to school (52.1%).

- Providing a child with a meal three times or more per day was significantly associated with highest English literacy performance (60.5%) compared to two times or less (47.5%).

- Providing a child with a meal before going to school was significantly associated with improved highest English literacy performance (55.0%) compared to lack of meal before going to school (47.0%).

- Understanding that it was important to go to school was significantly associated with improved highest English literacy performance (53.0%) compared to not appreciating (26.5%).

- Not having brothers and/or sisters in the same school was significantly associated with improved highest English literacy performance (57.0%) compared to having them (50.6%).

- Similarly, not having brothers and sisters who are old enough to go to school but are not currently attending school was significantly associated with improved highest English literacy performance (54.2%) compared to having them (41.0%).

- Improved performance on highest English literacy was significantly associated with parent/guardian higher levels of education (ranging from 51.5% among those who did not complete primary school to 70.5% among those who reached Technical college/ university) compared to those with no formal education (43.1%).

- A significantly high proportion of children whose parents/guardians mentioned at least one important nutrition habits, achieved highest level of English literacy (58.1%) compared to those whose parents could not mention any (40.7%).

- Similarly, a significantly high proportion of children whose parents mentioned 1 to 2, or 3 and above important hygiene habits achieved highest level of English literacy (52.2% and 57.3%) compared to those whose parents could not mention any (34.8%).

4.2. Factors associated with the highest level of Kiswahili literacy (story) for a class 2 work among school going children in class 3 to 8

152.   Analysis of factors associated with the highest level of Kiswahili literacy (story) for a class 2 work among school going children in class 3 to 8 was done as presented in Annex 2. In summary, this analysis shows that:

- The highest level of Kiswahili literacy was significantly associated with higher grades (ranging from 44.7% in class 4 to 90.0% in class 8) compared to class 3 (25.9%).

- Children provided with transport (79.2%) had highest level of Kiswahili literacy compared to those walking to school (62.0%).

- Providing a child with a meal three time or more per day was significantly associated with improved highest Kiswahili literacy performance (69.2%) compared to two times or less (57.9%).

- Providing a child with a meal before going to school was significantly associated with improved highest Kiswahili literacy performance (63.6%) compared to lack of meal before going to school (59.9%).

- Not having brothers and sisters who are old enough to go to school but are not currently attending school was significantly associated with improved highest Kiswahili literacy performance (64.0%) compared to having them (50.7%).

- Improved performance on highest Kiswahili literacy was significantly associated with parent/guardian higher levels of education (ranging from 64.7% among those who did not complete primary school to 78.9% among those who reached technical college/university) compared to those with no formal education (52.4%).

- A significantly high proportion of children whose parents mentioned 1 to 2, or 3 and above important hygiene habits achieved highest level of Kiswahili literacy (63.1% and 64.4%) compared to those whose parents could not mention any (48.2%).

- The highest level of Kiswahili literacy was significantly associated with lower Coping Strategy Index (CSI) quintiles (ranging from 57.0% in third quintile to 61.3% in first quintile) compared to the fifth quintile (46.1%).

4.3. Factors associated with the highest level of numeracy (division) for a class 2 work among school going children in class 3 to 8.

153. Analysis of factors associated with the highest level of numeracy (division) for a class 2 work among school going children in class 3 to 8 was done as presented in Annex 2. Key associations were as follows:

- The highest level of numeracy was significantly associated with high grades (ranging from 55.3% in class 4 to 93.3% in class 8) compared to class 3 (36.3%).

- Highest level of numeracy was significantly higher in children provided with transport (86.1%) compared to those walking to school (69.4%).

- Providing a child with a meal three time or more per day was significantly associated with improved highest numeracy performance (74.4%) compared to two times or less (66.7%).

- Understanding that it was important to go to school was significantly associated with improved highest numeracy performance (70.2%) compared to not appreciating (44.1%).

- Improved performance on highest numeracy was significantly associated with parent/guardian higher levels of education (ranging from 68.6% among those who

did not complete primary school to 82.4% among those who reached Technical college/ university) compared to those with no formal education (63.5%).

- A significantly high proportion of children whose parents/guardians mentioned three or more important benefits of education achieved highest level of numeracy (71.1%) compared to those whose parents could not mention two or less (67.7%).

- A significantly high proportion of children whose parents/guardians mentioned at least one important nutrition habits, achieved highest level of numeracy (74.2%) compared to those whose parents could not mention any (60.2%).

- Similarly, a significantly high proportion of children whose parents mentioned 1 to 2, or 3 and above important hygiene habits achieved highest level of numeracy (70.6% and 72.2%) compared to those whose parents could not mention any (52.8%).

5. Discussion and implications

154. This chapter reflects on the results of the baseline and brings out implications for improving existing intervention strategies or designing new ones. It also seeks to inform the mid-line and end line evaluations of the intervention. The discussion is structured as follows: i) learning outcomes; ii) adjusting for other on-going interventions; iii) short term hunger; iv) school meals and expected outcomes; v) Pupil and parental perceptions related to hygiene, nutrition and education; vi) progress towards sustainability; and vii) national capacity. The chapter ends with a discussion of implications of the baseline for the implementation of the WFPSMP and the broader school feeding efforts in Kenya.

5.1. Learning Outcomes

155. Overall, the results in the preceding section are in agreement with the ranking of counties by UWEZO Kenya in their last Learning Assessment Survey (2016) (Table 14 below). In this survey, the target WFSMP counties were among the poorest performers (see annex for the genesis of this situation in the WFPSMP Counties). This was also the case in the 2013 survey, which found large difference between urban and agricultural districts compared to arid and other less developed districts. The UWEZO Learning Assessment reports have consistently shown that Class 3 pupils in Turkana, Wajir, Mander, and Garissa cannot competently do standard 2 numeracy and literacy work.

Table 14 - Selected county ranks - class 3 who can do class 2 work (across all competencies)

County Rank	County Name	OUTCOMES (Percentage)		
		Class 3 who can do class 2 Work (%)	Teacher presence (%)	Pupil Presence (%)
1	Nyeri	51.8	88.3	88.9
5	Kajiado	42.3	83.9	88.1
8	Laikipia	39.2	90.4	86.0
12	Taita Taveta	35.1	82.8	87.3
17	Elgeyo Marakwet	31.0	91.0	84.0
20	Embu	29.5	86.7	86.6
23	Machakos	28.5	87.1	91.5
26	Kitui	26.1	91.3	81.4
30	Makueni	24.1	91.7	89.0
42	West Pokot	15.4	88.5	79.3
44	Garissa	15.3	86.1	83.9
45	Turkana	12.9	83.9	76.7
46	Mandera	10.1	89.0	77.7
47	Wajir	9.9	89.2	83.6

156. The current study used the UWEZO methodology to assess literacy (English/Kiswahili) and numeracy of class 3 to 8 pupils for class 2 work. The baseline compared literacy and numeracy schools for the WFPSMP schools with the control group, and with the HGSMP schools which is the group of schools that have transitioned under the government programme.

157. A first important point to note is that the literacy and numeracy scores that were obtained in this baseline are comparable (i.e. in the same range) to those of the 2013 and 2016 UWEZO assessments. Both those assessments consistently find low scores for the ASAL areas. This confirms the reliability of the instruments used for this study.

158. A key finding from these comparisons is that in both comparisons (WFPSMP versus control, and HGSMP versus WFPSMP) the WFPSMP schools score lower on literacy and numeracy and in other education indicators such as attentiveness. Enrolment was the only indicator for which no difference was found in both sets of comparison.

159. A likely explanation for this is the location of the WFPSMP schools. Differences between the WFPSMP and HGSMP schools are possibly partly a reflection of the fact that WFPSMP schools/target counties are in the most marginalized and excluded zones of Kenya which have consistently in the UWEZO tests performed poorly, as already noted above. These arid zones have suffered long drawn and extreme educational marginalization from colonial times through to post independence, as a consequence of which they record low rates on virtually all education parameters. It is therefore likely that some of the difference can be explained by the fact that the HGSMP schools are in areas of the country that are less marginalized and better served economically, socially and politically. HGSMP schools in the semi-arid counties and were purposely selected for earlier transitioning as they were considered the easiest to transfer.

160. Other differences between the HGSMP schools and the WFPSMP schools that emerge from the baseline may also reflect the relatively better-off status of HGSMP schools/counties. For example, the study baseline finds that more children in HGSMP schools eat before going to school compared to WFPSMP schools.

161. In terms of the difference between WFPSMP schools and control schools on education indicators it should be noted that while every effort was made to select schools in similar zones to those where the WFPSMP schools were located for the purpose of having a control group, this proved to be very challenging in practice given that WFP targets all schools in each county. The baseline therefore had to select schools in neighboring counties which were identified as being as similar as possible against identified indicators for comparison, but probably not similar enough.

162. WFP-supported schools are exclusively located in Kenya's northern arid counties. UWEZO's published ranking of counties by learning outcome consistently highlights that the arid counties are largely in the bottom quarter of that list, with Garissa, Turkana, Mandera and Wajir as the bottom four for the past two assessments. As 'control schools' are not drawn from the bottom ranked quarter of the list it is very difficult to see comparability. This caveat is significant. It makes it rather difficult to effectively compare WFP-supported schools with the control group or the HGSMP.

For this reason, it would be worth looking at the progression of WFP over the course of the project in relation to the baseline point, in addition to the comparison with the other groups of schools as was done at the baseline phase.

163.   This baseline study also identified key factors associated with the highest level of English and Kiswahili literacy (story); as well as highest numeracy for a class 2 work among school going children in class 3 to 8. The high level of consistency between the factors across different tests suggests strong reliability of the survey. It also presents a consistent picture of the various determinants of performance of pupils. It is worth noting that the UWEZO Kenya Learning assessment reports equally underscore that the determinants of performance by pupils are numerous and varied. And it is important to also remember that the same factors that impinge on the learners' performance in literacy and numeracy may also affect other outcome level indicators (attendance, retention, etc.). These findings and those on other indicators, as well as on the association between variables should enable WFP and its partners to further design and/or improve already existing intervention strategies

5.2.   Adjusting for other ongoing interventions

164.   The Tusome ("Let's Read" in Kiswahili) Early Grade Reading Activity is a collaboration between the Ministry of Education, USAID and UKAID to improve learning outcomes in English and Kiswahili in class 1 and 2 and is operational in the whole country – it covers public primary schools in the whole country including those in the three arms in this study. A midline evaluation of Tusome had just been done (2016) at the time of this study (and following a Tusome baseline in 2015). The results of the Tusome midline indicate that:

- The Tusome approach is having a strong, positive influence on reading outcomes, with the data showing a strong relationship between project interventions and reading outcomes.
- Reading outcomes for class 1 and 2 pupils greatly improved during the one-year period between the baseline and midline evaluations. While impressive gains have been made, continuing with the Tusome approach will be critical to sustaining or improving on those gains.

165.   The end-line for Tusome project will take place in 2018. Learners in the intervention sites for the MGD WFPSMP will be in class 3 by that time and will therefore be captured in the mid-line evaluation of this project.

166.   Further, another key project that is likely to influence learning outcomes going forward is the GPE funded Kenya Primary Education Development (PRIEDE) whose objective is to improve competencies in early grade Mathematics and strengthen education management and accountability both at the national and school level. The component on improving early grade Mathematics covers all public primary schools in the country including those across the three arms in this study. By the time the WFPSMP/USDA -MGD project will undertake its end line, the effects of this second project would have taken root in the target schools and therefore will need to be

considered in evaluating the numeracy component.

167. Since the two ongoing interventions are rolled out in all the target counties, their effect (if an effect exists) is assumed to be present in equal measure in all the design arms (Control, WFPSMP, and HGSMP). The control arm will assist in removing any such effects and will therefore enable measurement of any effect attributable to the WFPSMP and the HGSFP at midline and end line evaluations.

5.3. Short Term Hunger

168. The findings on short term hunger, are a clear pointer to the fact that a large majority of the counties targeted in the survey are arid and semi-arid and faced by an increasing frequency of droughts which impacts on local food production and food security in many homes, hence the prevalent hunger levels. Further, qualitative data from this baseline on the number of meals eaten per day indicate that food is not consistently available and underscore the important role that a school feeding programme will play in this context. High food prices are prevalent among a population that is largely poor, with over 60% of the population living below the poverty line in many of these areas, and even higher levels in counties like Turkana, Wajir and Mandera (between 74% and 97% of people live below the absolute poverty line in these areas). Arid lands, poor soil quality and unreliable rain are common and the trend is towards further deterioration given environmental degradation and climate change related natural disasters. Thus, food consumption at the household level is pragmatic. Individual families eat what is available and a substantial portion of family time is dedicated to finding food in detriment of other occupations such as education.

169. This baseline survey found that two out of five children (39.5%) reside in households with acceptable food consumption score with a mean coping index of 34. This also means that three out of five children live in families that do not have an acceptable food consumption score, underscoring the chronic food insecurity challenge in the targeted counties. Most districts were facing a serious drought and its associated effects at the time of the survey. The Famine Early Warning Systems Network (FEWS NET) (February 2017) reported Crisis (IPC Phase 3) food security outcomes in parts of the pastoral areas of Turkana, Marsabit, West Pokot, Baringo, Wajir, Mandera, Tana River and Garissa, and parts of the coastal marginal agricultural areas of Kilifi and Lamu. In all these pastoral areas, food security was projected to continue worsening through to July 2017 (i.e. beyond the time that the survey was carried out in April 2017). Households in the IPC Phase 3 category are only marginally able to meet their minimum food needs and only by depleting their assets more rapidly and thus undermining their food consumption. Further, households in the south-eastern and coastal marginal agricultural areas, as well as some pastoral and agro-pastoral areas of Narok, Kajiado, Laikipia, Kieni, Baringo and West Pokot counties were reported as being Stressed (IPC Phase 2), meaning they could afford minimally adequate food consumption but were unable to afford essential non-food expenditures. This situation is further compounded by inconsistent access to income or employment, or both, which affect the population's ability to combat hunger. The resultant food insecurity is particularly detrimental for children. The latter are more vulnerable to the harmful effects of food insecurity and the long-term consequences

can be more severe. Poor nutrition and episodes of hunger subject children to increased health risks and impaired cognitive development. Families in these area are quite pragmatic about food consumption; they only eat what is available but this means there are hardly any considerations for nutrient rich foods whose prices are likely to be prohibitive. In effect, coping strategies at the household level are an expression of negotiated decisions to minimize the impact of food insecurity. Food sharing practices, may be a sustainable mechanism for coping with hunger. Such practices tend to be rooted in cultural and social customs. Hence, understanding these food insecurity coping strategies could be a good starting point to develop and formulate community based contextually sensitive interventions to improve household food security.

5.4.   School Meals and Expected Outcomes

170.   The findings indicate that approximately half of the parents/guardians reported that their children have been receiving school meals at school in the current school year (2017) with the proportions higher in the WFPSMP than control schools on one hand; and also higher in the HGSMP than in WFPSMP schools.

171.   Two out of five of the parents/guardians reported that the school where the child was learning was serving food during the survey week, with WFPSMP schools more likely to be serving food in the survey week, than control schools, and HGSMP schools more likely to be serving food than WFPSMP schools. Yet the school attendance data of this survey show that, there was no significant difference between the average numbers of students regularly attending WFPSMP schools compared to control schools; while there is a significant difference between the average numbers of students regularly attending HGSMP schools compared to WFPSMP schools (with the former having higher attendance rates). Further, there was no statistically significant difference in average enrolment in the comparison between control schools and WFPSMP schools on one hand; and between WFPSMP and HGSMP schools on the other.

172.   Could these outcomes be explained by the fact that the survey was undertaken at a time when the country was experiencing extreme drought conditions in many places, which coincided with the pipeline break in the WFPSMP in term one of 2017 because no funding was available for SMP? In effect, while it was expected that control schools would have no school meals programme, three control schools had a school meals programme in place at the time of the survey. Further, the fact that 12 WFPSMP schools did not have a school meals programme since the third term of 2016, although most WFPSMP schools (32) had the school meals programme likely played a role. Finally, most of the HGSMP schools (15) reported having the programme except three schools that indicated the programme existed but it was not running and strangely three schools which are classified as HGSMP schools by the MOE but where the programme does not exist according the persons responsible for these schools.

173.   The dire drought situation prevalent in the target counties coupled with government's budgetary constraints to meet the demands of all schools under the HGSMP might offer explanations for these situations across the three arms of the survey. Increasing frequency of droughts and associated famine has led the

government to put in place school feeding in areas that were not previously covered (i.e. in agro- ecological zones that were previously not considered as subject to severe food insecurity) and has also led some communities towards seeking local solutions. On the other hand, government budgets have not been sufficient to meet the needs of schools that have transitioned to the HGSMP and this may explain why some of these schools did not have school feeding at the time of the survey.

5.5.   Pupil and parental perceptions related to hygiene, nutrition and education

174.   The baseline shows that **WFPSMP schools have better scores than control schools on selected indicators related to pupil and parental perceptions and practices related to hygiene, nutrition and education**. This could suggest that attention to hygiene, nutrition and the importance to education has been stronger in the ASAL areas, given that these geographical areas have been prioritized by many other actors (UNICEF, NGOs) and that the higher awareness may be the result of interventions from other organizations in these areas. Further, previous McGovern-Dole projects (FY 2004, 2005, 2006, 2007-2009, 2010-2013) could have had an impact among the WFP Schools on indicators related to pupil and parental perceptions and practices related to hygiene, nutrition, and education. While the baseline was not able to unequivocally establish that this is the case, the mid- and end-line measurements will establish to what extent these indicators will evolve further and how this compares to any change in the comparison groups (the control and the HGSMP).

5.6.   Progress towards sustainability

175.   **The intention of the comparison between the WFPSMP schools and the HGSMP schools was to identify progress towards sustainability**. It is worth noting that the HGSMP schools as identified in the study are those that were handed over in the first phase of transitioning WFPSMP to HGSMP (2009 -2013) and do not include those transitioned in phase two that were in the more arid counties and were transitioned on a completely different modality. Consequently, while the significant differences between the locations of the schools make a comparison of the educational indicators challenging, there are some differences that are notable. HGSMP schools perform well on food preparation scores, but they do not perform well on hygiene and education awareness. As is the case for the control schools this may reflect the lack of exposure to activities that target education and hygiene awareness. It may also suggest that in the transitioning process attention to hygiene has been lost, and that this is reflected in the poorer scores. The higher scores on food preparation for HGSMP schools, would however, suggest that training that has been provided in this area has been relatively successful (WFPSMP cooks are still to be trained, as the baseline was started before activities started). It should also be remembered in this context that pupils are a 'moving target' in an

intervention of this kind, as they move on, whereas cooks are likely to stay in the same position for multiple years, consolidating what they have learnt.

5.7. National Capacity

176. The baseline establishes that Kenya has made progress in enacting policy and legal frameworks and in having a government owned and led school meals programme. It also underscores key areas that still need attention. Gaps include ensuring a strong national multi-sectoral coordination mechanism, and higher levels of more predictable government funding of school meals. Approval of the National School, Health Nutrition and Meals Strategy (2016) is pending, yet it is key in implementing school feeding. Further, the need for Kenya to have a stable funding source independent of external support for its school meals programme as a prerequisite for sustainability, cannot be emphasized enough. Consequently, the degree to which school feeding is included in county and national level planning and will determine to what extent school feeding can be sustained and produce the anticipated outcome and impact.

5.8. Selected implications for the mid- and end-line phases and for school feeding in Kenya

177. It will be important in the next phases of data collection to further examine some of the differences that have been identified between arms, and to ensure that the data collection tools (especially the qualitative part of the study) focus on the reasons for these differences.

178. Meanwhile it is important to highlight that despite these differences the baseline has achieved the objective of making it possible to record the values for each of the schools in each of the groups. This provides the basis for the mid and end-line phases to compare how WFPSMP schools have evolved in terms of these indicators compared to any changes control and HGSMP schools.

179. The baseline survey has demonstrated that a quasi-experimental design is feasible. Going forward through the mid line and end line evaluations, it would be important to ensure that:

- The same schools visited during the baseline are visited during the midline and end line.

- The changes in school meals programmes in the schools are documented and considered at both the midline and end line

- The same sampling strategy is maintained at midline and end line.

- Other cofounding factors that might influence the outlined hypothesis are documented and reported at both midline and end line.

180. The experience of the baseline exercise would suggest that for the mid-line and end-line exercises it would be sensible to do the qualitative data collection after the quantitative analysis. This will make it possible to have a more in-depth understanding of differences that are highlighted from the quantitative data and make

for an approach to the qualitative questioning that is more directly related to gaps in understanding.

181.   The benchmark values for the indicators in the MGD Performance Monitoring Plan, coupled with the overall baseline findings and the analysis of associated factors, point to **the need to focus on the following areas in implementing the WFPSMP:**

- Progress has been made in drafting the National School Health, Nutrition and Meals Programme Strategy, however it remains to be formally approved. WFP should continue to advocate for a speedy adoption and implementation of this strategy.

- Adequate and regular funding through the Government budget is a challenge in transitioning schools to the Government led HGSMP (see also below). WFP should work with partners in advocating with the Ministry of Finance and the Treasury for ring-fencing SMP budgets (which would be consistent with the GOK's social protection commitments). It should also advocate for regular and timely disbursements of GoK funds to schools, and for a progressive increase in government funding to the HGSMP.

- Strong participation by all partners, regular meetings, and better coordination are critical to using scarce resource more efficiently and effectively. With the exception of nutrition, coordination among key ministries and programmes at national level remains weak. WFP should support the Ministry of Education in establishing the National Multi-sectoral Steering Committee, and support the GoK in seeking stronger participation of key ministries and programmes such as social protection and agriculture in this forum.

- The baseline highlights poor literacy and numeracy scores of the schools in the WFPSMP areas. School feeding can offer only part of the solution and WFP should therefore actively coordinate its efforts with that of other partners in the same counties to ensure that the factors that affect school participation and achievement are addressed in a holistic manner.

- The analysis of associated factors that are presented in this report should inform further research and guide programming work by WFP and its partners to further design and/or improve already existing intervention strategies. WFP could use these findings as input into a meeting with partners to discuss how to strengthen support to education in the targeted areas.

- To support the transition WFPSMP schools there should be a strong focus on mentorship and capacity building of school leaders to be able to properly manage school feeding.

- Given the importance of involving various sectors and actors in school feeding to cover all dimensions of the programme (nutrition, literacy, local production, etc.), WFP should actively support counties where it is operating in setting up County Level Multi-SectoralSteering Committees (bringing in health, agriculture, academic institutions, the private sector, and other partners as relevant) and

support these groups with capacity development if necessary.

- WFP should develop a clear and convincing case for decentralizing the management of school feeding to the county level, as is already the case for the management of ECD. This will promote a better quality programme where the key partners respond to/are answerable to their constituents and are more in tune with needs and requirements of the county, and will allow for better allocation and utilization or resources and monitoring programme implementation. A decentralized programme would also allow for the establishment of mechanisms by which counties might advance funds to purchase goods at the best possible time, and make the school feeding interventions more cost effective.

- Most of the schools that participated in the baseline were having pipeline breaks. WFP should identify the key factors that are contributing to these pipeline issues and ensure regular delivery to the schools to minimize the number of days without school feeding.

182.   Finally, the results of the baseline which compared the HGSMP and WFPSMP schools highlight challenges in the **transitioning process**. Recommendations in this matter fall outside of the strict scope of the WFPSMP but are still captured here as they are important for the broader group of stakeholders, and if they do not receive attention may in the future also affect the WFPSMP schools that are transitioning. In the view of this evaluation a successful transition from WFPSMP to sustainable HGSMP will need to consider the following:

- Adequate budget allocations should be set aside (and ring fenced) by the GoK and disbursed to schools on time to ensure timely and cost effective purchase of the requisite food.

- Capacity should be developed at all levels – national, county, and school to ensure effective implementation of the intervention.

- The transition process should be allowed adequate time to ensure contextualization of best models and practices.

- Enhanced coordination among all the stakeholders at various levels – national, county and school will be key to the success of the HGSMP.

- Strong linkages with local smallholder farmers and traders and enhancement of their capacity to tap into the school markets effectively will be critical to the success of the HGSMP

- The baseline finds that HGSMP schools perform well on food preparation scores, but they do not perform well on hygiene and education awareness. This suggests that in the transitioning process attention to hygiene has been lost and that this may need attention.

- While it is the Kenya Government's responsibility to provide food to school going regions in Arid and Semi-Arid areas, particularly with the anticipated transition to HGSMP, donors and other supporters will need to walk with the Ministry of Education over the transitional period to ensure success of the move from WFPSMP to HGSMP. To do this effectively, it would be important for support

towards the transition efforts to be more coordinated to reduce uncertainty and breaks in the resources that are necessary for an effective transition. It is also critical that adequate time be given to the transition process as well as predictable technical and other associated support through WFP.

183. Kenya still has a lot to be done on these elements to ensure a sustainable Home Grown School Meals Programme. In so doing, the country will still need the technical and financial support of the various partners that have brought the SMP this far.

Annex 1 – MGD Performance Monitoring Plan

	DRAFT Performance Monitoring Plan (PMP)
WFP wfp.org	*Kenya FY 16 Award* ***NOTE: The first section includes results and performance indicators. The second section includes activities and activity output indicators. There is some overlap between the two sections where output indicators are also result indicators.**

Performance Indicator and Activity output indicator	Indicator Definition and Unit of Measurement	Data Source	Method/ Approach of Data Collection or Calculation	Data Collection		Analysis, Use and Reporting	
				When	**Who**	**Why**	**Who**
Result: MGD SO1 Improved Literacy of School-Age Children							
Proportion of 7-13 years olds that can solve Class 2 numeracy and literacy problems *(Outcome Indicator: Custom; Responsible Organization: UWEZO, USAID, Tusome Project Participants)*	*This indicator measures the proportion of children ages 7-13 that have attained literacy and numeracy at a Standard 2 level* *Unit of measure: Percentage* *Disaggregation: TBD*	*UWEZO annual reports*	Review of UWEZO data	*Baseline, Midterm, and final evaluation*	*External evaluators*	*Indicates whether children's literacy and numeracy learning outcomes are being achieved through the USAID-funded Tusome project. This project overlaps with USDA McGovern-Dole-targeted counties and the schools are being co-located for the achievement of MGD SO1*	*WFP, MOE, Donors, development and NGO partners, other Government of Kenya institutions*

Number of individuals benefiting directly from USDA-funded interventions (Output Indicator: Standard; Responsible Organization: WFP and MOE)	*This indicator measures the number of individuals directly benefitting from USDA-funded interventions. These individuals must come into direct contact with project interventions (i.e. goods or services).* *Direct beneficiaries include: children, teachers, school administrators, parents, cooks, storekeepers, farmers, and government staff.* Unit of measure: individuals Data will be disaggregated by gender, new and continuing.	*WFP standard Project reports, School termly reports*	Review and analysis of project records and reports	*Annually and quarterly*	*WFP and MOE*	*Indicates the breadth and scale of the project's impact in the target districts* *To inform annual review meetings with education stakeholders* *To inform annual reporting to USDA and WFP HQ*	*WFP, MOE, Donors, development and NGO partners, other Government of Kenya institutions*
Number of individuals benefiting indirectly from USDA-funded interventions *(Output Indicator: Standard; Responsible Organization:* WFP and MOE)	*This indicator measures the number of individuals indirectly benefitting from USDA-funded interventions. These individuals will not come into direct contact with project interventions but will benefit tangentially.* *Indirect beneficiaries assumed for this project are siblings of children receiving school meals and parents of children who are not direct beneficiaries through PTA training* Unit of measure: individuals Data will be disaggregated by gender	*Survey: Household /parent interviews*	Interviews with parents to determine the average number of children per household going to school. The average household size in target areas is known. Indirect beneficiaries=Number of HH * (HH size-average number of children per HH going to school)	*Baseline, midterm, and final evaluation*	*Independent consultants*	*Indicates the breadth and scale of the project's impact.* *To inform annual review meetings with education stakeholders* *To inform annual reporting to USDA and WFP HQ*	*WFP, MOE, Donors, development and NGO partners, other Government of Kenya institutions*

Result: MGD 1.2 Improved Attentiveness

Percent of students in classrooms identified as inattentive by their teachers (Outcome Indicator: Custom; Responsible Organization: WFP, MOE)	This indicator measures the percentage of students in any given classroom that is identified as inattentive by the teacher. *Unit of measure: percent*	Survey: Teachers interviews	Primary data collection by asking teachers of the sampled schools their perception of the share of students that appeared inattentive in classes	*Baseline, midterm, and final evaluation*	*Independent consultants*	To determine whether the interventions have influenced students' ability to be attentive.	*WFP, MoE, Donors, development and NGO partners, other Government of Kenya institutions*

Result: MGD 1.2.1 Reduced Short-Term Hunger

Number of daily school meals (breakfast, snack, lunch) provided to school-age children as a result of USDA assistance (Output Indicator: Standard; Responsible Organization: WFP, MOE)	This indicator measures the total number of school meals provided to students in MGD-supported schools, as reported by school managers and cooperating partners. *Unit of measure: no. of meals*	*WFP and MOE project records, School Termly Reports*	*Review and analysis of project records and reports*	*Bi annual and Annual, monthly reports by MOE, daily school records*	*School Administrators, WFP*	To measure the number of school meals given to students.	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions*
Number of school-aged children receiving daily school meals (breakfast, snack, lunch) as a result of USDA assistance (Output Indicator: Standard; Responsible Organization: WFP,MOE)	*This indicator measures the total number of students receiving a daily cooked meal per year over the life of the project, as reported by school managers and CPs* Unit of measure: individuals Data will be disaggregated by gender, new and continuing	*WFP and MOE project records, School records*	*Review and analysis of project records and reports*	*Bi annual and Annual, monthly reports by MOE, daily school records*	*School Administrators, WFP*	*To measure the percentage of students reached with a daily school meal*	*WFP, MOE Donors, development and NGO partners , other Government of Kenya institutions*

Percent of students in target schools who regularly consume a meal before the school day *(Outcome Indicator: Custom; Responsible Organization: WFP)*	*This indicator measures what percentage of children receive a meal at home prior to the school meal at lunch time.* *Unit of measure: percent*	Survey: Parent interviews	Primary data collection by asking parents from sampled schools if their children eat before going to school and if yes, how often i.e. always, sometimes or never.	*Baseline, midterm, and final evaluation*	*Independent consultants*	*To measure the percentage of children who may experience short-term hunger resulting in lack of concentration as a result of not taking a meal before going to school*	*WFP, MOE Donors , development and NGO partners , other Government of Kenya institutions*
Percent of students in target schools who regularly consume a meal during the school day *(Outcome Indicator: Custom; Responsible Organization: WFP)*	*This indicator measures what percentage of children receive a meal during the school day.* *Unit of measure: percent*	*WFP and MOE project records, School records*	*Review and analysis of project records and reports complemented by monitoring reports*	*Bi annual and Annual, monthly reports by MOE daily collection by school*	*School Administrators*	*To measure percentage of students regularly reached with a daily school meal*	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions*
Result: MGD 1.2.1.1/1.3.1.1.Increased Access to Food (School Feeding)							
Number of social assistance beneficiaries participating in productive safety nets as a result of USDA assistance *(Output Indicator: Standard; Organization: WFP)*	*This indicator measures the number of students who consume a daily meal at school* Unit of measure: individuals Data will be disaggregated by new, continuing and gender.	*WFP and MOE project records, School records*	*Review and analysis of project records and reports*	*Bi annual and Annual, monthly reports by MOE, daily collection by school*	*School Administrators, WFP*	*To measure the number of students reached with a daily school meal*	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions*
Total quantity of commodities provided to students as a result of USDA assistance.	*This indicator measures the total amount of commodities that have been provided as a part*	*WFP Logistics Data*	*WFP analysis of reports*	*Bi-annual report;*	*WFP*	*To measure the quantity of commodities that have been imported and*	*WFP, MOE, Donors, development and*

(Output Indicator: Custom; Organization: WFP)	*of this USDA-funded intervention.* Unit of measure: MT			*quarter ly*		*are to be distributed.*	*NGO partners , other Governm ent of Kenya institution s*

Result: MGD 1.3 Improved Student Attendance

Number of students regularly (80%) attending USDA supported classrooms/schools (Performance Indicator: Standard; Organization: WFP)	*This indicator measures the number of students in MGD-supported schools who attend classes at least 80 percent of the time that school is in session, as reported by school directors* Unit of measure: individuals Data will be disaggregated by gender.	*School records*	*Collection and analysis of students attendance data from school attendance records for a sample of students in sampled schools*	*Baselin e, midter m, and final evaluat ion*	*Independ ent consultan ts*	*To track progress towards improved student attendance*	*WFP, MOE, Donors, developm ent and NGO partners , other Governm ent of Kenya institution*

Result: MGD 1.3.4 Increased Student Enrolment

Number of students enrolled in schools receiving USDA assistance (Output Indicator: Standard; Responsible Organization: WFP)	*This indicator measures the number of students officially registered in MGD-supported primary schools in a given school year.* *Unit of measure: individuals* *Data will be disaggregated by gender.*	*School records*	*Collection and analysis of school records on enrolment*	*Baselin e, midter m, and final evaluat ion. Termly by schools, termly by WFP throug h mVAM*	*Independ ent consultan ts, WFP, MOE*	To track progress towards increasing student enrolment	*WFP, MOE, Donors, developm ent and NGO partners , other Governm ent of Kenya institution*

Result: MGD 1.3.5 Increased Community Understanding of Benefits of Education

Percent of parents in target communities who can name at least three benefits of primary education (Performance Indicator: Custom; Organization: WFP)	This indicator measures the percentage of parents who can name at least three benefits of primary education *Unit of measure: percent*	Survey: Parent interviews	Primary data collection by asking parents from sampled schools to name at least three benefits of primary education	*Baseline, midterm, and final evaluation*	*Independent consultants*	To track communities understanding of engagement with their communities education system and services.	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions*

Result: MGD 1.4.1 Increased Capacity of Government Institutions

Number of county-level inter-ministerial committees for HGSMP established (Output Indicator: Custom; Organization: WFP)	*This indicator will measure the Number of county-level inter-ministerial committees for HGSMP established at county level* *Unit of measure: Number of committees*	*Committee meetings minutes*	*Review of committee minutes*	*midterm, and final evaluation*	*Independent consultants*	To track progress of strengthening governance and multi-sectoral coordination and collaboration for the school meals programme at county level	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions*
Number of national-level inter-ministerial coordination committees for HGSMP established (Output Indicator: Custom; Organization: WFP)	*This indicator will measure the Number of county-level inter-ministerial committees for HGSMP established at national level* *Unit of measure: Number of committees*	*Committee meetings minutes*	*Review of committee minutes*	*midterm, and final evaluation*	*Independent consultants*	*To track progress of strengthening governance and multi-sectoral coordination and collaboration for the school meals programme at national level*	*WFP, MOE Donors , development and NGO partners , other Government of Kenya institutions*

Result: MGD 1.4.2/2.7.2 Improved Policy and Regulatory Framework

Number of educational policies, regulations, and/or administrative	This indicator measures the number of policies/regulations/administrative procedures in	*Government of Kenya policy*	*Review and analysis of GOK*	*Annual, Baseline,*	*Independent consultan*	To track progress made following advocacy and	*WFP, MOE, Donors, developm*

Indicator	Description	Data Source	Method	Frequency	Responsibility	Assumptions	Partners
procedures in each of the following stages of development as a result of USDA assistance (Stage 5) (Performance Indicator: Standard; Organization: WFP, MOE)	the various stages of progress towards an enhanced enabling environment for education. Specifically, this includes: 1. School Nutrition and Meals Strategy 2. Revised HGSMP Guidelines *Unit of measure: no. of policies in process and relevant stage*	*related reports*	*policy related documents*	*Midterm and final evaluations*	*ts, WFP; MOE*	dialogue related activities to ensure adequate and regular budget allocations and maintain political commitment to the programme	*ent and NGO partners , other Government of Kenya institutions*
Number of child health and nutrition policies, regulations, and/or administrative procedures in each of the following stages of development as a result of USDA assistance (Stage 5) (Performance Indicator: Standard; Organization: WFP, MOE)	This indicator measures the number of policies/regulations/administrative procedures in the various stages of progress towards an enhanced enabling environment for education. Specifically, this includes: 1. School Health Policy (revised) *Unit of measure: no. of policies in process and relevant stage*	*Government of Kenya policy related reports*	*Review and analysis of GOK policy related documents*	*Annual, Baseline, Midterm and final evaluations*	*Independent consultants, WFP; MOE*	To track progress made following advocacy and dialogue related activities to ensure adequate and regular budget allocations and maintain political commitment to the programme	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions*

Result: MGD 1.4.3/2.7.3 Increased Government Support

Value of new public and private sector investments leveraged as a result of USDA assistance (Performance Indicator: Standard; Organization: WFP, MOE)	This indicator measures the value of public sector resources intended to complement USDA-funded activities – specifically the increased government investment in the HGSMP. *Unit of measure: US Dollar* *Data will be disaggregated by type of investment*	*WFP and GOK project reports*	*Review and analysis of project reports*	*Baseline, Midterm and final evaluations, Annual*	*Independent consultants, WFP*	To measure level of complementary support of the project outside of USDA funding.	*WFP, MOE Donors, development and NGO partners , other Government of Kenya institutions*
Number of public-private partnerships formed as a result of USDA assistance (Performance Indicator: Standard; Organization: WFP, MOE)	This indicator measures the number of private partnerships generated in CTS counties during the transition year. *Unit of measure: no of partnerships (suppliers/small traders, farmer organizations)*	*WFP reports; school tender data*	*Review and analysis of project records and reports*	*Annual*	*WFP*	To measure level of complementary support of the project outside of USDA funding.	*WFP, MOE Donors, development partners, county governments; communities.*

Result: MGD 1.4.4/2.7.4 Increased Engagement of Local Organizations and Community Groups

Number of Parent-Teacher Associations (PTAs) or similar "school" governance structures supported as a result of USDA assistance *(Performance Indicator: Standard; Organization: WFP)*	This indicator measures the number of schools that benefit from the establishment and training of PTAs *Unit of measure: No. of school governance structures*	*School and project records*	*Review and analysis of project reports*	*Bi-annual*	*WFP and MOE*	*To measure the effects of the project on promoting the capacity of organizations at school level*	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions*

Result: SO 2 Increased Use of Health and Dietary Practices

Percent of schools in target counties that store food off the ground	*This indicator will measure the number of schools where food is stored off the ground*	*Survey reports, Monitoring reports*	School stores will be observed to check if food has been stored off the ground.	Baseline, Midterm and final evaluations, monthl	Independent Consultants, WFP and MOE	To measure the effects of promoting good hygiene and health practices,	WFP, MOE, Donors, development and NGO partners , other

				y through monthly monitoring visits at school level			Government of Kenya institutions

Result: MGD 2.2 Increased Knowledge of Safe Food Prep and Storage Practices

Percent of food preparers at target schools who achieve a passing score on a test of safe food preparation and storage (Outcome indicator: Custom; Responsible Organization: WFP)	*This indicator will measure the percentage of food preparers (cooks) at school who achieve a passing score on a test of safe food preparation and storage* Unit of measure: individuals Data will be disaggregated by gender.	Survey report: Results of tests administered to cooks	Primary data collection by administering a test on safe food preparation and storage to cooks in representative sampled schools	*Baseline, midterm, and final evaluation*	*Independent consultants*	To measure effects of promoting safe food preparation and storage practices	WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions

Result: MGD 2.3 Increased Knowledge of Nutrition

Number of schools benefitting from nutrition and hygiene education (Output indicator: Custom; Responsible Organization: WFP)	This indicator will measure the number of schools benefitting from nutrition and hygiene education *Unit of measure: No. of school*	*project reports*	*Review and analysis of project reports*	*Quarterly,* *Bi-annual*	*WFP and MOE*	To measure number of schools that have received nutrition and hygiene related education	WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions
Number of individuals trained in child health and nutrition as a result of USDA assistance (Output Indicator: Standard;	*Total number of individuals trained in health and nutrition in MGD-supported schools and communities, including Canteen Management Staff and School Management Committee members.*	*Project reports*	*Review and analysis of project training reports*	*Termly* *Bi-annual*	*WFP and MOE*	*Enables to know the number of people in communities' target who have knowledge in health and nutrition. Sentinel*	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya*

Responsible Organization: WFP)	Unit of Measure: Individuals Data will be disaggregated by gender					*indicator for project theory of change: people trained shared nutrition and health information through communities*	*institution s*

Result: MGD 2.6 Increased Access to Requisite Food Prep and Storage Tools

Number of target schools with increased access to improved food prep and storage equipment (kitchens, storerooms, stoves, kitchen utensils) (Output indicator: Custom; Organization: WFP)	This indicator measures the number of schools fully supplied with new or rehabilitated kitchens, storerooms, fuel-efficient stoves and kitchen utensils *Unit of measure: no. of schools*	*Project reports*	*Review and analysis of project reports*	*Quarter ly,* *Bi-annual*	*WFP and MOE*	To track s progress towards improving access to food prep and storage equipment	*WFP, MOE, Donors, , developm ent and NGO partners , other Governm ent of Kenya institution s*

Activity 1: Provide School Meals

Number of school-aged children receiving daily school meals (breakfast, snack, lunch) as a result of USDA assistance (Output Indicator: Standard; Organization: WFP, MOE)	This indicator measures the total number of students receiving a daily cooked meal per year over the life of the project, as reported by school managers and CPs *Unit of measure: individuals* *Data will be disaggregated by gender.*	*Project reports*	*Review and analysis of project reports*	*Monthl y, quarter ly Bi-annual*	*WFP and MOE*	To measure the success of school meals at reducing short term hunger	*WFP, MOE Donors, developm ent and NGO partners , other Governm ent of Kenya institution s*

Activity 2: Build the Capacity of National and County-level Actors to Manage School Feeding Programs

Number of parents trained or certified as a result of USDA assistance (Output Indicator: Custom; Organization: WFP)	This indicator measures the number of parents that have been trained as a result of USDA assistance Unit of measure: individuals *Data will be disaggregated by gender.*	*Project reports*	*Review and analysis of project training reports*	*Bi-annual*	*WFP and MOE*	To track progress in building capacity of school –level actors (BoM members) to manage school feeding programs	*WFP, MOE, Donors, developm ent and NGO partners , other Governm ent of Kenya institution s*
Number of school administrators and officials in target schools trained or certified as a result of USDA assistance (Output Indicator: Standard; Responsible Organization: WFP)	This will measure the number of school head teachers trained on school meals programme management *Unit of measure: individuals* *Data will be disaggregated by gender.*	*Project reports*	*Review and analysis of project training reports*	*Bi-annual*	*WFP and MOE*	To track progress in building capacity of school head teachers to manage school feeding programs	*WFP, MOE, Donors, developm ent and NGO partners , other Governm ent of Kenya institution s*
Number of county-level officials trained or certified as a result of USDA assistance (Output Indicator: Standard; Responsible Organization: WFP)	This will measure the number of education officials trained on school meals programme management *Unit of measure: individuals* *Data will be disaggregated by gender.*	*Project reports*	*Review and analysis of project training reports*	*Bi-annual*	*WFP and MOE*	To track progress in building capacity of school head teachers to manage school feeding programs	*WFP, MOE, Donors, developm ent and NGO partners , other Governm ent of Kenya institution s*
Number of school administrators and officials in target schools who demonstrate use of new techniques or tools as a result of USDA assistance (Output Indicator: Standard;*	This will measure the number of school head teachers trained on school meals programme management *Unit of measure: individuals* *Data will be disaggregated by gender.*	*Project reports*	*Review and analysis of project training reports*	*Bi-annual*	*WFP and MOE*	To track progress in building capacity of school head teachers to manage school feeding programs	*WFP, MOE, Donors, developm ent and NGO partners , other Governm ent of Kenya*

Responsible Organization: WFP)							*institution s*
Number of county-level officials in target schools who demonstrate use of new techniques or tools as a result of USDA assistance (Output Indicator: Standard; Responsible Organization: WFP)	This will measure the number of education officials trained on school meals programme management *Unit of measure: individuals* *Data will be disaggregated by gender.*	*Project reports*	*Review and analysis of project training reports*	*Bi-annual*	*WFP and MOE*	To track progress in building capacity of school head teachers to manage school feeding programs	*WFP, MOE, Donors, developm ent and NGO partners , other Governm ent of Kenya institution s*

Activity 3: Raise Awareness on the importance of Education

Number of radio spots held (Output Indicator: Custom; Organization: WFP)	This indicator will measure the number of radio spots held to pass messages on benefits of education. These will target communities where the programme is implemented *Unit of measure: number of radio spots*	*Project reports*	*Review and analysis of project reports*	*Monthl y, Quarter ly, Bi-annual*	*WFP and MOE*	To track the number of radio spots held	*WFP, MOE, Donors, developm ent and NGO partners , other Governm ent of Kenya institution s*
Number of community members benefiting from radio spots (Output Indicator: Custom; Organization: WFP)	This indicator will measure the number of community members in targeted counties (Baringo, Garissa, Mandera, Turkana, Wajir and West Pokot) reached through radio spots with messages on benefits of education.	*Project reports*	*Review and analysis of project reports*	*Monthl y, Quarter ly, Bi-annual*	*WFP and MOE*	To track the number of community members reached through the radio spots	*WFP, MOE, Donors, developm ent and NGO partners , other Governm ent of Kenya institution s*

Number of posters, fliers, leaflets distributed (Output Indicator: Custom; Organization: WFP)	This indicator will measure the number of posters, fliers, leaflets distributed *Unit of measure: number of posters, fliers, leaflets*	*project reports*	*Review and analysis of project reports*	*Termly* *Bi-annual*	*WFP and MOE*	To track number of posters, fliers, leaflets distributed	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institution s*

Activity 4: Build/Rehabilitate: Kitchens, Cook Areas and Other School Grounds or Buildings

Number of educational facilities (i.e. school buildings, classrooms, and latrines) rehabilitated/cons tructed as a result of USDA assistance (Output Indicator: standard; Organization: WFP)	*This indicator will measure the number of kitchens and /or storage facilities constructed as a result of USDA assistance* Unit of measure: number of kitchens	*project reports compleme nted by monitoring reports*	*Review and analysis of project reports*	*Bi-annual, monthl y monitor ing reports*	*WFP and MOE*	To track number of kitchens constructed	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institution s*

Activity 5: Provide Energy-Saving Stoves to Schools

Number of energy saving jikos installed in schools as a result of USDA assistance (Output indicator: Custom; Responsible Organization: WFP)	*This indicator will measure the Number of energy saving jikos installed in schools as a result of USDA assistance* Unit of measure: number of energy saving jikos	*project reports compleme nted by monitoring reports*	*Review and analysis of project reports*	*Bi-annual, monthl y monitor ing reports*	*WFP and MOE*	To track number of energy saving jikos installed at school level	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya*

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							institution s

Activity 6: Conduct Awareness Campaigns and Trainings on Nutrition and Hygiene

Number schools benefitting from nutrition education and hygiene (Output Indicator: Custom; Responsible Organization: WFP)	*This indicator measures the number of schools benefitting from nutrition and hygiene education* Unit of measure: number of schools	*project reports complemented by monitoring reports*	*Review and analysis of project reports*	*Bi-annual, monthly monitoring reports*	*WFP and MOE*	*To track the number of schools benefitting from nutrition education and hygiene*	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institution s*
Number of children benefitting from nutrition education and hygiene (Output Indicator: Custom; Responsible Organization: WFP)	*This indicator measures the number of children benefitting from nutrition and hygiene education* Unit of measure: individuals Data will be disaggregated by gender	*project reports complemented by monitoring reports*	*Review and analysis of project reports*	*Bi-annual, monthly monitoring reports*	*WFP and MOE*	*To track the number of children benefitting from nutrition education and hygiene*	*WFP, MOE, Donors, development and NGO partners , other Government of Kenya institution s*

Activity 7: Empower the Community to Manage School Feeding Programs

Number of counties where beneficiary feedback has been has been incorporated into community training and awareness activities (Output Indicator: Custom; Organization: WFP)	This indicator will measure the number of counties where beneficiary feedback has been rolled out *Follow up to increase awareness on the helpline will include radio spots, public meetings and distribution of posters and leaflets*	*project reports complemented by monitoring reports*	*Review and analysis of project reports*	*Quarterly, Bi-annual, monthly monitoring reports*	*WFP and MOE*	To track the number of counties with beneficiary feedback mechanism in place	*WFP, MOE Donors , development and NGO partners , other Government of Kenya institution s*

	Unit of measure: Number of counties						

Activity 8: Promote Food Safety and Quality in the HGSMP

Number of officials trained on food quality in HGSMP supply chain *(Output Indicator: Custom; Organization: WFP, MOE)*	*This indicator measures the number of officials (County Public Health Officers, County School Meals Programme Officers, School Meals Procurement Committee and traders)trained on food quality in HGSMP supply chain* Unit of measure: individuals Data will be disaggregated by gender	*project reports*	*Review and analysis of project training reports*	*Bi-annual,*	WFP and MOE	To track to the number of officials trained on food quality in HGSMP supply chain.	WFP, MOE, Donors, development and NGO partners , other Government of Kenya institutions
Number of farmer organizations trained on food quality *(Output Indicator: Custom; Organization: WFP)*	This indicator measures the number of farmer organizations trained on food quality Unit of measure: farmer organizations	*project reports*	*Review and analysis of project training reports*	*Bi-annual,*	WFP and MOE	To track to the number of farmer organizations trained on food quality	WFP, MOE, MOALF, Donors, development and NGO partners , other Government of Kenya institutions
Number of traders trained on food quality *(Output Indicator: Custom; Organization: WFP)*	This indicator measures the number of traders trained on food quality Unit of measure: individuals Data will be disaggregated by gender	*project reports*	*Review and analysis of project training reports*	*Bi-annual,*	WFP and MOE	To track to the number of traders trained on food quality	WFP, MOE, MOH, Donors , development and NGO partners , other Government of Kenya institutions

Number of individuals who demonstrate use of new safe food preparation and storage practices as a result of USDA assistance *(Outcome Indicator: Standard ; Organization: WFP)*	This indicator measures the number of farmer organization, officials and traders applying improved food quality practises after undergoing training on food quality. Unit of measure: Number of farmer organizations , officials and traders Data will be disaggregated by farmer organizations, officials and traders	*Survey reports complemented by project reports*	*Primary data collection through observation and interviewing traders and farmer organization representatives on what improved food quality practices they are applying that they did not before the training*	*Baseline, midterm, and final evaluation*	*Independent consultants*	To measure effectiveness of the training	WFP, MoE, Donors, development and NGO partners, other Government of Kenya institutions
Number of testing kits (Blue Boxes) distributed to public health officials *(Output Indicator: Custom; Organization: WFP)*	This indicator will measure the number of testing kits (Blue Boxes) distributed to public health officials Unit of measure: Number of blue boxes	*project reports*	*Review and analysis of project reports and blue boxes distribution reports*	*Bi-annual, annual*	*WFP and MOH*	To track to the number of testing kits (Blue Boxes) distributed to public health officials	WFP, MOE,MOH, MOALF, Donors, development and NGO partners, other Government of Kenya institutions

Annex 2 – Detailed Baseline Methodology

Overview

A detailed methodology for the baseline was drawn up during the inception phase and presented in an Inception Report (Visser et al, 2017). An important aspect of the Inception phase was to establish whether the envisioned quasi-experimental design for the study was feasible. As the team's assessment showed that this was feasible the study was designed in line with these parameters.

The inception phase also identified key parameters for the study including the required sample size, data collection approach and tools, and the approach to data analysis.

Feasibility of the proposed quasi-experimental design

The Inception phase confirmed that a quasi-experimental design could be employed in this study.

The assessment was based on the fact that a quasi – experimental design is feasible when one can get a match between the intervention and control. This was deemed feasible in this case because the study team was able to:

i)   Generate variables 'good enough' for the PSM.

ii) Other data sets (livelihoods and food security data) were found to be available and sufficiently suitable for identification of locations

iii) Successfully carry out the PSM.

iv) Successfully identify matching: WFPSMP-Controls and WFSMP - HGSMP Schools.

Overall evaluation design

A pretest posttest quasi-experimental design was set up to measure both the difference before and after the intervention in the treatment groups, and also the difference between control and treatment. The study quasi-experimental design thus compares three groups:

- WFPSMP: Selected schools located in counties where WFPSMP under the USDA – MGD funding is to be implemented (the intervention schools).
- HGSMP: Selected schools located in counties where WFPSMP was being implemented but now transitioning to HGSMP.
- Control: Selected schools located in counties where neither WFPSMP nor HGSMP is to be implemented.

Research question and hypotheses

The Research question and testable hypotheses that underpin the quasi –experimental design will allow WFP, USDA and its partners to establish examine whether the baseline, mid-term and end-term primary education outcomes (literacy and numeracy levels) and other educational indicators (enrolment, attendance, completion, parental involvement, etc.) in the arid and semi-arid lands (ASAL) areas of Kenya are the same in schools included in WFP/USDA-MGD school meals programme (2016 -2020) as those not included (controls and those transitioning to HGSMP).Four different hypotheses were formulated and proposed for testing at Mid-term and End term evaluation for each indicator:

Indicator 1:

- **H0**: Enrolment in schools included in WFP/USDA-MGD SMP ≠ Enrolment in schools not included in WFP/USDA-MGD SMP
- **H1:** Enrolment in schools included in WFP/USDA-MGD SMP= Enrolment in schools not included in WFP/USDA-MGD SMP

Indicator 2:

- **H0:** Attendance rate in schools included in WFP/USDA-MGD SMP≠ Attendance rate in schools not included in WFP/USDA-MGD SMP
- **H1:** Attendance rate in schools included in WFP/USDA-MGD SMP = Attendance rate in schools not included in WFP/USDA-MGD SMP

Indicator 3:

- **H0:** Primary school completion rate in schools included in WFP/USDA-MGD SMP ≠ Primary school completion rate in schools not included in WFP/USDA-MGD SMP
- **H1:** Primary school completion rate in schools included in WFP/USDA-MGD SMP = Primary school completion rate in schools not included in WFP/USDA-MGD SMP

Indicator 4:

- **H0:** Literacy/numeracy rate in schools included in WFP/USDA-MGD SMP ≠ Literacy/numeracy rate in schools not included in WFP/USDA-MGD SMP
- **H1:** Literacy/numeracy rate in schools included in WFP/USDA-MGD SMP = Literacy/numeracy rate in schools not included in WFP/USDA-MGD SMP

Sampling

Since the WFPSMP will run in all schools located within six selected ASAL counties (Baringo, Garissa, Turkana, Mandera, West Pokot, and Wajir)26, control schools were

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[26] Isiolo, Nairobi, Samburu, and Tana River which were targeted under the previous phases of the USDA support will not be included. These counties were excluded from the HGSMP group for the following reasons. Nairobi was excluded because of urban context issues. The majority of the counties of focus are in the Arid, rural areas, consequently, there were hardly any common contextual similarities that will match Nairobi with them. The other three have been beneficiaries of the Cash Transfers to schools Model developed and implemented by WFP before being handed over to HGSMP – consequently their evolution modality and short history of the same does not approximate to a pure HGSMP modality of government that has been going on in some of the counties selected since 2009.

selected from the neighboring areas (either within the same county or in a neighboring county (in a manner that matched as closely as possible the socio-economic activities - livelihood zones - to ensure similarity in terms of vulnerability and food insecurity). Similarly, the HGSMP schools were selected from the neighboring areas with comparable socio-economic activities. Selected control and HGSMP schools were matched against WFPSMP schools.

Group comparison based on schools: Prior to data collection propensity score matching (PSM) was used to compare and match schools using selected school characteristics derived from Education Management Information System (EMIS) tool. Selection of matching characteristics was based on theoretical background knowledge[27] of confounders of the measurement indicator(s). The matching characteristics were selected to be unrelated (unaffected) by the proposed intervention (WFPSMP or HGSMP). Propensity scores were constructed using the 'participation equation', derived from a logit regression[28] with programme participation as the dependent variable coded as follows:

- WFPSMP school = 1, versus Control school = 0, and
- HGSMP school = 1, versus WFPSMP school = 0.

Each school belonging to one of the intervention groups was matched to one school of the control group by matching each to their 'nearest neighbor' using propensity score. Characteristics that were used in matching included: boy: girl ratio, average pupils/class, pupils: teacher ratio, residence type (rural/urban). This data was taken from the Ministry of Education EMIS data set.

Schools in the first group with a propensity score lower than the lowest observed value in the second group were discarded. Similarly, schools in the second group with a propensity score higher than the highest observed value in the first group were also discarded. The same approach was used for the control group. The remaining schools were in the region of common support from which participating schools were selected. This process resulted in the identification of three groups of schools that were as similar as possible from the perspective of livelihoods and socio-economic characteristics.

The original design in the IR anticipated a matching of 30*30*30 for the three groups of schools where these schools would all overlap. The data collected allowed for the

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[27] Theoretical background knowledge refers to knowledge about factors that are plausible or known to confound the relationship between the outcome(s) and the intervention. They are potential or are confirmed to be independently related to the outcome(s).

[28] A Logistic **regression** is a statistical method for analyzing a dataset in which there are one or more independent variables that determine an outcome. The outcome is measured with a dichotomous variable (in which there are only two possible outcomes).

matching of 23 schools from each set where 23 WFPSMP schools were matched with 23 control schools, and 23 HGSMP schools were matched to 23 WFPSMP schools.
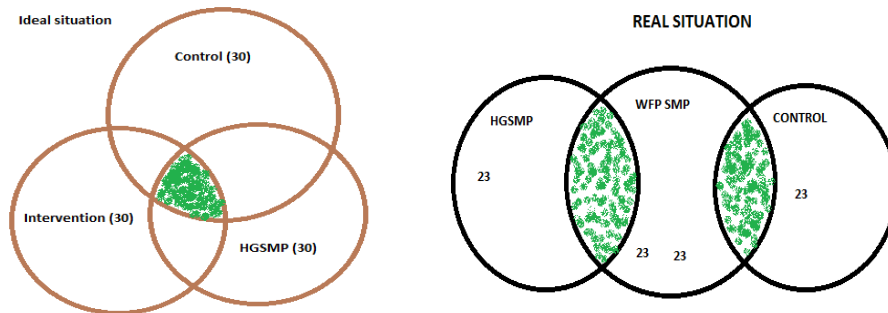
In this manner, the study obtained: 23 WFPSMP matched with 23 control schools and 23 HGSMP matched with 23 WFPSMP schools. While this is different from the design it had no implications for the study as such as the comparison between WFPSMP and HGSMP was not part of the initial design.

Group comparison based on children: This process took place after data collection where propensity score matching was done to ensure comparability of pupils (between the groups) using selected characteristics captured during data collection, therefore reducing selection bias (the possibility that those enrolled in a particular group are systematically different from those enrolled in another group). The matching characteristics were those that are unaffected by the intervention (WFPSMP or HGSMP). Like in school comparison, each member of a specific group was matched to one member of the comparison group by matching each to their 'nearest neighbor' using propensity score. Baseline data was used for calculating propensity scores. The propensity score constructed using children characteristics was used as a weighting factor to balance the groups during analysis. The same technique will apply at mid-term and final evaluation using the same characteristics.

Sample size

The results conceptual framework for the MGD intervention envisages realization of two results as follows:

3. Results framework #1: *MGD Strategic Objective (SO)1 Improved Literacy of School-Age Children.*
4. Results framework #2: *MGD SO2 Increased Use of Health and Dietary Practices.*

Since MGD SO2 is a function of MGD SO1, the sample size was calculated based on MGD SO1. The baseline estimate aligned to MGD SO1 was interpreted to be the proportion of children ages 7-13 that have attained literacy and numeracy at Standard 2 level.

UWEZO[29] Kenya's Sixth Learning Assessment Report December 2016, suggested that the learning outcome by selected counties on Class 3 who can do Class 2/Standard 2 level work showed a substantial degree of variance.[30]

Due to variation in baseline estimate across selected counties and with potential variation in other measurement indicators, this study design decided to use a 50% conservative estimate as the proportion of *children ages 7-13 that have attained literacy and numeracy of a Standard 2 level-* Standard 2 competencies in literacy and numeracy. The proportion optimized the sample size to allow for estimation of all indicators devoid of the risk of low sample size calculation. The study presumed a 20% effect size on the primary indicator.

The minimum sample size was calculated using *Fleiss, et al* (15) formula as follows:

$$n = D * \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 * (P_1(1-P_1) + P_2(1-P_2))}{(P_2 - P_1)^2}$$

Where;

Performance indicators presented as percentages (P_1, P_2)

P_1	(estimated value of indicators at baseline)	50%
P_2	(estimated value of indicators at final evaluation)	70%
P_2-P_1	(estimated change over time)	20%
α	(Type 1 error)	0.05
β	(Type 2 error)	0.10
Z_α	(Z score at desired statistical significance) 0.975	1.96
Z_β	(Z score at desired statistical power) 0.90	1.28
D (design effect = 1 + δ (m − 1); where m is the average enrolment per school (200) and δ is the estimated intra-class correlation coefficient, referenced from literature (0.02))		5.0
		620

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[29] Uwezo is a five-year initiative that aims to improve competencies in literacy and numeracy among children aged 6-16 years old in Kenya, Tanzania and Uganda, by using an innovative approach to social change that is citizen driven and accountable to the public.

[30] The proportions in the proposed intervention areas ranged as follows; Wajir – 9.9%, Mandera – 10.1%, Turkana – 11.4%, Garissa – 12.9%, West Pokot – 15.4%, and Baringo – 16.6%.

The sample size (n) of measurement unit - number of sampled *children ages 7-13 in Standard 3 to 8*

Allowing for 10% non-response, the sample size is adjusted upwards (n/ (1-L) where L is the provision of 10% non-response).

Adjusted sample size = 620/ (1-0.1) = 688.88889, rounded upwards to 689 children.

Therefore; number of sampled children per study arm (without replacement)   689

Overall sample size in both intervention and control arms   2,067

In order to address gender mainstreaming and women's empowerment as per WFP's evaluation principle of gender equality, the evaluation will be conducted with a view to elucidating the effect of the intervention (WFPSMP or HGSMP) among boys and girls. To the greatest extent possible, the consultants will ensure both men and women are targeted as respondents. Therefore, the overall sample size in both interventions (WFPSMP and HGSMP) and control arms will triple to 4,134 (2067 boys (689 HGSMP, 689 WFPSMP, 689 Controls); 2,067 girls (689 HGSMP, 689 WFPSMP, and 689 Control). As each pupil questionnaire also includes questions for a corresponding parent (see Annex 4), there will be an equal number of parental responses. Care will be taken to have at least 40 percent female parents participating in the study.

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Sample procedure

A two-stage sampling procedure was employed at the WFPSMP sites and was set up as follows.

First stage: involved selection of 30 primary sampling units (PSUs) i.e. schools, across

the six selected counties (Baringo, Garissa, Turkana, Mandera, West Pokot, and Wajir).[31] Using probability proportionate to size (PPS) method, the 30 PSUs were distributed across the six counties. Selection of schools within counties was done using simple random sampling, with application of a random number generator.

Second stage: involved the selection of secondary sampling units (SSUs) which were *children ages 7-13 years in class 3 to 8,* across the thirty selected schools. Distribution of school specific sample size allocation was done across gender and school grade using PPS, where gender specific samples across school grade were drawn. Selection of children within gender and across school grade was done using simple random sampling, with application of a random number generator.

Data collection

a) Desk research

The desk research consisted of two sets of work: a documentation review, supplemented by key informant interviews. Key informant (KI) interviews used semi-structured guidelines to collect information on the key roles of the various stakeholders in the intervention, their views on the policy, institutional and operational context, and their views regarding how it could be improved further, lessons learned and the potential for sustainability of the school feeding programme going forward. The respondents included a selection of WFP staff, implementing partners, donors, and education officials. The key informant interviews were done after the data collection in the schools. The second part of the desk research used secondary data sets from WFP and the Ministry of Education to establish the baseline for key indicators in the monitoring framework for which primary data was not collected.

b) Tool development, and School Level Data Collection

The tools that were developed and used in the English Language. The team used real time digital data collection for four of the instruments. This was supplemented by manual data registration and audio recording for the focus group discussion in schools. A Global Positioning System (GPS) picking capability was integrated into the mobile/electronic version of the data collection script. This allowed for the tracking of interviewers to ensure that data collection was indeed carried out at the sampled sites. Teams of enumerators were gender balanced to ensure that interviews with girl pupils could be done by female enumerators to the extent possible. Each team of enumerators was headed by a supervisor. In addition to overseeing the data collection process and quality assurance the supervisors also provided technical guidance to the teams and did any trouble shooting on technology. Selection of

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[31] Isiolo, Nairobi, Samburu, and Tana River counties were excluded from the HGSMP group for the following reasons. Nairobi was excluded because of urban context issues. The majority of the counties of focus are in the arid, rural areas, consequently, there were hardly any common contextual similarities that will match Nairobi with them. The other three have been beneficiaries of the Cash Transfers to schools Model developed and implemented by WFP before being handed over to HGSMP – consequently their evolution modality and short history of the same does not approximate to a pure HGSMP modality of government that has been going on in some of the counties selected since 2009.

Data collection was done by a total of 88 enumerators. Enumerator training was done by the evaluation team to ensure independence and took place over a period of five days. Training included rigorous pre-testing of tools in the field, allowing for the tools to be revised prior to use. Enumerators were selected using detailed criteria established at the inception phase (see IR), were from the regions covered by the study and had the capacity to translate each item into Kiswahili and the local language. A debriefing took place after each day of field data collection. In addition, the consultant team was mobilized and carried out data collection spot-checks in all school during the two-week data collection process.

The key respondents at the school level were the head teacher, selected class teachers, learners (grade 3-8) and their parents, cooks, and representatives of the Parent Teacher Associations (PTA) and the School Board of Management (BOM). These were selected as follows:

- The head teacher was automatic selection
- A school committee members were identified based on the lists of members at the schools and was preferably the chairperson and a PTA representative available in the school.
- Pupils were selected from each class. The number of –girls and boys was pegged on attendance on that day.
- A sample of parents per school – Equal numbers of male and female parents were selected for each school to correspond to the selected pupils. There was one parent for each child.
- A cook and a store keeper was selected automatically in the schools where they are available. Both male and female cooks were covered.

The following tools were used for primary data collection:

a. A School Audit tool - Focused on establishing a baseline of the conditions in the school with respect to facilities including kitchens, water supply, latrines and school gardens.

b. A parent-pupil data collection tool for grades 3 to 8 – was one continuous tool responded to first by the parent of the child and then by the child itself (without the parent present. The tool examined parents' awareness of the value of education, and views on the barriers to enrolment, participation and learning, situation at home in terms of asset ownership (productive and non-productive), agricultural land holding and land tenure system, issues of food security, nutrition, siblings and whether these go to school, and hygiene. From the pupil's perspective, the tool examined issues affecting enrolment, attendance, attentiveness, the importance of education, knowledge of nutrition and hygiene, and importantly also included the UWEZO a numeracy and literacy test. focusing on literacy and health and nutrition.

c. A head teacher data collection tool - covered the head teacher perspectives on enrolment, attendance, retention and learning achievement., challenges and barriers in school access, to materials, and supplies; priority materials for teaching and learning to improve literacy and numeracy. The items included assessing gaps in skills and knowledge of school administration; as well as

support to the school feeding programme.

d. A data collection tool for class teachers focusing on teachers in grades 3 to 8 - focused on issues affecting enrolment, attendance and educational achievement. It covered issues of teacher attendance, and hygiene and nutrition. The tool also served to identify the percentage of learners that are inattentive on a given day (using a spectrum from attentive – to inattentive) and to probe the reasons for this.

e. A focus group discussion (FGD) guideline for a focus group with the PTA, including parents, and teachers – This served to gain in-depth insight into the perception of teachers, parents and PTA members of the issues behind poor enrolment, attendance and retention. It also explored the role of school feeding and other measures which may impact on performance of pupils.

f. A FGD guideline for a focus group with pupils – served to gain insights into learner perspectives on enrolment, attendance and retention and explore views on the role of school feeding and other measures which may impact on performance of pupils.

Ethical considerations in the study

- Enumerator training included a substantial training on the ethical considerations for conducting surveys in schools, in particular with the pupils.
- A courtesy call was made to the county district education official before starting the activity
- The head teacher consented to the study before any activity was undertaken in the school
- The teachers introduced the enumerators to the class to explain the purpose of the exercise.
- Participation was voluntary and all participants were told that they could opt not to participate and could discontinue the interview at any time without any repercussions. All participants were thanked at the end of the data collection.
- Consent was sought from teachers, pupils and parents. Parents were interviewed prior to the interviews of their respective children so that consent could be sought for the interviews with the children.
- All responses were coded and the individual performance of students was not traceable to the student or shared with the participants.

Data analysis

Data analysis was done using IBM SPSS version 24.0. MS-Excel was used to generate graphical presentation of specific findings.

Univariate analysis: Descriptive statistics such as measures of central tendency (mean, standard deviations) were used for analysis of continuous variables, while frequencies and percentages were used for categorical variables.

Bivariate analysis: Pearson's Chi-square or Fisher Exact test was used to compare the

distribution of indicator variables and other observable characteristics between interventions and control groups. T-test were used to compare mean difference between interventions and control groups. Where normality assumptions were violated, appropriate non-parametric methods were used.

Multiple regression analysis: Binary logistic regression was used to estimate the difference in *the proportion of children ages 7-13 that have attained literacy and numeracy for a Standard 2 level* adjusting for baseline characteristics, identified to be significantly different between interventions and control groups at bivariate analysis. Threshold for statistical significance was set at $p < 0.05$.

Estimation of programme effects: The programme effect will be measured at midterm and final evaluations. Difference-in-differences (DID), also known as the 'double difference' method, will be used to compare changes in outcome (effect size) *over time* between specific intervention (HGSMP and WFPSMP) and control group. Applying the DID method removed the difference in the outcome between both interventions (HGSMP and WFPSMP) and control group at baseline.

Effect of WFPSMP: To identify the effects of WFPSMP at midterm and final evaluation, the difference in the measurement indicator between WFPSMP and control groups will first be calculated at baseline, midterm and final evaluation. The calculated baseline difference will then be differenced from the midterm and final evaluation differences to ascertain the accurate difference attributable to the WFPSMP at midterm and final evaluation.

Evaluating sustainability of SMP: To determine whether transitioning schools from WFPSMP to HGSMP sustains school performance, the comparison of HGSMP and WFPSMP was done. The indicators were measured and compared at baseline, and this will also be done at midterm and final evaluation. Owing to its rigorous programme implementation, the bench mark will be WFPSMP.

Propensity score matching was used in adjusting for differences in distribution of characteristics at baseline. A similar approach will be used during midterm and final evaluation.

Strengths and limitations of propensity score match in the study

The PSM was able to balance between the treatments (WFPSMP and HGSMP) and control on several identified covariates without losing observations however, none observed factors that affected assignment to either treatment or control could not be accounted for.

Annex 3 – Overview of coordination mechanisms for school feeding in Kenya
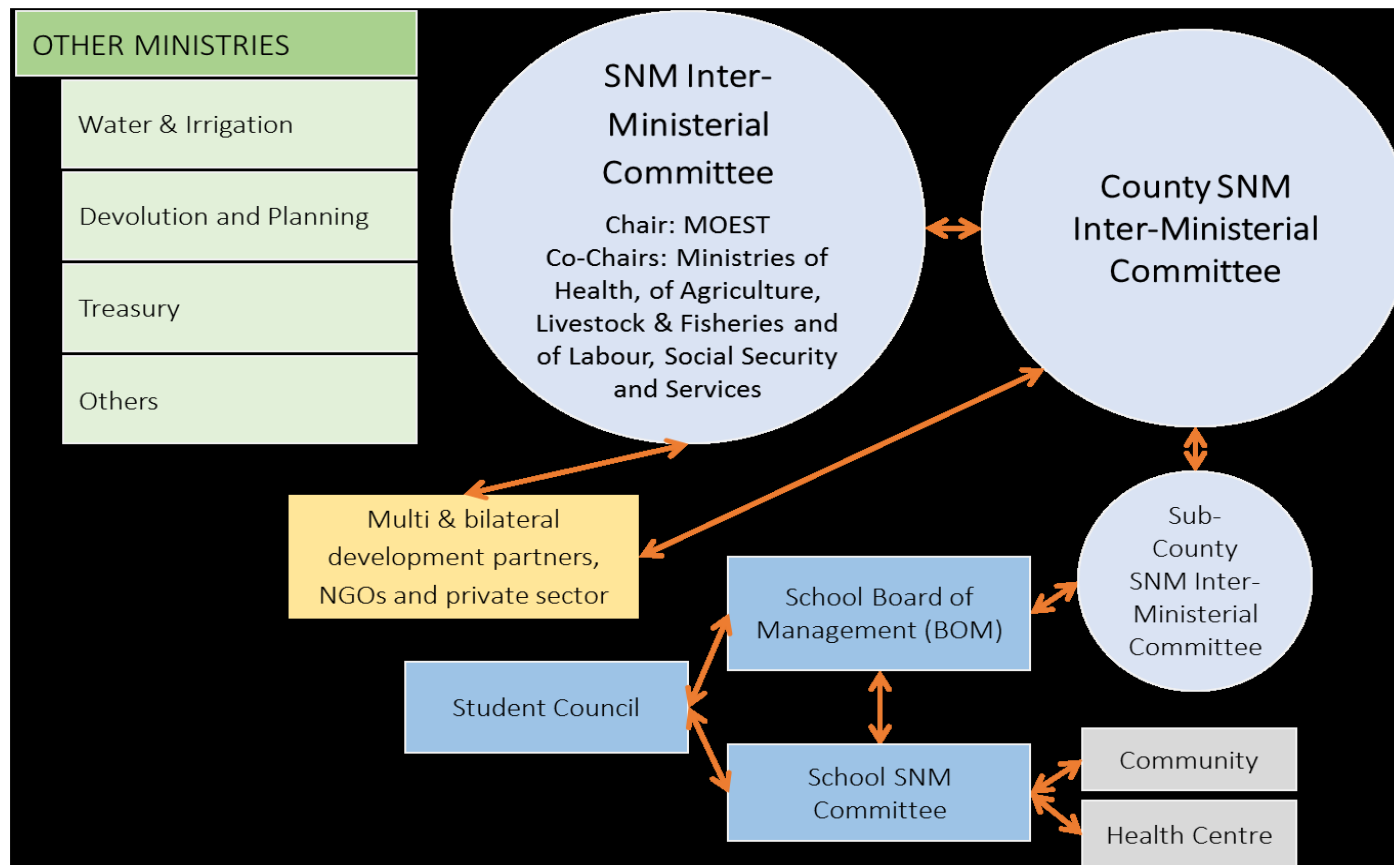
Source: Republic of Kenya (MOE, MoH, MoAL &F) School Nutrition and Meals Strategy for Kenya (Draft 2016) pg. 40

Annex 4 - National level key informant interviewees

Lara Fossi - Head of Capacity Strengthening Unit, World Food Programme, Nairobi

Kennedy Gitonga - USDA Kenya

Tracy Johnson - USDA Washington

Charles Njeru - Programme Policy officer (School feeding), World Food Programme Nairobi (partial interview only)

Niru Pradhan - USDA Washington

Boniface Ouko - Ministry of Education Science and Technology

Paul Mwongera – Ministry of Education Science and Technology – School Meals Unit.

Annex 5 – Types of school feeding in Kenya and overview of key coordination structures and stakeholders

1. This annex provides additional background information to supplement the baseline of the institutional context for school feeding.

Different school meals initiatives in Kenya - overview

2. There are several types of school feeding programmes operational in Kenya born out of innovations that seek to localize and contextualize the school meals programmes to enhance their effectiveness and sustainability. These include:

The WFPSMP Regular School Meals Programme (SMP)

3. WFP and the Ministry of Education in Kenya have since the 1980s been jointly implementing schools meals programme targeting the mostly food insecure counties. The target counties are characterized by low school enrolment and completion rates and high gender disparities. Consequently, the Regular programme involves the physical distribution of food commodities to schools; the bulk of the food is imported though there are certain cases when food is procured locally especially cereals. It is implemented with support of World Food Programme (WFP). This final phase will entail providing hot lunch to 358,000 learners in 6 arid counties in the country; and, supporting the hand over process to government through training, joint missions and exchange of staff to build national capacity in procurement, data collection, reporting, monitoring, evaluation and programme management. After over three decades of collaboration and programming for school meals programme between WFP and the Ministry of Education, transition to the government run school meals programme is due for completion in 2019.

Home Grown School Meals Programme:

4. To ensure long term sustainability of the School Meals Programme there was need to move from donor supported school meals programmes to a nationally supported programme. Therefore, the idea of a Home Grown School Meals (HGSMP) was conceived in 2009 as a government led programme. It was subsequently agreed that 50,000 pupils will be offloaded annually from the Regular SMP to the Home Grown SMP as part of the transition arrangement. It entails cash transfers by government to schools. The amount of money disbursed depends on the school enrolment and funds available. Disbursement is done as per the number of learning days in a term. The programme started off with a beneficiary level of 538,000 children in 1,777 schools in 66 semi-arid districts. By 2011 it had reached a beneficiary level of 592,638 children in approximately 1,800 schools in 72 semi-arid districts. By 2016, 950,000 children had been transitioned to this programme. Going forward, the programme has been working at strengthening links with smallholder farmers to enhance local agricultural production so more food for the meals can be purchased locally. This is key to the scale up and sustainability of the initiative. The initiative represents multi sectoral understanding and support that brings together various government ministries

(Education, health, water and irrigation etc.) development partners and other key stakeholders. The Government of Kenya is demonstrating leadership in this initiative regionally. However, a key concern that was raised from the qualitative data is that, that actual implementation of HGSMP is limited by resources and that there has not been a commensurate scale up of financial resources to match the growing number of pupils. As a result, in 2016 school feeding was only provided on 70 days out of 190(37% of the school days) compromising the quality of programme and a worsening situation since, the HGSMP review of 2012 had found that during the programme's first three years (2009-2012), school meals had only been provided on about 54 percent of school days.

"Njaa Marufuku Kenya" (Eradication of Hunger in Kenya):

5. This was an initiative of the Ministry of Agriculture that was started in 2005 targeting areas of high poverty that have high and medium potential to grow food yet have high levels of school dropouts, poor primary performance and high levels of malnutrition. It is one of the HGSMP models which attempts to achieve the dual objectives of increasing national food production and ensuring children go to school. By 2012 it was targeting 44, 229 children in 66 schools across the country.

Cash Transfers to schools:

6. This was an innovation in the long-established WFP school meals programme in Kenya. The objective of the cash transfer programme was to improve the educational attainment of school children in the most disadvantaged arid areas of the country while paving the way for more appropriate and accountable government owned school meals model for these northern counties. The process of transitioning the schools in the Arid Counties from WFP support is challenging. This is due to poor infrastructure, remoteness, vast terrain and lower agricultural potential that translates into volatile and elevated food prices. The transition strategy for the arid counties from WFP support to HGSMP therefore:

    o Calls for the need to draw lessons from the HGSMP in the Semi-arid counties and identifying strategies for enhancing and adopting the programme design and implementation processes in the arid areas.

    o Should tap into the WFP/GoK developed strategy that seeks to inform the sustainable expansion of the HGSMP into the arid lands.

7. In actualizing the latter, the transitional cash to schools model was piloted in Isiolo County, expanded into Samburu, Tana River and Marsabit as a means towards ensuring suppliers and the community are prepared for their roles in the programme. The pilot and expansion process entailed building the capacity of farmers and traders in the HGSMP so they could increasingly sell food to schools and other institutional markets. The approach defined a clear exit strategy that could enhance the sustainability of the HGSMP through cash transfers to schools. However, the qualitative data from KIIs indicate that the programme in the Arid counties that have since been transitioned to government are beleaguered by budgetary constraints (insufficient funds) on one hand and late disbursements of even the little that is available. Are there lessons to be learnt about transitioning arid lands to HGSMP that this phase of WFP/USDA/MGD could draw on as it seeks to transition 6 arid counties

at ago? Has a clear exit strategy that will ensure sustainability been clearly thought through and laid out?

Community supported initiatives

8. There are other school meals initiatives undertaken by communities and school authorities without the support of county or national government. These initiatives are not regular. They only take place when there is a good harvest. The salient characteristics of these ad hoc school meals initiatives include the fact that; parents contribute money for school meals as part of the school fees per 3-month school term or with cash or food donations in kind; the menu is in most cases boiled maize and beans; and, School Meals Committees buy the food and make arrangements for cooking and serving to students. Some support is received from private and non-profit sectors.

Complementary Initiatives:

9. a) School Deworming Initiatives: Over 5 million school-age children in Kenya are at risk of intestinal parasitic worms, including soil-transmitted helminthes (STH) and schistosomiases. It is in view of the negative impact such worms would have on the children's health and education that the Government of Kenya launched the National School Based Deworming Programme(NSBDP) in 2009, upon which 3.6 million children were dewormed. The programme is implemented by the Ministry of Education Science and Technology (MOE) in collaboration with the Ministry of Health (MoH) with technical assistance from the Deworm the World Initiative (DtWI) at Evidence Action. The goal of the programme is to eradicate parasitic worms as a public health problem in Kenya. It seeks to treat at least 5 million Kenyan children each year for at least five years (2012-2016) in all primary schools in areas endemic for parasitic worms according to WHO criteria. The programme is complementary to the school meals in that it seeks to improve the health and education status of children and secure Kenya's future. It has since been proven that regularly providing deworming tablets to children through schools is a cost-effective treatment strategy that is readily available and sustained educational infrastructure. In view of this, WHO has certified the safety of the administration of deworming tablets by teachers with support from the local health personnel. The key elements of the programme's success include facilitating teacher trainings, distributing deworming tablets to schools, managing community sensitization activities and monitoring deworming activities. So far, the initiative has proven that deworming programmes reduce school absenteeism and it is cheaper than other ways of increasing school participation.

10. b) Nutrition interventions: Malnutrition is a significant health problem in Kenya. Micronutrient deficiencies are widespread and are exacerbated by low consumption of vitamin A- and iron-rich foods. Today in Kenya, an estimated 2.1 million children are stunted which is a serious national development concern as these children will never reach their full physical and mental potential. Regional disparities in nutrition indicators in Kenya are significant with North Eastern province having the highest proportion of children exhibiting severe wasting (8%) while Eastern province has highest level of stunted children (44%). Consequently, Kenya made a commitment to accelerate reduction of malnutrition by signing up to the global SUN movement in November 2012 as the 30th country member. Scaling Up Nutrition (SUN) is a unique

movement founded on the principle that all people have a right to food and good nutrition. It unites people from governments, civil society, the United Nations, donors, businesses & researchers in a collective effort to improve nutrition. As a consequent of research evidence and such initiatives, the statistics on the nutrition situation in Kenya caught the attention of local manufacturing companies who started drafting strategies towards contributing to the health sector through food fortification. Mumias Sugar Company, Unga limited, Tetrapak, the GAIN initiative among others led the way towards fortifying their products – sugar, flour and milk with requisite micronutrients. To further enhance commitment in this area, on 27 April 2017, the Government of Kenya unveiled a new 6-year partnership between the Ministry of Health and Jomo Kenyatta University of Agriculture and Technology (JKUAT) as well as private sector partners to strengthen and address gaps in food fortification. The project, funded by the European Union, focuses on improving the capacity of manufacturers to fortify maize flour and other staples consumed by poor households where the levels of malnutrition are higher.

b)   The School Meals Program Governance and Operational Framework.

11. Effective implementation of the school meals programmes including achievement of goals and objectives requires broad-based multi-sectoral coordination. There is need for strong governance and institutional arrangements anchored in clearly share responsibilities and accountability protocols. The Kenyan institutional framework for such coordination and management is shown in the chart below.

12. Table 5 outlines the shared responsibilities for the implementation of the school meals initiatives across ministries and non–governmental stakeholders. The need for an effective coordination mechanism across all actors involved in the programme cannot be emphasized enough. Located at different levels in the structure they are critical in the effective implementation of the SNM programmes under different modalities, monitoring and of improvement in strategy. The qualitative data, confirmed the need for a national steering committee that brings together the key stakeholders and provides a stronger anchoring and coordination role at national level.

Governance and Coordination Institutions and structures

Structure	Role
Governance Structures	
National Committee	• Development of mechanisms to coordinate with the rest of government fora on school meals.
School Nutrition and meals coordination unit at MOE	• Convening and promoting Inter-Ministerial and Inter agency dialogue including information sharing. • Sectoral planning and budgeting • Hosting on-going capacity building and leadership nurturing activities for

	effective implementation and monitoring of school meals strategy.
School Nutrition and Meals committee	• Coordinating discussions of the SNMP implementation issues that bring together various ministries – MOE, MoH, Treasury etc.
County Level Committees	• Defining County level implementation strategy including roles to be played by school level committees • Budgeting at County level- actualization of decentralization/devolution
School Meals programme Committee	• A structure that is so critical for the implementation of the programme at the school level – it should be established at every school constituting of a chair, procurement supervisor, food quality supervisor and reporting supervisor (could be expanded based on need.
Roles and Responsibilities of Institutions involved in programme Governance	
National Government (MOE)	• Coordination and oversight of school meals interventions country wide • Integration and building of linkages with other ministries • Policy guidance and guidelines for implementation • capacity building opportunities • Promotion and enabling of participation by counties and other stakeholders **in the development of policies and procedures.**
Agricultural Sector (MoA)	• Developing capacities for increased production and access to markets by smallholder farmers
Health Sector (MoH)	• Contribute nutritionists' expertise to guide menu preparation that informs purchases • Ensure food quality at delivery and monitoring during storage • Training implementers in the SNMP food chain.
NGO community	• Implementing Initiatives at community level- school gardens etc.

	• Providing voice for the un-empowered on rights and interests of the disadvantaged (children, women and smallholder farmers). • Credit provision • Building skills among smallholder farmers • Establishment of cooperatives and other farmer based organizations.
Private Sector	• Creating income earning opportunities in agricultural and nonagricultural sectors. • Encouraging agricultural commercialization and agro- business • Promoting new farming practices through research.
Academic and Research Institutions	• Providing evidence for policy and programme improvement.
Development Partners	• Support – funding and technical to SNMP initiatives through working closely with governments, civil society and communities.
County Governments	• Extending participation in SNMP beyond ECD.
Sub- County level	• Implementation of SNMP interventions with oversight by the county level.
Local Committees	• Their roles are dependent on the prevailing contexts which maybe different county to county.

Funding to the WFP SMP between 2014 and 2017

Donor	SMP Contribution Summary (USD)				
	2014	2015	2016	2017	TOTAL
Australia	1314259	657 613	376 223	220 700	2 568 795
Canada	5 433 472	5 507 474	-	-	10 940 946
Russia	1 000 000	2 000 000	-	-	3 000 000
USDA - McGovern Dole	8 233 459	3 639 100	9 182 400	8 977 630	30 032 589
Germany BMZ	-	-	1 003 344	1706485	2 709 829
Japan MOFA	-	-	2 698 535		2 698 535
EU DEVCO	-	-	-	450 000	450 000
USDA - LRP	-	-	-	500 000	500 000
Private Donors					
France - Godeed Association	14 946	-	-	-	14 946
Netherlands - Unilever	458 989	381727	380307	315000	1536032
Belgium - Mastercard	-	404 764	264 763	-	669 527
Kenya		701			
Canada - Earth Holdings	-	-	62 500	-	62 500
USA - FEED, Intl Paper, Cargill	186 610	1 575 141	491 310	321 513	2 574 574
	-	-	-	-	-
		-	-	-	-
TOTAL	16 641 735	14 166 520	14 459 382	12 176 328	57 758 273

(Source: WFP data provided to the Evaluation Team)

Annex 6: Summary of Baseline Indicator Values

Table 6a - Summary of baseline values for WFPSMP

Result	Indicator	WFPSMP Schools
Improved Literacy of School-Age Children	Proportion of 7-13 year olds that can solve Class 2 numeracy and literacy problems	English: 42.8% Kiswahili: 52.35% Numeric: 60.5%
	Number of individuals benefiting directly from USDA-funded interventions	0
	Number of individuals benefiting indirectly from USDA-funded interventions	0
	Number of social assistance beneficiaries participating in productive safety nets as a result of USDA assistance	0
Increased access to food (school feeding)	Number of daily school meals (breakfast, snack, lunch) provided to school-age children as a result of USDA assistance	0
	Number of school-aged children receiving daily school meals (breakfast, snack, lunch) as a result of USDA assistance	0
	Percent of students in target schools who regularly consume a meal before the school day	• Daily before going to school (last 1 week): 35.8% • Had a meal on interview day before going to school: 59.75
	Percent of students in target schools who regularly consume a meal during the school day	• Has been receiving school meals in the current school year

Result	Indicator	WFPSMP Schools
		(2017): 57.45% • The school in which the child was learning at currently (same week) serving food: 47.8%
Improved student attendance	Number of students regularly (80%) attending USD supported classrooms/schools	252,906[32]
Improved Attentiveness	Percent of students in classrooms identified as inattentive by their teachers	39.25%
Increased Community Understanding of Benefits of Education	Percent of parents in target communities who can name at least three benefits of primary education (Disaggregated Male and Female)	57.3%
Increased Capacity of Government Institutions	Number of county-level inter-ministerial committees for HGSMP established	0
	Number of national-level inter-ministerial coordination committees for HGSMP established	0
Increased Government Support	Number of Parent-Teacher Associations (PTAs) or similar "school" governance structures supported as a result of USDA assistance	0
	Number of public-private partnerships formed as a result of USDA assistance	0

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[32] This is based on the actual number of students enrolled in the school receiving USDA assistance and an 85% regular attendance rate from the WFP SMP schools sampled during the study.

Result	Indicator	WFPSMP Schools
	Number of school administrators and officials in target schools who demonstrate use of new techniques or tools as a results of USDA assistance	0
	Number of school administrators and officials trained or certified as a result of USDA assistance	0
	Value of new public and private sector investments leveraged as a result of USDA assistance	0
Improved Policy and Regulatory Framework	Number of child health and nutrition policies, regulations, and/or administrative procedures in each of the following stages of development as a result of USDA assistance (Stage 5)	0
	Number of educational policies, regulations, and/or administrative procedures in each of the following stages of development as a result of USDA assistance (Stage 5)	0
Increased Use of Health and Dietary Practices	Percent of schools in target counties that store food off the ground	50.0%
Increased Knowledge of Safe Food Prep and Storage Practices	Percent of food preparers at target schools who achieve a passing score on a test of safe food preparation and storage	33.7%
Increased knowledge of nutrition	Number of individuals trained in child health and nutrition as a result of USDA assistance	0
Improved school infrastructure	Number of educational facilities (e.g. school buildings, classrooms and latrines) rehabilitated and constructed as a result of USDA assistance	0

Result	Indicator	WFPSMP Schools
Increased Student Enrolment	Number of students enrolled in schools receiving USDA assistance	297,536[33]
Increased Access to Requisite Food Prep and Storage Tools	Number of target schools with increased access to improved food prep and storage equipment (kitchens, storerooms, stoves, kitchen utensils)	0

Table 6 b - Summary of baseline values for the Three Arms: WFPSMP, Control and HGSMP Schools

Result	Indicator	Baseline Indicator Value			
		WFPSMP Schools	Control Schools	HGSMP Schools	WFPSMP Schools
Improved Literacy of School-Age Children	Proportion of 7-13 year olds that can solve Class 2 numeracy and literacy problems	English: 40.6% Kiswahili: 51.2% Numeric: 60.9%	English: 55.6% Kiswahili: 66.0% Numeric: 73.5%	English: 64.6% Kiswahili: 74.9% Numeric: 77.7%	English: 45.0% Kiswahili: 53.5% Numeric: 60.1%
	Number of individuals benefiting directly from USDA-funded interventions	0	0	0	353,000
	Number of individuals benefiting indirectly from USDA-funded interventions	0	0	0	0
	Number of social assistance beneficiaries participating in productive safety nets as a result of	0	0	0	0

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[33] This number includes children receiving meals in six arid counties and Marsabit where 44,100 children benefited from nutrition and hygiene related activities. It is important to note that the number of students enrolled in the schools sampled for the survey were 7142 (min=28, max=1524, mean= 317, SD=241)

Result	Indicator	Baseline Indicator Value			
		WFPSMP Schools	**Control Schools**	**HGSMP Schools**	**WFPSMP Schools**
	USDA assistance				
Increased access to food (school feeding)	Number of daily school meals (breakfast, snack, lunch) provided to school-age children as a result of USDA assistance	0	0	0	0
	Number of school-aged children receiving daily school meals (breakfast, snack, lunch) as a result of USDA assistance	0	0	0	0
	Percent of students in target schools who regularly consume a meal before the school day	• Daily before going to school (last 1 week): 33.0% • Had a meal on interview day before going to school: 54.9%	• Daily before going to school (last 1 week): 38.0% • Had a meal on interview day before going to school: 63.6%	• Daily before going to school (last 1 week): 43.2% • Had a meal on interview day before going to school: 67.6%	• Daily before going to school (last 1 week): 38.7% • Had a meal on interview day before going to school: 64.6%
	Percent of students in target schools who regularly consume a meal during the school day	• Has been receiving school meals in the current school year (2017): 59.3% • The school in which the child was learning at	• Has been receiving school meals in the current school year (2017): 20.0% • The school in which the child was learning at	• Has been receiving school meals in the current school year (2017): 80.4% • The school in which the child was learning at	• Has been receiving school meals in the current school year (2017): 55.6% • The school in which the child was learning at

Result	Indicator	Baseline Indicator Value			
		WFPSMP Schools	**Control Schools**	**HGSMP Schools**	**WFPSMP Schools**
		currently (same week) serving food: 51.7%	currently (same week) serving food: 16.3%	currently (same week) serving food: 51.5%	currently (same week) serving food: 43.9%
Improved student attendance	Number of students regularly (80%) attending USDA supported classrooms/schools	252,906	N/A	N/A	252,906
Improved Attentiveness	Percent of students in classrooms identified as inattentive by their teachers	41.1%	46.4%	43.5%	37.4%
Increased Community Understanding of Benefits of Education	Percent of parents in target communities who can name at least three benefits of primary education (Disaggregated Male and Female)	57.3%	26.1%	30.0%	57.3%
Increased Capacity of Government Institutions	Number of county-level inter-ministerial committees for HGSMP established	0	0	0	0
	Number of national-level inter-ministerial coordination committees for HGSMP established	0	0	0	0
Increased Government Support	Number of Parent-Teacher Associations (PTAs) or similar "school" governance structures supported as a result of USDA assistance	0	0	0	0

Result	Indicator	Baseline Indicator Value			
		WFPSMP Schools	**Control Schools**	**HGSMP Schools**	**WFPSMP Schools**
	Number of public-private partnerships formed as a result of USDA assistance	0	0	0	0
	Number of school administrators and officials in target schools who demonstrate use of new techniques or tools as a results of USDA assistance	0	0	0	0
	Number of school administrators and officials trained or certified as a result of USDA assistance	0	0	0	0
	Value of new public and private sector investments leveraged as a result of USDA assistance	0	0	0	0
Improved Policy and Regulatory Framework	Number of child health and nutrition policies, regulations, and/or administrative procedures in each of the following stages of development as a result of USDA assistance (Stage 5)	0	0	0	0
	Number of educational policies, regulations, and/or administrative procedures in each of the following stages of development as a result of USDA assistance (Stage 5)	0	0	0	0
Increased Use of Health and Dietary Practices	Percent of schools in target counties that store food off the ground	56.5%	17.4%	73.9%	43.5%

Result	Indicator	Baseline Indicator Value			
		WFPSMP Schools	**Control Schools**	**HGSMP Schools**	**WFPSMP Schools**
Increased Knowledge of Safe Food Prep and Storage Practices	Percent of food preparers at target schools who achieve a passing score on a test of safe food preparation and storage	33.6%	32.1%	39.7%	33.8%
Increased knowledge of nutrition	Number of individuals trained in child health and nutrition as a result of USDA assistance	0	0	0	0
Improved school infrastructure	Number of educational facilities (e.g. school buildings, classrooms and latrines) rehabilitated and constructed as a result of USDA assistance	0	0	0	0
Increased Student Enrolment	Number of students enrolled in schools receiving USDA assistance	297,536	N/A	N/A	297,536
Increased Access to Requisite Food Prep and Storage Tools	Number of target schools with increased access to improved food prep and storage equipment (kitchens, storerooms, stoves, kitchen utensils)	0	0	0	0

	Boys (n=2558)								Girls (n=2572)					
	Literate (n=1310)		Not literate (n=1248)			95% CI			Literate (n=1382)		Not literate (n=1190)			95%
Variables	n	%	n	%	OR	Lower	Upper	p value	n	%	n	%	OR	Lower
Class of the child														
Third	66	15.1%	372	84.9%	1.00				95	20.7%	364	79.3%	1.00	
Fourth	137	30.9%	306	69.1%	2.52	1.81	3.51	<0.001	146	31.5%	318	68.5%	1.76	1.31
Fifth	217	46.0%	255	54.0%	4.80	3.49	6.59	<0.001	191	44.6%	237	55.4%	3.09	2.30
Sixth	277	60.9%	178	39.1%	8.77	6.35	12.11	<0.001	289	65.8%	150	34.2%	7.38	5.47
Seventh	341	77.1%	101	22.9%	19.03	13.50	26.82	<0.001	363	82.9%	75	17.1%	18.55	13.26
Eighth	272	88.3%	36	11.7%	42.59	27.56	65.80	<0.001	298	86.6%	46	13.4%	24.82	16.91
Mode of travel to school														
On foot	1280	50.9%	1237	49.1%	1.00				1357	53.4%	1184	46.6%	1.00	
Bicycle/car/motor cycle	30	73.2%	11	26.8%	2.64	1.32	5.28	0.006	25	80.6%	6	19.4%	3.64	1.49
Number of times child normally eat per day														
2 times or less	742	47.4%	825	52.6%	1.00				757	47.6%	833	52.4%	1.00	
3 times or more	568	57.3%	423	42.7%	1.49	1.27	1.75	<0.001	625	63.6%	357	36.4%	1.93	1.64
Child had a meal today before going to school														
Yes	897	54%	759	46%	1.40	1.19	1.65	<0.001	915	57%	700	43%	1.37	1.17
No	413	46%	489	54%					467	49%	490	51%		
Child thought it is important to go to school														
Yes	1297	51.8%	1208	48.2%	3.30	1.76	6.21	<0.001	1368	54.2%	1155	45.8%	2.96	1.59
No	13	24.5%	40	75.5%	1.00				14	28.6%	35	71.4%	1.00	
The child brothers and sisters who currently study in this school														
Yes	870	49.3%	895	50.7%	1.00				956	51.8%	890	48.2%	1.00	
No	440	55.5%	353	44.5%	1.28	1.08	1.52	0.004	426	58.7%	300	41.3%	1.32	1.11
The child had brothers and sisters who are old enough to go to school but are NOT currently attending school														
Yes	140	41.1%	201	58.9%	1.00				139	40.9%	201	59.1%	1.00	
No	1170	52.8%	1047	47.2%	1.60	1.27	2.02	<0.001	1243	55.7%	989	44.3%	1.82	1.44

	N	%	N	%	OR	LCI	UCI	p	N	%	N	%	OR	LCI	UCI
Madrasa/Adult learning center	28	50.0%	28	50.0%	1.24	0.72	2.11	0.441	20	43.5%	26	56.5%	1.10	0.60	1
Did not complete primary school	239	48.5%	254	51.5%	1.16	0.94	1.44	0.165	277	54.5%	231	45.5%	1.71	1.38	
Completed primary school	301	60.2%	199	39.8%	1.87	1.51	2.31	<0.001	358	63.3%	208	36.7%	2.45	1.99	
Did not compete secondary	63	56.3%	49	43.8%	1.59	1.07	2.35	0.021	84	66.7%	42	33.3%	2.85	1.93	
Completed secondary school	102	65.0%	55	35.0%	2.29	1.62	3.24	<0.001	134	81.2%	31	18.8%	6.16	4.09	
Technical college/ university	66	67.3%	32	32.7%	2.55	1.64	3.95	<0.001	68	73.9%	24	26.1%	4.04	2.49	
Number of important nutrition habits mentioned by the parent/guardian															
None	311	38.9%	489	61.1%	1.00				359	42.3%	489	57.7%	1.00		
One and above	999	56.8%	759	43.2%	2.07	1.75	2.46	<0.001	1023	59.3%	701	40.7%	1.99	1.68	
Number of hygiene habits mentioned by the parent/guardian															
None	71	33.8%	139	66.2%	1.00				80	35.7%	144	64.3%	1.00		
1 to 2	727	49.6%	739	50.4%	1.93	1.42	2.61	<0.001	808	54.8%	666	45.2%	2.18	1.63	
3 and above	512	58.0%	370	42.0%	2.71	1.98	3.72	<0.001	494	56.5%	380	43.5%	2.34	1.73	

| Variables in the Equation | Boys (n=2558) | | | | Gir | |
	AOR	Lower	Upper	p value	AOR	I
Class of the child						
Class 3	1.00				1.00	
Class 4	2.45	1.74	3.44	**<0.001**	1.71	
Class 5	4.62	3.33	6.41	**<0.001**	2.93	
Class 6	8.36	6.00	11.65	**<0.001**	7.00	
Class 7	18.22	12.77	25.98	**<0.001**	17.31	
Class 8	42.72	27.31	66.82	**<0.001**	24.63	
Mode of travel to school						
On foot	1.00				1.00	
Bicycle/car/motor cycle	2.50	1.13	5.54	**0.024**	3.01	
Number of times child normally eat per day						
2 times or less	1.00				1.00	
3 times or more	1.41	1.15	1.72	**0.001**	1.68	
Child had a meal today before going to school						
Yes	1.24	1.01	1.52	**0.037**	1.12	
No	1.00				1.00	
Child thought it is important to go to school						
Yes	2.21	1.08	4.53	**0.030**	1.65	
No	1.00				1.00	
The child brothers and sisters who currently study in this school						
Yes	1.00				1.00	
No	1.28	1.05	1.57	**0.016**	1.34	
The child had brothers and sisters who are old enough to go to school but are NOT currently attending school						
Yes	1.00				1.00	
No	1.34	1.01	1.76	**0.040**	1.36	
Education level of the respondent						
Never attended school	1.00				1.00	
Madrasa/Adult learning center	1.02	0.54	1.92	0.959	0.91	
Did not complete primary school	1.14	0.88	1.47	0.327	1.37	
Completed primary school	1.81	1.39	2.35	**<0.001**	2.20	
Did not compete secondary	1.65	1.04	2.62	**0.035**	2.36	
Completed secondary school	2.03	1.35	3.05	**0.001**	4.64	
Technical college/ university	1.96	1.18	3.26	**0.010**	2.77	
Number of important nutrition habits mentioned by the parent/guardian						
None	1.00				1.00	
At least 1	1.20	0.96	1.49	0.108	1.34	
Number of hygiene habits mentioned by the parent/guardian						
None	1.00				1.00	
1 to 2	1.43	0.99	2.07	0.058	1.81	
3 or more	1.95	1.31	2.91	**0.001**	1.84	

Variables	Literate (n=1557)		literate (n=1001)			95% CI		p value	Literate (n=1636)		literate (n=936)			
	n	%	n	%	OR	Lower	Upper		n	%	n	%	OR	I
Class of the child														
Class 3	97	22.1%	341	77.9%	1.00				135	29.4%	324	70.6%	1.00	
Class 4	203	45.8%	240	54.2%	2.97	2.22	3.99	<0.001	202	43.5%	262	56.5%	1.85	
Class 5	284	60.2%	188	39.8%	5.31	3.97	7.11	<0.001	258	60.3%	170	39.7%	3.64	
Class 6	329	72.3%	126	27.7%	9.18	6.77	12.45	<0.001	345	78.6%	94	21.4%	8.81	
Class 7	365	82.6%	77	17.4%	16.66	11.94	23.26	<0.001	388	88.6%	50	11.4%	18.62	
Class 8	279	90.6%	29	9.4%	33.82	21.70	52.72	<0.001	308	89.5%	36	10.5%	20.53	
Mode of travel to school														
On foot	1524	60.5%	993	39.5%	1.00				1612	63.5%	929	36.6%	1.00	
Bicycle/car/motor cycle	33	80.5%	8	19.5%	2.69	1.24	5.84	0.013	24	77.4%	7	22.6%	1.97	
Number of times child normally eat per day														
2 times or less	889	56.7%	678	43.3%	1.00				938	59.0%	652	41.0%	1.00	
3 times or more	668	67.4%	323	32.6%	1.58	1.34	1.86	<0.001	698	71.1%	284	28.9%	1.71	
Child had a meal today before going to school														
Yes	1027	62.0%	629	38.0%	1.15	0.97	1.35	0.107	1052	65.1%	563	34.9%	1.19	
No	530	58.8%	372	41.2%	1.00				584	61.0%	373	39.0%	1.00	
The child had brothers and sisters who are old enough to go to school but are NOT currently attending school														
Yes	171	50.1%	170	49.9%	1.00				174	51.2%	166	48.8%	1.00	
No	1386	62.5%	831	37.5%	1.66	1.32	2.09	0.000	1462	65.5%	770	34.5%	1.81	
Education level of the respondent														
Never attended school	614	53.8%	528	46.2%	1.00				544	50.9%	525	49.1%	1.00	
Madrasa/Adult learning center	27	48.2%	29	51.8%	0.80	0.47	1.37	0.417	29	63.0%	17	37.0%	1.65	
Did not complete primary school	306	62.1%	187	37.9%	1.41	1.13	1.75	0.002	342	67.3%	166	32.7%	1.99	
Completed primary school	345	69.0%	155	31.0%	1.91	1.53	2.39	<0.001	408	72.1%	158	27.9%	2.49	
Did not compete secondary	75	67.0%	37	33.0%	1.74	1.16	2.63	0.008	99	78.6%	27	21.4%	3.54	
Completed secondary school	112	71.3%	45	28.7%	2.14	1.49	3.08	<0.001	142	86.1%	23	13.9%	5.96	
Technical college/ university	78	79.6%	20	20.4%	3.35	2.02	5.56	<0.001	72	78.3%	20	21.7%	3.47	
Number of hygiene habits mentioned by the parent/guardian														
None	96	45.7%	114	54.3%	1.00				113	50.4%	111	49.6%	1.00	
1 to 2	891	60.8%	575	39.2%	1.84	1.38	2.46	<0.001	963	65.3%	511	34.7%	1.85	
3 or more	570	64.6%	312	35.4%	2.17	1.60	2.94	<0.001	560	64.1%	314	35.9%	1.75	
Quintiles for Coping Strategy Index (CSI)														
First	605	59.0%	421	41.0%	1.82	1.53	2.17	<0.001	306	56.9%	232	43.1%	1.81	
Second	561	54.7%	465	45.3%	1.53	1.28	1.82	<0.001	271	52.7%	243	47.3%	1.53	
Third	573	55.8%	453	44.2%	1.60	1.34	1.91	<0.001	269	54.6%	224	45.4%	1.65	
Fourth	500	48.7%	526	51.3%	1.20	1.01	1.43	0.038	253	49.4%	259	50.6%	1.34	
Fifth					1.00								1.00	

| | Boys (n=2558) | | | | Gir |
Variables in the Equation	AOR	Lower	Upper	p value	AOR
Class of the child					
Class 3	1.00				1.00
Class 4	2.86	2.11	3.86	**<0.001**	1.82
Class 5	5.11	3.79	6.90	**<0.001**	3.52
Class 6	8.62	6.30	11.80	**<0.001**	8.61
Class 7	16.23	11.50	22.91	**<0.001**	17.23
Class 8	34.29	21.79	53.95	**<0.001**	19.99
Mode of travel to school					
On foot	1.00				1.00
Bicycle/car/motor cycle	2.27	0.96	5.36	0.062	1.49
Number of times child normally eat per day					
2 times or less	1.00				1.00
3 times or more	1.45	1.18	1.77	**<0.001**	1.41
Child had a meal today before going to school					
Yes	1.63	0.86	3.08	0.135	1.66
No	1.00				1.00
The child had brothers and sisters who are old enough to go to school but are NOT currently attending school					
Yes	1.00				1.00
No	1.30	0.99	1.71	**0.058**	1.34
Education level of the respondent					
Never attended school	1.00				1.00
Madrasa/Adult learning center	0.58	0.31	1.09	0.091	1.58
Did not complete primary school	1.28	1.00	1.65	0.053	1.55
Completed primary school	1.70	1.30	2.21	**<0.001**	2.11
Did not compete secondary	1.72	1.07	2.75	**0.025**	3.01
Completed secondary school	1.73	1.13	2.63	**0.011**	4.42
Technical college/ university	2.65	1.50	4.68	**0.001**	2.33
Number of hygiene habits mentioned by the parent/guardian					
None	1.00				1.00
1 to 2	1.51	1.08	2.12	**0.016**	1.67
3 or more	1.77	1.24	2.53	**0.002**	1.50
Quintiles for Coping Strategy Index (CSI)					
First	1.51	1.11	2.05	**0.008**	1.06
Second	1.10	0.82	1.48	0.512	1.11
Third	1.54	1.14	2.08	**0.005**	1.22
Fourth	1.10	0.82	1.46	0.523	0.92
Fifth	1.00				1.00

Variables	Numerate (n=1789)		Numerate (n=769)		OR	95% CI		p value	Numerate (n=1785)		Numerate (n=787)		OR
	n	%	n	%		Lower	Upper		n	%	n	%	
Class of the child													
Class 3	170	38.8%	268	61.2%	1.00				156	34.0%	303	66.0%	1.0(
Class 4	244	55.1%	199	44.9%	1.93	1.48	2.53	<0.001	258	55.6%	206	44.4%	2.4:
Class 5	341	72.2%	131	27.8%	4.10	3.11	5.42	<0.001	310	72.4%	118	27.6%	5.1(
Class 6	367	80.7%	88	19.3%	6.58	4.86	8.89	<0.001	357	81.3%	82	18.7%	8.4(
Class 7	382	86.4%	60	13.6%	10.04	7.19	14.01	<0.001	381	87.0%	57	13.0%	12.9
Class 8	285	92.5%	23	7.5%	19.54	12.25	31.14	<0.001	323	93.9%	21	6.1%	29.8
Mode of travel to school													
On foot	1754	69.7%	763	30.3%	1.00				1758	69.2%	783	30.8%	1.0(
Bicycle/car/motor cycle	35	85.4%	6	14.6%	2.54	1.06	6.06	0.036	27	87.1%	4	12.9%	3.0
Number of times child normally eat per day													
2 times or less	1059	67.6%	508	32.4%	1.00				1048	65.9%	542	34.1%	
3 times or more	730	73.7%	261	26.3%	1.34	1.13	1.60	0.001	737	75.1%	245	24.9%	1.5(
Child thought it is important to go to school													
Yes	1764	70.4%	741	29.6%	2.67	1.54	4.60	<0.001	1765	70.0%	758	30.0%	3.3
No	25	47.2%	28	52.8%	1.00				20	40.8%	29	59.2%	1.0(
Education level of the respondent													
Never attended school	739	64.7%	403	35.3%	1.00				664	62.1%	405	37.9%	1.0(
Madrasa/Adult learning center	37	66.1%	19	33.9%	1.06	0.60	1.87	0.835	31	67.4%	15	32.6%	1.2(
Did not complete primary school	341	69.2%	152	30.8%	1.22	0.98	1.53	0.081	346	68.1%	162	31.9%	1.3(
Completed primary school	375	75.0%	125	25.0%	1.64	1.29	2.07	<0.001	424	74.9%	142	25.1%	1.8:
Did not compete secondary	93	83.0%	19	17.0%	2.67	1.61	4.44	<0.001	103	81.7%	23	18.3%	2.7:
Completed secondary school	123	78.3%	34	21.7%	1.97	1.32	2.94	0.001	141	85.5%	24	14.5%	3.5!
Technical college/ university	81	82.7%	17	17.3%	2.60	1.52	4.44	<0.001	76	82.6%	16	17.4%	2.9(
Number of important benefits of education mentioned by the parent/guardian													
2 or less	1048	71.9%	410	28.1%	1.00				1071	70.3%	453	29.7%	1.0(
3 or more	741	67.4%	359	32.6%	0.81	0.68	0.96	0.014	714	68.1%	334	31.9%	0.9(
Number of important nutrition habits mentioned by the parent/guardian													
None	471	58.9%	329	41.1%	1.00				521	61.4%	327	38.6%	1.0(
At least 1	1318	75.0%	440	25.0%	2.09	1.75	2.50	<0.001	1264	73.3%	460	26.7%	1.7:
Number of hygiene habits mentioned by the parent/guardian													
None	110	52.4%	100	47.6%	1.00				119	53.1%	105	46.9%	1.0(
1 to 2	1039	70.9%	427	29.1%	2.21	1.65	2.97	<0.001	1038	70.4%	436	29.6%	2.1(
3 or more	640	72.6%	242	27.4%	2.40	1.77	3.27	<0.001	628	71.9%	246	28.1%	2.2{

| | Boys (n=2558) | | | | Girls (n=2572) | | |
Variables in the Equation	AOR	Lower	Upper	p value	AOR	Lower	Upper
Class of the child							
Class 3	1.00				1.00		
Class 4	1.80	1.36	2.37	**<0.001**	2.41	1.83	3.17
Class 5	3.86	2.90	5.14	**<0.001**	5.06	3.76	6.81
Class 6	6.06	4.45	8.26	**<0.001**	8.15	5.93	11.21
Class 7	9.15	6.50	12.89	**<0.001**	11.95	8.41	16.97
Class 8	17.69	11.01	28.42	**<0.001**	29.03	17.75	47.48
Mode of travel to school							
On foot	1.00				1.00		
Bicycle/car/motor cycle	2.03	0.79	5.19	0.139	2.85	0.92	8.86
Number of times child normally eat per day							
2 times or less	1.00				1.00		
3 times or more	1.21	0.99	1.48	0.061	1.33	1.08	1.64
Child thought it is important to go to school							
Yes	1.76	0.95	3.25	0.072	2.03	1.05	3.91
No	1.00				1.00		
Education level of the respondent							
Never attended school	1.00				1.00		
Madrasa/Adult learning center	0.96	0.51	1.82	0.907	1.09	0.55	2.17
Did not complete primary school	1.09	0.84	1.41	0.539	0.93	0.71	1.21
Completed primary school	1.43	1.09	1.88	**0.010**	1.46	1.12	1.91
Did not compete secondary	2.87	1.65	4.98	**<0.001**	2.34	1.38	3.99
Completed secondary school	1.65	1.07	2.57	**0.025**	2.44	1.48	4.03
Technical college/ university	2.02	1.13	3.62	**0.019**	1.93	1.04	3.57
Number of important benefits of education mentioned by the parent/guardian							
2 or less	1.00				1.00		
3 or more	1.35	1.10	1.66	**0.004**	1.08	0.87	1.33
Number of important nutrition habits mentioned by the parent/guardian							
None	1.00				1.00		
At least 1	1.47	1.18	1.83	**0.001**	1.12	0.90	1.40
Number of hygiene habits mentioned by the parent/guardian							
None	1.00				1.00		
1 to 2	1.64	1.15	2.32	**0.006**	1.88	1.33	2.67
3 or more	1.66	1.13	2.45	**0.010**	1.74	1.18	2.57

Annex 8: Comparing distribution of specific variables between study arms stratified by gender of child

Table 1a: Socio-demographic of parents/guardians distributed by CONTROL and WFPSMP stratified by gender of the child

Variables	Male (n=1254)					Female (n=1286)					Total (n=2540)				
	CONTROL (n=675)		WFPSMP (n=579)		p value	CONTROL (n=721)		WFPSMP (n=565)		p value	CONTROL (n=1396)		WFPSMP (n=1144)		p value
Age of guardian in years															
<20	1	0.1%	3	0.5%	0.534	1	0.1%	2	0.4%	0.593	2	0.1%	5	0.4%	0.183
20 - 29	71	10.5%	70	12.1%		90	12.5%	82	14.5%		161	11.5%	152	13.3%	
30 - 39	279	41.3%	227	39.2%		290	40.2%	208	36.8%		569	40.8%	435	38.0%	
40 - 49	192	28.4%	177	30.6%		200	27.7%	169	29.9%		392	28.1%	346	30.2%	
50 - 59	84	12.4%	70	12.1%		87	12.1%	69	12.2%		171	12.2%	139	12.2%	
60 and above	48	7.1%	32	5.5%		53	7.4%	35	6.2%		101	7.2%	67	5.9%	
Gender of the guardian															
Male	195	28.9%	200	34.5%	**0.032**	171	23.7%	163	28.8%	**0.037**	366	26.2%	363	31.7%	**0.002**
Female	480	71.1%	379	65.5%		550	76.3%	402	71.2%		1030	73.8%	781	68.3%	
Relationship of guardian to the child															
Mother/Father	582	86.2%	486	83.9%	**0.001**	620	86.0%	458	81.1%	**0.002**	1202	86.1%	944	82.5%	**<0.001**
Brother/Sister	11	1.6%	25	4.3%		19	2.6%	25	4.4%		30	2.1%	50	4.4%	
Uncle/Aunt	19	2.8%	24	4.1%		19	2.6%	34	6.0%		38	2.7%	58	5.1%	
Grand parent	49	7.3%	22	3.8%		45	6.2%	25	4.4%		94	6.7%	47	4.1%	
Guardian	14	2.1%	22	3.8%		18	2.5%	23	4.1%		32	2.3%	45	3.9%	
Guardian was the household head															
Yes	395	58.5%	354	61.1%	0.345	447	62.0%	348	61.6%	0.882	842	60.3%	702	61.4%	0.590
No	280	41.5%	225	38.9%		274	38.0%	217	38.4%		554	39.7%	442	38.6%	
Main occupation of the guardian															
Too old to work	18	2.7%	22	3.8%	**<0.001**	14	1.9%	20	3.5%	**<0.001**	32	2.3%	42	3.7%	**<0.001**
Student	4	0.6%	2	0.3%		6	0.8%	2	0.4%		10	0.7%	4	0.3%	
Farmer	274	40.6%	40	6.9%		293	40.6%	49	8.7%		567	40.6%	89	7.8%	
Pastoralist	31	4.6%	87	15.0%		19	2.6%	87	15.4%		50	3.6%	174	15.2%	
Salaried employee	19	2.8%	27	4.7%		25	3.5%	12	2.1%		44	3.2%	39	3.4%	
Casual laborer	154	22.8%	60	10.4%		183	25.4%	57	10.1%		337	24.1%	117	10.2%	
Self-employed business	51	7.6%	42	7.3%		42	5.8%	56	9.9%		93	6.7%	98	8.6%	
Not currently working	110	16.3%	234	40.4%		115	16.0%	216	38.2%		225	16.1%	450	39.3%	
Others	14	2.1%	65	11.2%		24	3.3%	66	11.7%		38	2.7%	131	11.5%	
Education level of the guardian															
Never attended school	114	16.9%	447	77.2%	**<0.001**	95	13.2%	454	80.4%	**<0.001**	209	15.0%	901	78.8%	**<0.001**
Madrasa/Adult learning center	0	0.0%	25	4.3%		0	0.0%	18	3.2%		0	0.0%	43	3.8%	
Did not complete primary school	206	30.5%	41	7.1%		228	31.6%	42	7.4%		434	31.1%	83	7.3%	
Completed primary school	228	33.8%	20	3.5%		252	35.0%	19	3.4%		480	34.4%	39	3.4%	
Did not compete secondary	37	5.5%	11	1.9%		58	8.0%	9	1.6%		95	6.8%	20	1.7%	
Completed secondary school	59	8.7%	17	2.9%		59	8.2%	11	1.9%		118	8.5%	28	2.4%	
Completed technical college	30	4.4%	15	2.6%		19	2.6%	12	2.1%		49	3.5%	27	2.4%	

	Male (n=1306)			Female (n=1284)			Total (n=2590)		
	WFPSMP (n=593)	HGSMP (n=713)		WFPSMP (n=541)	HGSMP (n=743)		WFPSMP (n=1134)	HGSMP (n=1456)	
Completed university/graduate school	1 0.1%	3 0.5%		10 1.4%	0 0.0%		11 0.8%	3 0.3%	

Table 1b: Socio-demographic of parents/guardians distributed by WFPSMP and HGSMP stratified by gender of the child

	Male (n=1306)			Female (n=1284)			Total (n=2590)		
Variables	**WFPSMP (n=593)**	**HGSMP (n=713)**	**p value**	**WFPSMP (n=541)**	**HGSMP (n=743)**	**p value**	**WFPSMP (n=1134)**	**HGSMP (n=1456)**	**p value**
Age of guardian in years									
<20	5 0.8%	2 0.3%	**0.004**	4 0.7%	2 0.3%	0.212	9 0.8%	4 0.3%	**0.001**
20 - 29	61 10.3%	77 10.8%		63 11.6%	75 10.1%		124 10.9%	152 10.4%	
30 - 39	225 37.9%	297 41.7%		211 39.0%	325 43.7%		436 38.4%	622 42.7%	
40 - 49	204 34.4%	183 25.7%		164 30.3%	202 27.2%		368 32.5%	385 26.4%	
50 - 59	66 11.1%	91 12.8%		69 12.8%	84 11.3%		135 11.9%	175 12.0%	
60 and above	32 5.4%	63 8.8%		30 5.5%	55 7.4%		62 5.5%	118 8.1%	
Gender of the guardian									
Male	211 35.6%	180 25.2%	**<0.001**	156 28.8%	177 23.8%	**0.043**	367 32.4%	357 24.5%	**<0.001**
Female	382 64.4%	533 74.8%		385 71.2%	566 76.2%		767 67.6%	1099 75.5%	
Relationship guardian to the child									
Mother/Father	487 82.1%	606 85.0%	**<0.001**	434 80.2%	627 84.4%	**<0.001**	921 81.2%	1233 84.7%	**<0.001**
Brother/Sister	23 3.9%	12 1.7%		35 6.5%	14 1.9%		58 5.1%	26 1.8%	
Uncle/Aunt	29 4.9%	16 2.2%		27 5.0%	19 2.6%		56 4.9%	35 2.4%	
Grand parent	20 3.4%	55 7.7%		21 3.9%	56 7.5%		41 3.6%	111 7.6%	
Guardian	34 5.7%	24 3.4%		24 4.4%	27 3.6%		58 5.1%	51 3.5%	
Guardian was the household head									
Yes	371 62.6%	431 60.4%	0.435	326 60.3%	463 62.3%	0.455	697 61.5%	894 61.4%	0.974
No	222 37.4%	282 39.6%		215 39.7%	280 37.7%		437 38.5%	562 38.6%	
Main occupation of the guardian									
Too old to work	23 3.9%	11 1.5%	**<0.001**	15 2.8%	9 1.2%	**<0.001**	38 3.4%	20 1.4%	**<0.001**
Student	3 0.5%	5 0.7%		5 0.9%	4 0.5%		8 0.7%	9 0.6%	
Farmer	41 6.9%	279 39.1%		30 5.5%	297 40.0%		71 6.3%	576 39.6%	
Pastoralist	91 15.3%	29 4.1%		65 12.0%	23 3.1%		156 13.8%	52 3.6%	
Salaried employee	24 4.0%	34 4.8%		18 3.3%	41 5.5%		42 3.7%	75 5.2%	
Casual laborer	78 13.2%	166 23.3%		50 9.2%	187 25.2%		128 11.3%	353 24.2%	
Self-employed business	40 6.7%	89 12.5%		59 10.9%	83 11.2%		99 8.7%	172 11.8%	
Not currently working	239 40.3%	87 12.2%		247 45.7%	89 12.0%		486 42.9%	176 12.1%	
Others	54 9.1%	13 1.8%		52 9.6%	10 1.3%		106 9.3%	23 1.6%	
Education level of the guardian									
Never attended school	466 78.6%	118 16.5%	**<0.001**	427 78.9%	105 14.1%	**<0.001**	893 78.7%	223 15.3%	**<0.001**
Madrasa/Adult learning center	30 5.1%	1 0.1%		24 4.4%	0 0.0%		54 4.8%	1 0.1%	
Did not complete primary school	31 5.2%	212 29.7%		28 5.2%	202 27.2%		59 5.2%	414 28.4%	
Completed primary school	22 3.7%	224 31.4%		22 4.1%	264 35.5%		44 3.9%	488 33.5%	
Did not compete secondary	6 1.0%	58 8.1%		8 1.5%	53 7.1%		14 1.2%	111 7.6%	
Completed secondary school	26 4.4%	61 8.6%		17 3.1%	80 10.8%		43 3.8%	141 9.7%	

	CONTROL		WFPSMP			CONTROL		WFPSMP			CONTROL		WFPSMP	
Completed technical college	10	1.7%	34	4.8%		14	2.6%	37	5.0%		24	2.1%	71	4.9%
Completed university/graduate school	2	0.3%	5	0.7%		1	0.2%	2	0.3%		3	0.3%	7	0.5%

Table 2a: Number of males and females in the household distributed by CONTROL and WFPSMP stratified by gender of the child

	Male (n=1254)					Female (n=1286)					Total (n=2540)				
	CONTROL (n=675)		WFPSMP (n=579)		p value	CONTROL (n=721)		WFPSMP (n=565)		p value	CONTROL (n=1396)		WFPSMP (n=1144)		p value
Variables															
Total males in the household										<0.001					<0.001
None	6	0.9%	1	0.2%	<0.001	35	4.9%	21	3.7%		41	2.9%	22	1.9%	
1 to 2	187	27.7%	104	18.0%		307	42.6%	150	26.5%		494	35.4%	254	22.2%	
3 to 4	316	46.8%	273	47.2%		287	39.8%	269	47.6%		603	43.2%	542	47.4%	
5 to 6	136	20.1%	153	26.4%		74	10.3%	106	18.8%		210	15.0%	259	22.6%	
7 to 8	30	4.4%	48	8.3%		18	2.5%	19	3.4%		48	3.4%	67	5.9%	
Total females in the household															
None	26	3.9%	23	4.0%	<0.001	2	0.3%	4	0.7%	0.021	28	2.0%	27	2.4%	0.002
1 to 2	316	46.8%	208	35.9%		200	27.7%	148	26.2%		516	37.0%	356	31.1%	
3 to 4	260	38.5%	259	44.7%		346	48.0%	235	41.6%		606	43.4%	494	43.2%	
5 to 6	70	10.4%	74	12.8%		135	18.7%	145	25.7%		205	14.7%	219	19.1%	
7 to 8	3	0.4%	15	2.6%		38	5.3%	33	5.8%		41	2.9%	48	4.2%	
Total males between 7-18 years attending school										<0.001					<0.001
None	15	2.2%	13	2.2%	0.028	196	27.2%	100	17.7%		211	15.1%	113	9.9%	
1 to 2	477	70.7%	368	63.6%		438	60.7%	351	62.1%		915	65.5%	719	62.8%	
3 to 4	164	24.3%	175	30.2%		77	10.7%	101	17.9%		241	17.3%	276	24.1%	
5 to 6	12	1.8%	20	3.5%		9	1.2%	11	1.9%		21	1.5%	31	2.7%	
7 to 8	7	1.0%	3	0.5%		1	0.1%	2	0.4%		8	0.6%	5	0.4%	
Total females between 7-18 years attending school															
None	203	30.1%	162	28.0%	0.065	24	3.3%	31	5.5%	0.204	227	16.3%	193	16.9%	0.516
1 to 2	408	60.4%	337	58.2%		508	70.5%	401	71.0%		916	65.6%	738	64.5%	
3 to 4	58	8.6%	68	11.7%		167	23.2%	111	19.6%		225	16.1%	179	15.6%	
5 to 6	3	0.4%	10	1.7%		18	2.5%	18	3.2%		21	1.5%	28	2.4%	
7 to 8	3	0.4%	2	0.3%		4	0.6%	4	0.7%		7	0.5%	6	0.5%	

Table 2b: Number of males and females in the household distributed by WFPSMP and HGSMP stratified by gender of the child

Variables	Male (n=1306)					Female (n=1284)					Total (n=2590)				
	WFPSMP (n=593)		HGSMP (n=713)		p value	WFPSMP (n=541)		HGSMP (n=743)		p value	WFPSMP (n=1134)		HGSMP (n=1456)		p value
Total males in the household															
None	5	0.8%	3	0.4%	<0.001	26	4.8%	47	6.3%	<0.001	31	2.7%	50	3.4%	<0.001
1 to 2	110	18.5%	218	30.6%		161	29.8%	354	47.6%		271	23.9%	572	39.3%	
3 to 4	265	44.7%	348	48.8%		235	43.4%	259	34.9%		500	44.1%	607	41.7%	
5 to 6	161	27.2%	111	15.6%		96	17.7%	65	8.7%		257	22.7%	176	12.1%	
7 to 8	52	8.8%	33	4.6%		23	4.3%	18	2.4%		75	6.6%	51	3.5%	
Total females in the household															
None	22	3.7%	68	9.5%	<0.001	4	0.7%	3	0.4%	0.014	26	2.3%	71	4.9%	<0.001
1 to 2	198	33.4%	320	44.9%		143	26.4%	234	31.5%		341	30.1%	554	38.0%	
3 to 4	264	44.5%	241	33.8%		234	43.3%	346	46.6%		498	43.9%	587	40.3%	
5 to 6	98	16.5%	74	10.4%		124	22.9%	121	16.3%		222	19.6%	195	13.4%	
7 to 8	11	1.9%	10	1.4%		36	6.7%	39	5.2%		47	4.1%	49	3.4%	
Total males between 7-18 years attending school															
None	13	2.2%	18	2.5%	0.168	97	17.9%	246	33.1%	<0.001	110	9.7%	264	18.1%	<0.001
1 to 2	388	65.4%	509	71.4%		334	61.7%	410	55.2%		722	63.7%	919	63.1%	
3 to 4	163	27.5%	155	21.7%		96	17.7%	76	10.2%		259	22.8%	231	15.9%	
5 to 6	22	3.7%	24	3.4%		13	2.4%	9	1.2%		35	3.1%	33	2.3%	
7 to 8	7	1.2%	7	1.0%		1	0.2%	2	0.3%		8	0.7%	9	0.6%	
Total females between 7-18 years attending school															
None	151	25.5%	267	37.4%	<0.001	26	4.8%	24	3.2%	0.298	177	15.6%	291	20.0%	0.029
1 to 2	355	59.9%	369	51.8%		382	70.6%	545	73.4%		737	65.0%	914	62.8%	
3 to 4	80	13.5%	66	9.3%		114	21.1%	145	19.5%		194	17.1%	211	14.5%	
5 to 6	7	1.2%	8	1.1%		14	2.6%	26	3.5%		21	1.9%	34	2.3%	
7 to 8	0	0.0%	3	0.4%		5	0.9%	3	0.4%		5	0.4%	6	0.4%	

Table 3a: Availability of food at home distributed by CONTROL and WFPSMP stratified by gender of the child

Variables	Male (n=1254)						Female (n=1286)						Total (n=2540)					
	CONTROL (n=675)		WFPSMP (n=579)		p value		CONTROL (n=721)		WFPSMP (n=565)		p value		CONTROL (n=1396)		WFPSMP (n=1144)		p value	
Number of days child ate before going to school																		
None	104	15.4%	158	27.3%	<0.001		125	17.3%	153	27.1%	<0.001		229	16.4%	311	27.2%	<0.001	
1 - 2 days	96	14.2%	83	14.3%			107	14.8%	101	17.9%			203	14.5%	184	16.1%		
3 - 4 days	203	30.1%	149	25.7%			231	32.0%	122	21.6%			434	31.1%	271	23.7%		
5 days	272	40.3%	189	32.6%			258	35.8%	189	33.5%			530	38.0%	378	33.0%		
Number of days child ate after coming from school																		
None	23	3.4%	36	6.2%	<0.001		29	4.0%	35	6.2%	<0.001		52	3.7%	71	6.2%	<0.001	
1 - 2 days	42	6.2%	81	14.0%			48	6.7%	95	16.8%			90	6.4%	176	15.4%		
3 - 4 days	129	19.1%	206	35.6%			140	19.4%	171	30.3%			269	19.3%	377	33.0%		
5 days	481	71.3%	256	44.2%			504	69.9%	264	46.7%			985	70.6%	520	45.5%		
Child had a meal on interview day before going to school																		
No	221	32.7%	256	44.2%	<0.001		287	39.8%	260	46.0%	<0.001		508	36.4%	516	45.1%	<0.001	
Yes: Not enough	298	44.1%	152	26.3%			279	38.7%	156	27.6%			577	41.3%	308	26.9%		
Yes: Enough	156	23.1%	171	29.5%			155	21.5%	149	26.4%			311	22.3%	320	28.0%		
Food consumption score (FCS)																		
Poor	164	24.3%	216	37.3%	<0.001		182	25.2%	213	37.7%	<0.001		346	24.8%	429	37.5%	<0.001	
Borderline	268	39.7%	154	26.6%			288	39.9%	158	28.0%			556	39.8%	312	27.3%		
Acceptable	243	36.0%	209	36.1%			251	34.8%	194	34.3%			494	35.4%	403	35.2%		

Table 3b: Availability of food at home distributed by WFPSMP and HGSMP stratified by gender of the child

Variables	Male (n=1306)					Female (n=1284)					Total (n=2590)				
	WFPSMP (n=593)		HGSMP (n=713)		p value	WFPSMP (n=541)		HGSMP (n=743)		p value	WFPSMP (n=1134)		HGSMP (n=1456)		p value
Number of days child ate before going to school															
None	116	19.6%	90	12.6%	0.007	97	17.9%	80	10.8%	<0.001	213	18.8%	170	11.7%	<0.001
1 - 2 days	80	13.5%	98	13.7%		99	18.3%	103	13.9%		179	15.8%	201	13.8%	
3 - 4 days	165	27.8%	224	31.4%		138	25.5%	232	31.2%		303	26.7%	456	31.3%	
5 days	232	39.1%	301	42.2%		207	38.3%	328	44.1%		439	38.7%	629	43.2%	
Number of days child ate after coming from school															
None	24	4.0%	41	5.8%	<0.001	22	4.1%	42	5.7%	<0.001	46	4.1%	83	5.7%	<0.001
1 - 2 days	89	15.0%	44	6.2%		94	17.4%	41	5.5%		183	16.1%	85	5.8%	
3 - 4 days	204	34.4%	125	17.5%		169	31.2%	126	17.0%		373	32.9%	251	17.2%	
5 days	276	46.5%	503	70.5%		256	47.3%	534	71.9%		532	46.9%	1037	71.2%	
Child had a meal on interview day before going to school															
No	209	35.2%	231	32.4%	<0.001	193	35.7%	241	32.4%	<0.001	402	35.4%	472	32.4%	<0.001
Meal not enough	162	27.3%	312	43.8%		154	28.5%	332	44.7%		316	27.9%	644	44.2%	
Enough meal	222	37.4%	170	23.8%		194	35.9%	170	22.9%		416	36.7%	340	23.4%	
Food consumption score (FCS)															
Poor	197	33.2%	148	20.8%	<0.001	193	35.7%	156	21.0%	<0.001	390	34.4%	304	20.9%	<0.001
Borderline	135	22.8%	281	39.4%		125	23.1%	271	36.5%		260	22.9%	552	37.9%	
Acceptable	261	44.0%	284	39.8%		223	41.2%	316	42.5%		484	42.7%	600	41.2%	

Table 4a: Availability of food at school distributed by CONTROL and WFPSMP stratified by gender of the child

Variables	Male (n=1254)						Female (n=1286)						Total (n=2540)					
	CONTROL (n=675)		WFPSMP (n=579)		p value		CONTROL (n=721)		WFPSMP (n=565)		p value		CONTROL (n=1396)		WFPSMP (n=1144)		p value	
Child has been receiving school meals at school in the current school year (2017)																		
Yes	158	23.4%	322	55.6%	**<0.001**		121	16.8%	356	63.0%	**<0.001**		279	20.0%	678	59.3%	**<0.001**	
No	517	76.6%	257	44.4%			600	83.2%	209	37.0%			1117	80.0%	466	40.7%		
The school in which the child was learning at currently (same week) serving food																		
Yes	114	16.9%	289	49.9%	**<0.001**		113	15.7%	302	53.5%	**<0.001**		227	16.3%	591	51.7%	**<0.001**	
No	561	83.1%	290	50.1%			608	84.3%	263	46.5%			1169	83.7%	553	48.3%		
When school meals are not provided: Child carried food from home																		
No	410	60.7%	573	99.0%	**<0.001**		383	53.1%	562	99.5%	**<0.001**		793	56.8%	1135	99.2%	**<0.001**	
Yes	265	39.3%	6	1.0%			338	46.9%	3	0.5%			603	43.2%	9	0.8%		
When school meals are not provided: Child buys lunch																		
No	664	98.4%	572	98.8%	0.532		711	98.6%	558	98.8%	0.818		1375	98.5%	1130	98.8%	0.546	
Yes	11	1.6%	7	1.2%			10	1.4%	7	1.2%			21	1.5%	14	1.2%		
When school meals are not provided: Child goes home for lunch																		
No	537	79.6%	246	42.5%	**<0.001**		558	77.4%	278	49.2%	**<0.001**		1095	78.4%	524	45.8%	**<0.001**	
Yes	138	20.4%	333	57.5%			163	22.6%	287	50.8%			301	21.6%	620	54.2%		
When school meals are not provided: Child remains at home																		
No	670	99.3%	562	97.1%	**0.003**		715	99.2%	544	96.3%	**<0.001**		1385	99.2%	1106	96.7%	**<0.001**	
Yes	5	0.7%	17	2.9%			6	0.8%	21	3.7%			11	0.8%	38	3.3%		
When school meals are not provided: Child goes without lunch																		
No	255	37.8%	293	50.6%	**<0.001**		315	43.7%	262	46.4%	0.337		570	40.8%	555	48.5%	**<0.001**	
Yes	420	62.2%	286	49.4%			406	56.3%	303	53.6%			826	59.2%	589	51.5%		
Child missed a complete day of school during the 1st term of the year (2017)																		
Yes	357	52.9%	211	36.4%	**<0.001**		360	49.9%	190	33.6%	**<0.001**		717	51.4%	401	35.1%	**<0.001**	
No	318	47.1%	368	63.6%			361	50.1%	375	66.4%			679	48.6%	743	64.9%		

Table 4b: Availability of food at school distributed by WFPSMP and HGSMP stratified by gender of the child

Variables	Male (n=1306)			Female (n=1284)			Total (n=2590)		
	WFPSMP (n=593)	HGSMP (n=713)	p value	WFPSMP (n=541)	HGSMP (n=743)	p value	WFPSMP (n=1134)	HGSMP (n=1456)	p value
Child has been receiving school meals at school in the current school year (2017)									
Yes	318 53.6%	573 80.4%	<0.001	313 57.9%	598 80.5%	<0.001	631 55.6%	1171 80.4%	<0.001
No	275 46.4%	140 19.6%		228 42.1%	145 19.5%		503 44.4%	285 19.6%	
The school in which the child was learning at currently (same week) serving food									
Yes	263 44.4%	351 49.2%	0.079	235 43.4%	399 53.7%	<0.001	498 43.9%	750 51.5%	<0.001
No	330 55.6%	362 50.8%		306 56.6%	344 46.3%		636 56.1%	706 48.5%	
When school meals are not provided: Child carried food from home									
No	583 98.3%	410 57.5%	<0.001	537 99.3%	387 52.1%	<0.001	1120 98.8%	797 54.7%	<0.001
Yes	10 1.7%	303 42.5%		4 0.7%	356 47.9%		14 1.2%	659 45.3%	
When school meals are not provided: Child buys lunch									
No	581 98.0%	698 97.9%	0.919	532 98.3%	732 98.5%	0.794	1113 98.1%	1430 98.2%	0.900
Yes	12 2.0%	15 2.1%		9 1.7%	11 1.5%		21 1.9%	26 1.8%	
When school meals are not provided: Child goes home for lunch									
No	197 33.2%	557 78.1%	<0.001	202 37.3%	602 81.0%	<0.001	399 35.2%	1159 79.6%	<0.001
Yes	396 66.8%	156 21.9%		339 62.7%	141 19.0%		735 64.8%	297 20.4%	
When school meals are not provided: Child remains at home									
No	580 97.8%	707 99.2%	**0.042**	535 98.9%	726 97.7%	0.116	1115 98.3%	1433 98.4%	0.848
Yes	13 2.2%	6 0.8%		6 1.1%	17 2.3%		19 1.7%	23 1.6%	
When school meals are not provided: Child goes without lunch									
No	376 63.4%	291 40.8%	<0.001	320 59.1%	328 44.1%	<0.001	696 61.4%	619 42.5%	<0.001
Yes	217 36.6%	422 59.2%		221 40.9%	415 55.9%		438 38.6%	837 57.5%	
Child missed a complete day of school during the 1st term of the year (2017)									
Yes	181 30.5%	402 56.4%	<0.001	186 34.4%	399 53.7%	<0.001	367 32.4%	801 55.0%	<0.001
No	412 69.5%	311 43.6%		355 65.6%	344 46.3%		767 67.6%	655 45.0%	

Table 5a: Coping strategy on days when the family did not have enough food or money to buy food distributed by CONTROL and WFPSMP stratified by gender of t[...] child

Variables	Male (n=1254)					Female (n=1286)					Total (n=2540)				
	CONTROL (n=675)		WFPSMP (n=579)		p value	CONTROL (n=721)		WFPSMP (n=565)		p value	CONTROL (n=1396)		WFPSMP (n=1144)		p value
Quintiles of Coping Strategy Index (CSI)															
First	108	16.0%	130	22.5%	**0.001**	119	16.5%	109	19.3%	0.117	227	16.3%	239	20.9%	**0.001**
Second	126	18.7%	132	22.8%		142	19.7%	104	18.4%		268	19.2%	236	20.6%	
Third	140	20.7%	93	16.1%		147	20.4%	121	21.4%		287	20.6%	214	18.7%	
Fourth	161	23.9%	103	17.8%		173	24.0%	105	18.6%		334	23.9%	208	18.2%	
Fifth	140	20.7%	121	20.9%		140	19.4%	126	22.3%		280	20.1%	247	21.6%	

Table 5b: Coping strategy on days when the family did not have enough food or money to buy food distributed by WFPSMP and HGSMP stratified by gender of the[...]

Variables	Male (n=1306)					Female (n=1284)					Total (n=2590)				
	WFPSMP (n=593)		HGSMP (n=713)		p value	WFPSMP (n=541)		HGSMP (n=743)		p value	WFPSMP (n=1134)		HGSMP (n=1456)		p value
Quintiles of Coping Strategy Index (CSI)															
First	178	30.0%	126	17.7%	**0.001**	132	24.4%	145	19.5%	0.161	310	27.3%	271	18.6%	**0.001**
Second	133	22.4%	132	18.5%		110	20.3%	154	20.7%		243	21.4%	286	19.6%	
Third	92	15.5%	170	23.8%		100	18.5%	167	22.5%		192	16.9%	337	23.1%	
Fourth	77	13.0%	165	23.1%		96	17.7%	144	19.4%		173	15.3%	309	21.2%	
Fifth	113	19.1%	120	16.8%		103	19.0%	133	17.9%		216	19.0%	253	17.4%	

Table 6a: Views on benefits of education, school absenteeism, sources of information on school feeding and hygiene distributed by CONTROL and WFPSMP strat by gender of the child

Variables	Male (n=1254)						Female (n=1286)						Total (n=2540)					
	CONTROL (n=675)		WFPSMP (n=579)		p value		CONTROL (n=721)		WFPSMP (n=565)		p value		CONTROL (n=1396)		WFPSMP (n=1144)		p value	
Number of important benefits of education mentioned by the parent/guardian																		
<2	227	33.6%	78	13.5%	<0.001		242	33.6%	80	14.2%	<0.001		469	33.6%	158	13.8%	<0.00	
2 to 3	404	59.9%	310	53.5%			436	60.5%	284	50.3%			840	60.2%	594	51.9%		
4 to 5	41	6.1%	104	18.0%			38	5.3%	96	17.0%			79	5.7%	200	17.5%		
6 and above	3	0.4%	87	15.0%			5	0.7%	105	18.6%			8	0.6%	192	16.8%		
Number of sources of information on school feeding in the past year mentioned by the parent/guardian																		
None	469	69.5%	172	29.7%	<0.001		511	70.9%	164	29.0%	<0.001		980	70.2%	336	29.4%	<0.00	
One	181	26.8%	304	52.5%			184	25.5%	302	53.5%			365	26.1%	606	53.0%		
Two	19	2.8%	73	12.6%			24	3.3%	69	12.2%			43	3.1%	142	12.4%		
Three and above	6	0.9%	30	5.2%			2	0.3%	30	5.3%			8	0.6%	60	5.2%		
Number of sources of information on hygiene in the past year mentioned by the parent/guardian																		
None	337	49.9%	218	37.7%	<0.001		361	50.1%	182	32.2%	<0.001		698	50.0%	400	35.0%	<0.00	
One	257	38.1%	233	40.2%			288	39.9%	239	42.3%			545	39.0%	472	41.3%		
Two	55	8.1%	83	14.3%			51	7.1%	99	17.5%			106	7.6%	182	15.9%		
Three and above	26	3.9%	45	7.8%			21	2.9%	45	8.0%			47	3.4%	90	7.9%		
Number of reasons why the child missed a complete day of school during the 1st term of this year																		
None	318	47.1%	368	63.6%	<0.001		361	50.1%	375	66.4%	<0.001		679	48.6%	743	64.9%	<0.00	
One	261	38.7%	143	24.7%			282	39.1%	118	20.9%			543	38.9%	261	22.8%		
Two	80	11.9%	39	6.7%			61	8.5%	45	8.0%			141	10.1%	84	7.3%		
Three and above	16	2.4%	29	5.0%			17	2.4%	27	4.8%			33	2.4%	56	4.9%		

Table 6b: Views on benefits of education, school absenteeism, sources of information on school feeding and hygiene distributed by WFPSMP and HGSMP stratified gender of the child

Variables	Male (n=1306)						Female (n=1284)						Total (n=2590)					
	WFPSMP (n=593)		HGSMP (n=713)		p value		WFPSMP (n=541)		HGSMP (n=743)		p value		WFPSMP (n=1134)		HGSMP (n=1456)		p value	
Number of important benefits of education mentioned																		
<2	63	10.6%	202	28.3%	<0.001		64	11.8%	183	24.6%	<0.001		127	11.2%	385	26.4%	<0.001	
2 to 3	358	60.4%	455	63.8%			301	55.6%	500	67.3%			659	58.1%	955	65.6%		
4 to 5	109	18.4%	55	7.7%			93	17.2%	57	7.7%			202	17.8%	112	7.7%		
6 and above	63	10.6%	1	0.1%			83	15.3%	3	0.4%			146	12.9%	4	0.3%		
Number of sources of information on school feeding in the past year																		
None	182	30.7%	299	41.9%	<0.001		169	31.2%	318	42.8%	<0.001		351	31.0%	617	42.4%	<0.001	
One	310	52.3%	357	50.1%			271	50.1%	377	50.7%			581	51.2%	734	50.4%		
Two	71	12.0%	42	5.9%			66	12.2%	37	5.0%			137	12.1%	79	5.4%		
Three and above	30	5.1%	15	2.1%			35	6.5%	11	1.5%			65	5.7%	26	1.8%		
Number of sources of information on hygiene in the past year																		
None	235	39.6%	244	34.2%	<0.001		192	35.5%	258	34.7%	<0.001		427	37.7%	502	34.5%	<0.001	
One	217	36.6%	372	52.2%			200	37.0%	368	49.5%			417	36.8%	740	50.8%		
Two	102	17.2%	76	10.7%			109	20.1%	92	12.4%			211	18.6%	168	11.5%		
Three and above	39	6.6%	21	2.9%			40	7.4%	25	3.4%			79	7.0%	46	3.2%		
Number of reasons why the child missed a complete day of school during the 1st term of this year																		
None	412	69.5%	311	43.6%	<0.001		355	65.6%	344	46.3%	<0.001		767	67.6%	655	45.0%	<0.001	
One	124	20.9%	304	42.6%			124	22.9%	323	43.5%			248	21.9%	627	43.1%		
Two	34	5.7%	76	10.7%			42	7.8%	58	7.8%			76	6.7%	134	9.2%		
Three and above	23	3.9%	22	3.1%			20	3.7%	18	2.4%			43	3.8%	40	2.7%		

Table 7a: Socio-demographic characteristics of children distributed by CONTROL and WFPSMP stratified by gender of the child

Variables	Male (n=1254)					Female (n=1286)					Total (n=2540)				
	CONTROL (n=675)		WFPSMP (n=579)		p value	CONTROL (n=721)		WFPSMP (n=565)		p value	CONTROL (n=1396)		WFPSMP (n=1144)		p value
Age of child in years															
7 to 8	43	6.4%	32	5.5%	**0.078**	67	9.3%	33	5.8%	**0.002**	110	7.9%	65	5.7%	**<0.**
9 to 10	135	20.0%	87	15.0%		158	21.9%	97	17.2%		293	21.0%	184	16.1%	
11 to 12	188	27.9%	163	28.2%		202	28.0%	162	28.7%		390	27.9%	325	28.4%	
13 to 14	204	30.2%	181	31.3%		210	29.1%	172	30.4%		414	29.7%	353	30.9%	
>14	105	15.6%	116	20.0%		84	11.7%	101	17.9%		189	13.5%	217	19.0%	
Class of the child															
Third	99	14.7%	136	23.5%	**0.006**	116	16.1%	123	21.8%	**0.001**	215	15.4%	259	22.6%	**<0.**
Fourth	116	17.2%	94	16.2%		109	15.1%	108	19.1%		225	16.1%	202	17.7%	
Fifth	122	18.1%	96	16.6%		112	15.5%	96	17.0%		234	16.8%	192	16.8%	
Sixth	122	18.1%	95	16.4%		128	17.8%	95	16.8%		250	17.9%	190	16.6%	
Seventh	133	19.7%	94	16.2%		135	18.7%	76	13.5%		268	19.2%	170	14.9%	
Eighth	83	12.3%	64	11.1%		121	16.8%	67	11.9%		204	14.6%	131	11.5%	
Time taken to get to school															
Less than 15 minutes	151	22.4%	262	45.3%	**<0.001**	153	21.2%	273	48.3%	**<0.001**	304	21.8%	535	46.8%	**<0.**
Between 15 and 30 minutes	250	37.0%	189	32.6%		255	35.4%	158	28.0%		505	36.2%	347	30.3%	
Between 30 and 60 minutes	219	32.4%	78	13.5%		238	33.0%	85	15.0%		457	32.7%	163	14.2%	
More than 1 hour	55	8.1%	50	8.6%		75	10.4%	49	8.7%		130	9.3%	99	8.7%	
Mode of travel to school															
On foot	668	99.0%	574	99.1%	0.753	719	99.7%	562	99.5%	0.468	1387	99.4%	1136	99.3%	0.8
Bicycle/ Bus/ Motor cycle	7	1.0%	5	0.9%		2	0.3%	3	0.5%		9	0.6%	8	0.7%	
Brothers and sisters currently studying in the same school															
Yes	484	71.7%	382	66.0%	**0.029**	547	75.9%	387	68.5%	**0.003**	1031	73.9%	769	67.2%	**<0.**
No	191	28.3%	197	34.0%		174	24.1%	178	31.5%		365	26.1%	375	32.8%	
Having brothers and sisters who are old enough to go to school but are NOT currently attending school															
Yes	69	10.2%	131	22.6%	**<0.001**	62	8.6%	124	21.9%	**<0.001**	131	9.4%	255	22.3%	**<0.**
No	606	89.8%	448	77.4%		659	91.4%	441	78.1%		1265	90.6%	889	77.7%	

Table 7b: Socio-demographic characteristics of children distributed by WFPSMP and HGSMP stratified by gender of the child

Variables	Male (n=1306)					Female (n=1284)					Total (n=2590)				
	WFPSMP (n=593)		HGSMP (n=713)		p value	WFPSMP (n=541)		HGSMP (n=743)		p value	WFPSMP (n=1134)		HGSMP (n=1456)		p value
Age of child in years															
7 to 8	28	4.7%	27	3.8%	**0.001**	38	7.0%	54	7.3%	**0.005**	66	5.8%	81	5.6%	**<0.001**
9 to 10	83	14.0%	163	22.9%		97	17.9%	176	23.7%		180	15.9%	339	23.3%	
11 to 12	184	31.0%	191	26.8%		164	30.3%	236	31.8%		348	30.7%	427	29.3%	
13 to 14	206	34.7%	220	30.9%		164	30.3%	213	28.7%		370	32.6%	433	29.7%	
>14	92	15.5%	112	15.7%		78	14.4%	64	8.6%		170	15.0%	176	12.1%	
Class of the child															
Third	125	21.1%	95	13.3%	**<0.001**	123	22.7%	111	14.9%	**<0.001**	248	21.9%	206	14.1%	**<0.001**
Fourth	119	20.1%	119	16.7%		121	22.4%	122	16.4%		240	21.2%	241	16.6%	
Fifth	120	20.2%	130	18.2%		95	17.6%	126	17.0%		215	19.0%	256	17.6%	
Sixth	94	15.9%	139	19.5%		98	18.1%	125	16.8%		192	16.9%	264	18.1%	
Seventh	84	14.2%	123	17.3%		66	12.2%	149	20.1%		150	13.2%	272	18.7%	
Eighth	51	8.6%	107	15.0%		38	7.0%	110	14.8%		89	7.8%	217	14.9%	
Time taken to get to school															
Less than 15 minutes	298	50.3%	187	26.2%	**<0.001**	262	48.4%	190	25.6%	**<0.001**	560	49.4%	377	25.9%	**<0.001**
Between 15 and 30 minutes	194	32.7%	273	38.3%		174	32.2%	306	41.2%		368	32.5%	579	39.8%	
Between 30 and 60 minutes	68	11.5%	203	28.5%		67	12.4%	191	25.7%		135	11.9%	394	27.1%	
More than 1 hour	33	5.6%	50	7.0%		38	7.0%	56	7.5%		71	6.3%	106	7.3%	
Mode of travel to school															
On foot	592	99.8%	685	96.1%	**<0.001**	539	99.6%	720	96.9%	**<0.001**	1131	99.7%	1405	96.5%	**<0.001**
Bicycle/ Bus/ Motor cycle	1	0.2%	28	3.9%		2	0.4%	23	3.1%		3	0.3%	51	3.5%	
Brothers and sisters currently studying in the same school															
Yes	378	63.7%	476	66.8%	0.254	355	65.6%	512	68.9%	0.214	733	64.6%	988	67.9%	0.085
No	215	36.3%	237	33.2%		186	34.4%	231	31.1%		401	35.4%	468	32.1%	
Having brothers and sisters who are old enough to go to school but are NOT currently attending school															
Yes	116	19.6%	56	7.9%	**<0.001**	104	19.2%	66	8.9%	**<0.001**	220	19.4%	122	8.4%	**<0.001**
No	477	80.4%	657	92.1%		437	80.8%	677	91.1%		914	80.6%	1334	91.6%	

Table 8a: Children feeding distributed by CONTROL and WFPSMP stratified by gender of the child

Variables	Male (n=1254) CONTROL (n=675)		WFPSMP (n=579)		p value	Female (n=1286) CONTROL (n=721)		WFPSMP (n=565)		p value	Total (n=2540) CONTROL (n=1396)		WFPSMP (n=1144)		p value
Had a meal today BEFORE coming to school															
No	230	34.1%	221	38.2%	**<0.001**	296	41.1%	237	41.9%	**0.007**	526	37.7%	458	40.0%	**<0.00**
Yes: Not enough	252	37.3%	149	25.7%		238	33.0%	146	25.8%		490	35.1%	295	25.8%	
Yes: Enough	193	28.6%	209	36.1%		187	25.9%	182	32.2%		380	27.2%	391	34.2%	
Number of days child ate before going to school															
None	89	13.2%	135	23.3%	**<0.001**	103	14.3%	124	21.9%	**<0.001**	192	13.8%	259	22.6%	**<0.00**
1 - 2 days	111	16.4%	93	16.1%		113	15.7%	114	20.2%		224	16.0%	207	18.1%	
3 - 4 days	219	32.4%	162	28.0%		232	32.2%	159	28.1%		451	32.3%	321	28.1%	
5 days	256	37.9%	189	32.6%		273	37.9%	168	29.7%		529	37.9%	357	31.2%	
Number of times child normally eat per day															
1 time	107	15.9%	119	20.6%	**<0.001**	133	18.4%	118	20.9%	**0.007**	240	17.2%	237	20.7%	**<0.00**
2 times	291	43.1%	292	50.4%		326	45.2%	293	51.9%		617	44.2%	585	51.1%	
3 times	266	39.4%	164	28.3%		249	34.5%	147	26.0%		515	36.9%	311	27.2%	
More than 3 time	11	1.6%	4	0.7%		13	1.8%	7	1.2%		24	1.7%	11	1.0%	
Number of times child ate yesterday															
1 time	148	21.9%	139	24.0%	**0.050**	196	27.2%	134	23.7%	**0.024**	344	24.6%	273	23.9%	**0.00**
2 times	276	40.9%	261	45.1%		290	40.2%	275	48.7%		566	40.5%	536	46.9%	
3 times	234	34.7%	173	29.9%		220	30.5%	148	26.2%		454	32.5%	321	28.1%	
More than 3 time	17	2.5%	6	1.0%		15	2.1%	8	1.4%		32	2.3%	14	1.2%	
The last time meals were provided for pupils in the school															
Yesterday	82	12.1%	238	41.1%	**<0.001**	69	9.6%	263	46.5%	**<0.001**	151	10.8%	501	43.8%	**<0.00**
One week ago	94	13.9%	24	4.1%		74	10.3%	18	3.2%		168	12.0%	42	3.7%	
One month ago	9	1.3%	4	0.7%		7	1.0%	5	0.9%		16	1.1%	9	0.8%	
One term ago	19	2.8%	201	34.7%		25	3.5%	186	32.9%		44	3.2%	387	33.8%	
Two terms ago	5	0.7%	65	11.2%		4	0.6%	51	9.0%		9	0.6%	116	10.1%	
One year ago	62	9.2%	43	7.4%		51	7.1%	39	6.9%		113	8.1%	82	7.2%	
More than one year ago	404	59.9%	4	0.7%		491	68.1%	3	0.5%		895	64.1%	7	0.6%	

Table 8b: Children feeding distributed by WFPSMP and HGSMP stratified by gender of the child

Variables	Male (n=1306)						Female (n=1284)						Total (n=2590)					
	WFPSMP (n=593)		HGSMP (n=713)		p value		WFPSMP (n=541)		HGSMP (n=743)		p value		WFPSMP (n=1134)		HGSMP (n=1456)		p value	
Had a meal today BEFORE coming to school																		
No	175	29.5%	194	27.2%	<0.001		182	33.6%	246	33.1%	0.006		357	31.5%	440	30.2%	<0.00	
Yes: Not enough	145	24.5%	257	36.0%			137	25.3%	244	32.8%			282	24.9%	501	34.4%		
Yes: Enough	273	46.0%	262	36.7%			222	41.0%	253	34.1%			495	43.7%	515	35.4%		
Number of days child ate before going to school																		
None	88	14.8%	65	9.1%	<0.001		78	14.4%	83	11.2%	<0.001		166	14.6%	148	10.2%	<0.00	
1 - 2 days	111	18.7%	107	15.0%			100	18.5%	119	16.0%			211	18.6%	226	15.5%		
3 - 4 days	169	28.5%	198	27.8%			165	30.5%	182	24.5%			334	29.5%	380	26.1%		
5 days	225	37.9%	343	48.1%			198	36.6%	359	48.3%			423	37.3%	702	48.2%		
Number of times child normally eat per day																		
1 time	81	13.7%	111	15.6%	<0.001		92	17.0%	106	14.3%	<0.001		173	15.3%	217	14.9%	<0.00	
2 times	275	46.4%	242	33.9%			246	45.5%	240	32.3%			521	45.9%	482	33.1%		
3 times	227	38.3%	339	47.5%			193	35.7%	371	49.9%			420	37.0%	710	48.8%		
More than 3 time	10	1.7%	21	2.9%			10	1.8%	26	3.5%			20	1.8%	47	3.2%		
Number of times child ate yesterday																		
1 time	110	18.5%	126	17.7%	0.061		114	21.1%	141	19.0%	0.001		224	19.8%	267	18.3%	<0.00	
2 times	240	40.5%	256	35.9%			226	41.8%	242	32.6%			466	41.1%	498	34.2%		
3 times	233	39.3%	305	42.8%			188	34.8%	330	44.4%			421	37.1%	635	43.6%		
More than 3 time	10	1.7%	26	3.6%			13	2.4%	30	4.0%			23	2.0%	56	3.8%		
The last time meals were provided for pupils in the school																		
Yesterday	211	35.6%	305	42.8%	<0.001		197	36.4%	352	47.4%	<0.001		408	36.0%	657	45.1%	<0.00	
One week ago	32	5.4%	72	10.1%			27	5.0%	67	9.0%			59	5.2%	139	9.5%		
One month ago	7	1.2%	26	3.6%			10	1.8%	22	3.0%			17	1.5%	48	3.3%		
One term ago	246	41.5%	200	28.1%			225	41.6%	189	25.4%			471	41.5%	389	26.7%		
Two terms ago	47	7.9%	2	0.3%			32	5.9%	4	0.5%			79	7.0%	6	0.4%		
One year ago	47	7.9%	17	2.4%			47	8.7%	17	2.3%			94	8.3%	34	2.3%		
More than one year ago	3	0.5%	91	12.8%			3	0.6%	92	12.4%			6	0.5%	183	12.6%		

Table 9a: Hygiene, nutrition, concentration in class, importance of education and school absenteeism distributed by CONTROL and WFPSMP stratified by gender the child

Variables	Male (n=1254)						Female (n=1286)						Total (n=2	
	CONTROL (n=675)		WFPSMP (n=579)		p value		CONTROL (n=721)		WFPSMP (n=565)		p value		CONTROL (n=1396)		WFP (n=1
In the past month the teacher talked to students about hygiene														
Yes	582	86.2%	497	85.8%	0.845		628	87.1%	503	89.0%	0.293		1210	86.7%	1000
No	93	13.8%	82	14.2%			93	12.9%	62	11.0%			186	13.3%	144
Number of hygiene habits mentioned														
None	64	9.5%	49	8.5%	<0.001		64	8.9%	45	8.0%	<0.001		128	9.2%	94
1 to 2	479	71.0%	249	43.0%			513	71.2%	217	38.4%			992	71.1%	466
3 to 4	127	18.8%	205	35.4%			140	19.4%	227	40.2%			267	19.1%	432
5 and above	5	0.7%	76	13.1%			4	0.6%	76	13.5%			9	0.6%	152
In the past month the teacher talked to students about nutrition														
Yes	460	68.1%	394	68.0%	0.970		495	68.7%	399	70.6%	0.447		955	68.4%	793
No	215	31.9%	185	32.0%			226	31.3%	166	29.4%			441	31.6%	351
Number of important nutrition habits mentioned														
None	251	37.2%	163	28.2%	<0.001		284	39.4%	154	27.3%	<0.001		535	38.3%	317
One	267	39.6%	143	24.7%			261	36.2%	134	23.7%			528	37.8%	277
Two	114	16.9%	126	21.8%			117	16.2%	121	21.4%			231	16.5%	247
Three and above	43	6.4%	147	25.4%			59	8.2%	156	27.6%			102	7.3%	303
Number of reasons why missed school														
Never missed	343	50.8%	382	66.0%	<0.001		366	50.8%	376	66.5%	<0.001		709	50.8%	758
One	289	42.8%	164	28.3%			304	42.2%	146	25.8%			593	42.5%	310
Two	41	6.1%	23	4.0%			48	6.7%	27	4.8%			89	6.4%	50
Three or more	2	0.3%	10	1.7%			3	0.4%	16	2.8%			5	0.4%	26
Number of reasons why it was difficult to concentrate in class														
Never missed	361	53.5%	331	57.2%	<0.001		387	53.7%	343	60.7%	<0.001		748	53.6%	674
One	234	34.7%	104	18.0%			245	34.0%	98	17.3%			479	34.3%	202
Two	72	10.7%	81	14.0%			74	10.3%	61	10.8%			146	10.5%	142
Three or more	8	1.2%	63	10.9%			15	2.1%	63	11.2%			23	1.6%	126
Number of most important benefits of education mentioned by the child														
<2	356	52.7%	138	23.8%	<0.001		383	53.1%	143	25.3%	<0.001		739	52.9%	281
2 to 3	299	44.3%	280	48.4%			306	42.4%	258	45.7%			605	43.3%	538
4 to 5	20	3.0%	93	16.1%			32	4.4%	68	12.0%			52	3.7%	161
6 and above	0	0.0%	68	11.7%			0	0.0%	96	17.0%			0	0.0%	164

Table 9b: Hygiene, nutrition, concentration in class, importance of education and school absenteeism distributed by WFPSMP and HGSMP stratified by gender of child

Variables	Male (n=1306)						Female (n=1284)						Total (n=2		HGS
	WFPSMP (n=593)		HGSMP (n=713)		p value		WFPSMP (n=541)		HGSMP (n=743)		p value		WFPSMP (n=1134)		HGS (n=14
In the past month the teacher talked to students about hygiene															
Yes	508	85.7%	629	88.2%	0.171		462	85.4%	631	84.9%	0.815		970	85.5%	1260
No	85	14.3%	84	11.8%			79	14.6%	112	15.1%			164	14.5%	196
Number of hygiene habits mentioned by the child															
None	39	6.6%	44	6.2%	**<0.001**		39	7.2%	64	8.6%	**<0.001**		78	6.9%	108
1 to 2	248	41.8%	520	72.9%			236	43.6%	526	70.8%			484	42.7%	1046
3 to 4	246	41.5%	139	19.5%			207	38.3%	142	19.1%			453	39.9%	281
5 and above	60	10.1%	10	1.4%			59	10.9%	11	1.5%			119	10.5%	21
In the past month the teacher talked to students about nutrition															
Yes	413	69.6%	479	67.2%	0.341		367	67.8%	500	67.3%	0.838		780	68.8%	979
No	180	30.4%	234	32.8%			174	32.2%	243	32.7%			354	31.2%	477
Number of important nutrition habits mentioned by the child															
None	125	21.1%	256	35.9%	**<0.001**		118	21.8%	278	37.4%	**<0.001**		243	21.4%	534
One	138	23.3%	267	37.4%			120	22.2%	282	38.0%			258	22.8%	549
Two	164	27.7%	109	15.3%			157	29.0%	105	14.1%			321	28.3%	214
Three and above	166	28.0%	81	11.4%			146	27.0%	78	10.5%			312	27.5%	159
Number of reasons why missed school															
Never missed	410	69.1%	342	48.0%	**<0.001**		359	66.4%	372	50.1%	**<0.001**		769	67.8%	714
One	159	26.8%	333	46.7%			143	26.4%	321	43.2%			302	26.6%	654
Two	17	2.9%	34	4.8%			26	4.8%	48	6.5%			43	3.8%	82
Three or more	7	1.2%	4	0.6%			13	2.4%	2	0.3%			20	1.8%	6
Number of reasons why it was difficult to concentrate in class															
Never missed	371	62.6%	390	54.7%	**<0.001**		339	62.7%	432	58.1%	**<0.001**		710	62.6%	822
One	105	17.7%	249	34.9%			101	18.7%	251	33.8%			206	18.2%	500
Two	66	11.1%	65	9.1%			63	11.6%	50	6.7%			129	11.4%	115
Three or more	51	8.6%	9	1.3%			38	7.0%	10	1.3%			89	7.8%	19
Number of most important benefits of education mentioned by the child															
<2	136	22.9%	342	48.0%	**<0.001**		122	22.6%	346	46.6%	**<0.001**		258	22.8%	688
2 to 3	313	52.8%	337	47.3%			281	51.9%	356	47.9%			594	52.4%	693
4 to 5	87	14.7%	34	4.8%			73	13.5%	38	5.1%			160	14.1%	72
6 and above	57	9.6%	0	0.0%			65	12.0%	3	0.4%			122	10.8%	3

Annex 9 – Computation of the Propensity Score

All variables whose distribution was significantly different (p<0.05) between the study arm (CONTROL, WFPSMP and HGSMP) were used to construct the propensity score.

The propensity score was constructed using the 'participation equation', derived from a logit regression with programme participation as the dependent va coded as follows;

- WFPSMP = 1, versus Control = 0.
- HGSMP = 1, versus WFPSMP = 0.

Comparison of key learning outcomes was adjusted for, using the propensity score quintiles.

Table 10a: Propensity score quintiles distributed by CONTROL and WFPSMP stratified by gender of the child

Variables	Male (n=1254)					Female (n=1286)					Total (n=2540)				
	CONTROL (n=675)		WFPSMP (n=579)		p value	CONTROL (n=721)		WFPSMP (n=565)		p value	CONTROL (n=1396)		WFPSMP (n=1144)		p value
Propensity score quintiles															
First	249	36.9%	1	0.2%	<0.001	257	35.6%	0	0.0%	<0.001	507	36.3%	1	0.1%	<0.001
Second	243	36.0%	8	1.4%		254	35.2%	4	0.7%		494	35.4%	14	1.2%	
Third	162	24.0%	89	15.4%		181	25.1%	76	13.5%		344	24.6%	164	14.3%	
Fourth	18	2.7%	233	40.2%		29	4.0%	228	40.4%		49	3.5%	459	40.1%	
Fifth	3	0.4%	248	42.8%		0	0.0%	257	45.5%		2	0.1%	506	44.2%	

Table 10b: Propensity score quintiles distributed by WFPSMP and HGSMP stratified by gender of the child

Variables	Male (n=1306)					Female (n=1284)					Total (n=2590)				
	WFPSMP (n=593)		HGSMP (n=713)		p value	WFPSMP (n=541)		HGSMP (n=743)		p value	WFPSMP (n=1134)		HGSMP (n=1456)		p value
Propensity score quintiles															
First	258	43.5%	4	0.6%	<0.001	252	46.6%	4	0.5%	<0.001	513	45.2%	5	0.3%	<0.001
Second	241	40.6%	20	2.8%		220	40.7%	37	5.0%		451	39.8%	67	4.6%	
Third	84	14.2%	177	24.8%		65	12.0%	192	25.8%		158	13.9%	360	24.7%	
Fourth	10	1.7%	251	35.2%		4	0.7%	253	34.1%		11	1.0%	507	34.8%	
Fifth	0	0.0%	261	36.6%		0	0.0%	257	34.6%		1	0.1%	517	35.5%	

Annex 10 - UWEZO 2016 results by county

1. UWEZO Midline evaluation has just been done (2016) following a baseline in 2015 (Table 6). The key results of the evaluation are that:

   - The Tusome approach is having a strong, positive influence on reading outcomes, with relationships between project implementation and reading outcomes.

   - Reading outcomes for Class 1 and 2 pupils greatly improved during the one-year period between the baseline and midline evaluations. While impressive gains have been made, continuing with the Tusome approach will be critical to sustaining or improving on those gains.

2. The table below shows the results of the 2016 Tusome project, with counties covered by this baseline shown in yellow.

Tusome (2016) County Ranks: Class 3 who can do Class 2 work

County Rank	County Name	OUTCOMES (Percentage)		
		Class 3 who can do class 2 Work	Teacher presence (%)	Pupil Presence (%)
1.	Nyeri	51.8	88.3	88.9
2.	Nairobi	50.8	86.7	92.2
3.	Mombasa	49.9	88.1	93.8
4.	Nyandarua	46.3	91.3	85.5
5.	Kajiado	42.3	83.9	88.1
6.	Homa bay	39.6	88.8	81.9
7.	Kiambu	39.5	87.6	90.5
8.	Laikipia	39.2	90.4	86.0
9.	Nandi	37.8	89.4	81.4
10.	Kirinyaga	36.1	90.1	94.8
11.	Uasin Gishu	35.3	81.4	88.8
12.	Taita Taveta	35.1	82.8	87.3
13.	Meru	35.0	90.6	87.2
14.	Muranga	33.1	92.1	91.3
15.	Tharaka Nithi	32.7	92.1	87.0
16.	Nyamira	31.8	85.9	88.2
17.	Elgeyo Marakwet	31.0	91.0	84.0
18.	Nakuru	30.9	82.4	89.6
19.	Kisumu	30.2	88.2	87.6
20.	Embu	29.5	86.7	86.6
21.	Kericho	29.0	92.7	88.5
22.	Migori	28.7	86.8	81.9
23.	Machakos	28.5	87.1	91.5
24.	Kisii	27.7	87.7	84.0
25.	Trans Nzoia	26.8	81.5	68.2
26.	Kitui	26.1	91.3	81.4
27.	Busia	25.9	88.5	84.1
28.	Kilifi	25.9	84.5	83.3
29.	Marsabit	24.5	90.5	92.5
30.	Makueni	24.1	91.7	89.0
31.	Siaya	23.9	85.7	83.5
32.	Kakamega	22.0	88.4	82.1
33.	Narok	21.4	89.3	85.1
34.	Kwale	21.1	89.1	82.5
35.	Vihiga	19.3	88.5	76.2
36.	Bomet	19.1	85.6	84.9
37.	Lamu	18.7	90.0	90.7
38.	Tana River	18.2	86.4	86.6
39.	Samburu	16.7	89.2	67.3
40.	Baringo	16.6	88.9	81.5
41.	Bungoma	15.4	89.6	83.0
42.	West Pokot	15.4	88.5	79.3
43.	Isiolo	15.4	88.5	89.8
44.	Garissa	15.3	86.1	83.9
45.	Turkana	12.9	83.9	76.7
46.	Mandera	10.1	89.0	77.7
47.	Wajir	9.9	89.2	83.6

Source: *Are Our Children Learning (2016)? UWEZO KENYA SIXTH LEARNING ASSESSMENT REPORT DECEMBER 2016*

🟩	Control or HGSMP Counties
🟨	WFSMP/MGD Counties

Acronyms

AOR – Adjusted Odds Ratio

ASALs-Arid and Semi-Arid Lands

BOM – Board of Management

CI – Confidence Interval

CSI – Coping Strategy Index

DID – Difference- in - Difference

DTL – Deputy Team Leader

DtWI – Deworm the World Initiative

ECDE – Early Childhood Development Education

ECD – Early Childhood Development

EMIS – Education Management Information Systems

FCS – Food Consumption Score

FEWS NET – Famine Early Warning Systems Network

FGD – Focus Group Discussion
GAIN –Global Alliance for Improved Nutrition

GoK – Government of Kenya

GPE – Global Partnership for Education

GPS – Global Positioning System

HGSMP – Home Grown School Meals Programme

HH – Household

IR – Inception Report

JKUAT – Jomo Kenyatta University of Agriculture and Technology

MGD – Mc Govern Dole

MoA, L&F- Ministry of Agriculture, Livestock and Fisheries

MOE – Ministry of Education

MoH – Ministry of Health

MS- Excel – Microsoft Excel

NGO- Non Governmental Organization

NSBDP- National School Based Deworming Programme.

ODK- Open Data Kit

PCD – Partnership for Child Development

PMF- Performance Measurement Framework

PMP- Performance Measurement Plan

PRIEDE - Kenya Primary Education Development Programme

PPS – Probability Proportionate to size

PSM- Propensity Score Matching

PSU- Primary Sampling Unit

PTA-Parents/Teachers Association

SO -Strategic Objective

SSU-Secondary Sampling Unit

SMC- School Management Committee

SMP- School Meals Programme

SNM- School Nutrition and Meals

SNMP- School Nutrition and Meals Programme

STH –Soil Transmitted Helminthes

TL- Team Leader

TOR- Terms of Reference

Tusome – (Let's Read in Kiswahili – refers to USAID/UKAID funded Early Grade Reading Activity)

UNICEF – United Nations Children's Education Fund

UKAID – United Kingdom Agency for International Development

USAID – United States Agency for International Development

USD – United States Dollars

USDA – United States Department of Agriculture

US – United States

UWEZO – Kiswahili for 'Capability'

VAM-Vulnerability Assessment Matrix

WASH – Water Sanitation and Health

WFP- World Food Programme

WFPSMP-World Food Programme School Meals Programme

WHO – World Health Organization