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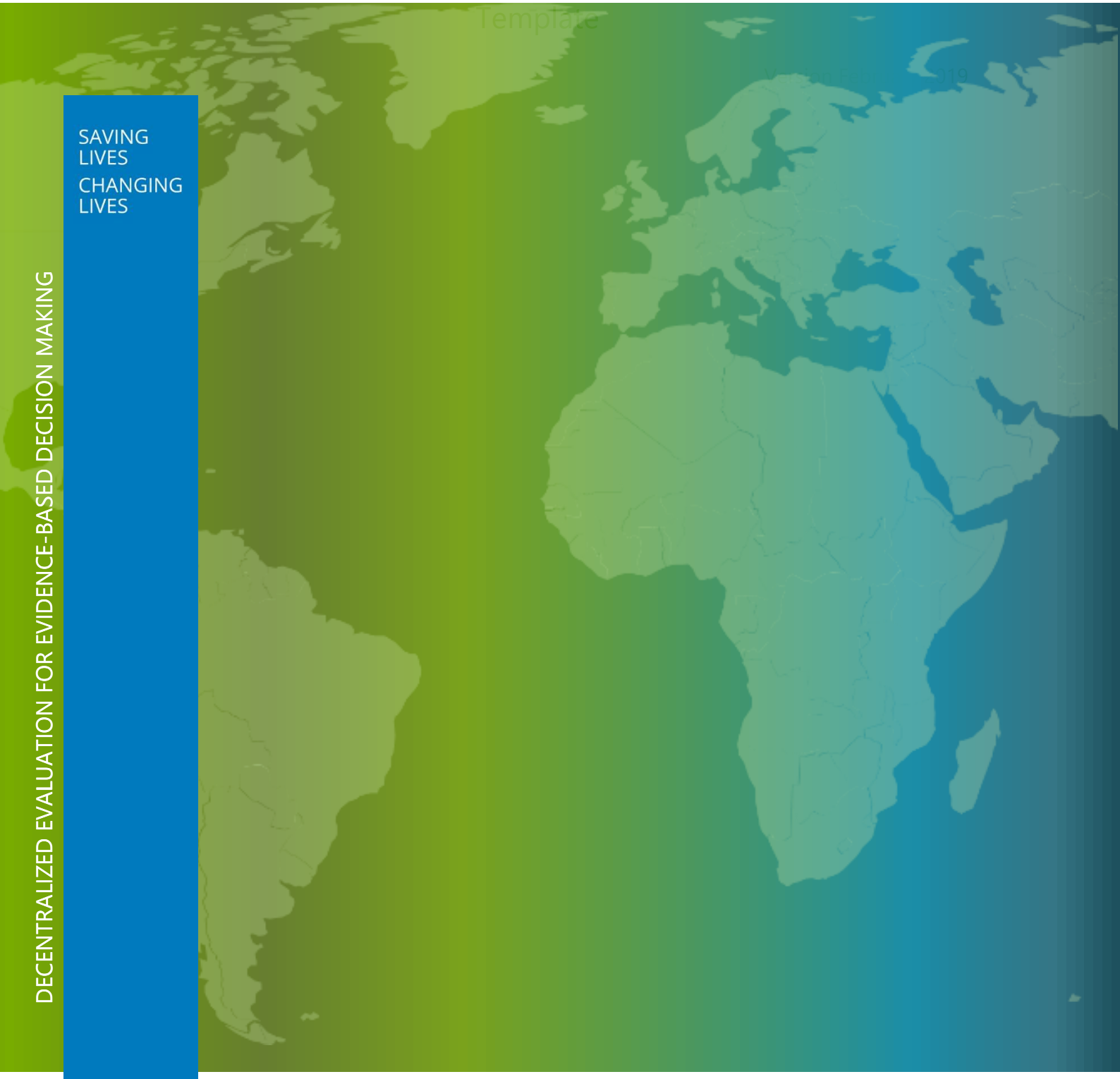

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DECENTRALIZED EVALUATION FOR EVIDENCE-BASED DECISION MAKING

Decentralized Impact Evaluation

The Nutrition-sensitive Aspect of the "Development of Sustainable School Feeding" Project in Armenia 2018-2019

Impact Evaluation Report

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Table of Contents

Table of Figures

Executive Summary

Background

School feeding programmes are credited with improving food security and encouraging primary school enrolment. Yet the role of such programmes may be evolving given progress in primary school participation. For example, in Armenia primary enrolment is virtually saturated. In partial contrast, the share of zero grade children in the country has been growing in recent years as a result of construction of preschool facilities funded by a World Bank investment. This provides a potential new role for the school feeding programme since the effects of missing meals on cognitive performance are well documented for younger children. This issue is particularly salient for preschool children who end their school day after lunch. For preschool children, the absence of breakfast at home or at school means that their cognitive performance may be adversely affected for the entirety of the time that they are engaged in learning. Global experience also indicates that the consequences of missing meals are generally larger for low income and malnourished children. It is therefore plausible that the impact of providing a school morning snack may be greater for these children.

The potential to improve children's developmental outcomes by providing a morning meal in conjunction with school lunch is an important question with significant policy implications for school feeding programmes both in Armenia and worldwide. The purpose of this study is to evaluate the addition of a morning snack to an existing school lunch programme in order to determine if this addition improves the attention and capacity for learning of preschool children, particularly among those who are at risk.

Thus, the WFP initiated a trial programme to provide children in three *marzes* (provinces/regions) – Lori, Gegharkunik, and Shirak - selected on the basis of poverty and anemia prevalence, with a small snack at the beginning of the school day. In order to rigorously test the impact of this programme a randomized control trial was implemented. Schools were randomized into a treatment group and a control group and the impact of the programme on both fluid intelligence (attention and processing speed) and crystalized intelligence (school readiness was assessed). The results of the trial are being shared with the WFP office in Yerevan as well as with key stakeholders

in the Armenian Government. As the Government refines its overall early child education strategy this information can be used to determine how to meet age specific needs of its students.

For the current study, all eligible primary schools with preschool [grade zero age three to five] programmes in each of the three study *marzes* were paired based on size and proximity and then randomly assigned to either receive the school morning snack pilot programme or to the control condition, operating as usual. Schools in the treatment group received a monthly stipend of 70 Armenian dram (AMD) per student per day (a USD equivalent of 0.15) to provide a small morning snack to all preschool children. This stipend was half of the cost for the school lunch programme. Schools were instructed to provide a snack of about 200 kcal around 9am, using a list of specified foods intended to promote dietary diversity. WFP monitors used existing systems to monitor implementation and fidelity of the school morning snack pilot programme in intervention communities in addition to the regular lunch programme.

Methodology

In the three *marzes*, 100 schools were paired, and one school within each pair was randomly assigned to treatment or control (50 in each arm) at the beginning of the school year (September 2018). The intervention was implemented in all treatment schools by the beginning of October 2018. One month after programme implementation (November 2018), 12 students from each preschool class were randomly selected for assessment of fluid intelligence shortly after snacks (in the treatment) and at the same time – approximately nine to ten- in the control schools. A school roster provided to the study team was used to randomly pre-select the 12 children, along with three replacements for each school. In schools with fewer than 12 students, all children in the class were assessed. The selected children were tested for school readiness in May 2019. The study received approval from Institutional Review Boards (IRBs) at Yerevan State University, the International Food Policy Research Institute [IFPRI] and the University of Michigan.

Child cognitive development was measured using various modules of the Wechsler Preschool and Primary Scale of Intelligence, Fourth Edition (WPPSI-IV; Wechsler, 2012) as well as components of the Bracken School Readiness Concepts assessment and the British Picture Vocabulary Scales. Each of the modules was pretested, with

instructions translated into Armenia (and back translated to ascertain fidelity). Although nutritional improvements for children in preschool were not outcomes expected in the theory of change, anthropometric measurements (heights and weights) were also collected during the May visits.

In addition to the direct testing of children, caregivers were interviewed in the November data collection. Data on household structure (number of adults and children), as well as participation in the Armenian Family Benefit Programme [FBP], a means tested cash transfer, and whether any family members migrated for work in the past year was collected in a questionnaire administered to the primary caregiver. Household wealth was imputed by calculating estimated expenditures using household data on ownership of 12 assets.

Parental measures included parent educational attainment (secondary school completion or less defined as zero and any-post secondary education or greater defined as one) and employment status (unemployed/ employed). Caregivers also reported on child sex, age, preschool enrollment in the prior year and attendance in the current year. In addition, caregivers were asked if the child had breakfast at home on the morning of testing.

The home learning environment was measured using questions from the Family Care Indicators on parent engagement in stimulation activities (i.e., told stores, sang songs, read books, counted or drew, took child outside the home, played) in the prior three days, and the number of children's books in the home. Aspects of the parent-child relationship, closeness and conflict, were measured using the Child-Parent Relationship Scale.

In addition, during the May visits to the schools, the headmasters in the treatment schools were asked about their experience in administering the snacks. They were also asked about their opinions regarding the usefulness of the programme and any suggestions they had to improve the programme in the future. Similarly, after the preliminary results from both rounds were circulated to key informants in Yerevan, these individuals were asked for their views.

Key Findings

Regarding Relevance: *'To what extent is the provision of school snacks at the beginning of the school day for preschool children (intervention henceforth) relevant to the Armenian context?'*

As nearly half of children in the *marzes* are not in the custom of having breakfast prior to coming to school, the programme serves an apparent need.

There are two substantial indications of the relevance of the programme in the local context. First, the study found that only 55 percent of the children aged three to five in the control groups in the three *marzes* received breakfast prior to attending school, implying that many arrive in school hungry. There is a slight statistically significant pattern by which children from higher expenditure households were more likely to have breakfast at home; neither maternal education nor child's gender were significant in this decision. Second, the tests of cognitive skills indicated a gradient of ability that strongly corresponded to household income and maternal education. That is, even in grade zero, some children are falling behind in a manner that may perpetuate poverty over generations.

Regarding Impact: *How much of the improvement of the children's cognitive and non-cognitive skill development can be attributed to the intervention?*

The snack programme reduced and often eliminated the gap in cognitive measures between the children in grade zero with the lowest weight for age or those from families with the lowest expenditures or from households with lower maternal education and the general population.

Given the randomization, differences between the treatment and control group can be considered causal and uncorrelated with any other differences in the communities or the schools. While there was only a small overall difference in fluid intelligence which was not statistically significant, the trial also found that test scores did increase significantly among children whose mothers had comparatively less education or who came from low expenditure households. Low expenditure in this case is relative to the average on the three *marzes*, which is itself about 30 percent lower than the national average. This implies that when a morning snack is provided it can offset some of pre-

existing differences in cognitive skills. This, then, reinforces another role of school feeding, that of increasing equity. The effect modifier for low expenditures, however, is only statistically significant when education is not also in the model.

Table 1 indicates the results when the results are allowed to differ with regards to gender, maternal education and household income. Noteworthy, when the average effect is modified by these subgroup effects the overall treatment effect is negative but not significant. However, the three modifiers for subgroups are all positive. For girls the initial advantage increases and the sum of the two positive gender coefficients is statistically significant. The sum of the coefficients for low expenditures is not significant, indicating that the programme reduced the pre-existing gap. This is also the case for children of lower educated mothers although the treatment modifier is significant.

The average treatment effect on the set of tests assessing crystalized intelligence (covering verbal fluency, receptive vocabulary, processing speed as well as five components of the Bracken School Readiness Score) was not significant. Nor were they differences for the children from the poorest or least educated families. However, there were significant treatment effects for the poorest quarter and the children of less educated mothers on test of verbal fluency. This was also the case for children who were in the lowest quartile for weight for age. No differences by gender were observed, nor were there any unintended impacts on children.

Regarding Effectiveness: *What were the major factors influencing the achievement or non-achievement of the objectives of the intervention?*

No logistical bottlenecks or difficulties with decentralized procurement were reported, however, some mechanisms of the programme implementation need to be further developed.

The programme did not have obvious start up issues. Ninety percent of the schools started snacks provision on or before October 1, 2018 and all did so by the end of that month. Virtually all schools provided eggs, cheese, and butter as part of the snack routine. Fresh fruits were also commonly provided. Overall, about half of all

commodities were purchased locally – with the percentage higher for fruits and vegetables than for other foods.

Regression models also explored the role of books in the household as well as a score on an index of family conflict (the Pianta conflict scale). The former had a positive impact on test scores while the latter played a negative role. This is in keeping with expectations and may also be considered an indication that the tests were able to capture relevant factors in child development.

However, the poor performance on letters, shapes, and numbers may be an indication that the preschool goals were more modest than assumed in the focus of the study on crystalized intelligence. As the role of snacks has been shown to interact with school organization, it is possible – but clearly unproven and not within the purview of the study – that such factors confounded the assessment of the snack pilot programme, *per se*.

Regarding Efficiency*: To what extent is the intervention cost-efficient? Was the intervention implemented efficiently?*

While schools indicated that an augmented budget would make it easier to administer the programme, the schools succeeded in delivering the programme with no clear gaps in snack provision.

Some delays were, however, noted in the timing of the snack which ideally should be provided early in the morning. The WFP monitoring teams carried out intensive monitoring of the snack pilot programme throughout its implementation. No complaints were received from any of the schools in the entire duration of the pilot.

There is, unfortunately, no way to assess the cost effectiveness of such a programme as the necessary comparator costs (for programmes with similar objectives) do not exist. It might be noted, however, that an earlier study in Armenia found that households who had middle school aged children that did not receive meals offered estimates of their daily meal cost. That study also obtained estimates of a household's assessment of how much it would cost per day to buy or prepare a school meal for children who did participate in a school feeding if these had not been provided. The

median value of both estimates was identical and well above the actual cost of the programme to the WFP.

Regarding Sustainability: *What would it cost to scale up or replicate the programme in other provinces? If the intervention should be extended/scaled up/replicated or handed over, what are the suggestions for the programme design changes?*

The snack programme can be important in the Armenian context and can be extended or scaled up.

Ninety-six percent of school administrators said that the programme was needed in Armenia and 89.6 percent of school administrators completely agreed that the school snacks programme should be continued in their school. The cost of scaling up would be roughly proportional to the enrolment covered, with the daily cost of USD0.15 per student being the main component. However, only a minority of the administrators [36.7 percent] felt that this amount was sufficient. Administrators commented particularly on this issue of funding for labor and materials. Given the share of preschool students in the country relative to the larger primary school population as well as the fact that the snack costs less per student than the lunches that are currently provided, a scale-up would add in the neighborhood of 10 percent to the total cost of schools feeding currently provided. This is likely sustainable.

Overall conclusions

The snack programme indicates particular promise in that it reduced and often eliminated the gap in cognitive measures between the children in grade zero with the lowest weight for age or those from families with the lowest expenditures or from households with lower maternal education and the general population. As such it can be important in the Armenian context and can be extended or scaled up.

To elaborate, the provision of morning snacks to preschool children proved popular both with families and with school administrators. No logistical bottlenecks or difficulties with decentralized procurement were reported. As nearly half of children in the *marzes* are not in the custom of having breakfast prior to coming to school, the programme serves an apparent need. Moreover, the snack assisted in closing the gaps

in processing speed, fluid reasoning, and short-term memory between less advantage children and their more affluent peers. This said, for reasons that are not readily apparent, there was no measurable cumulative effect on school readiness for the sample.

Thus, while the overall impact is ambiguous, there is no indication that the impact on learning and participation or on nutrition is not as large or larger than it is for the children that benefit from the existing school feeding programme. This is in keeping with the global evidence on the comparative responsiveness of young children.

Recommendations

Recommendation 1:

The WFP and the Government of Armenia could give serious consideration to including such preschool snacks as an integral component of the overall school feeding programme. There is a particular case for continuing the snack pilot programme in the three *marzes,* expanding it to include the schools in control group [as well as the initial treatment schools] for at least an additional school year. This not only is an ethical response to the necessary randomization, it provides an opportunity for additional assessment of the decentralized purchasing process and the cost of implementation. Any further decisions on either continuation of the programme in the poorest *marzes* or on scaling up of the preschool snack to be an integral part of the national basic education school feeding programme can utilize such information. That is, continuation in the control communities should be considered as a transitional step to designing a national Early Childhood Education Strategy that includes breakfast or a snack in the Sustainable School feeding strategy.

Recommendation 2:

As in many countries, the data show that levels of overweight are worrisome. The risk among preschool age children in this sample appears to be more in the high end of the double burden of malnutrition than in undernutrition, although various stakeholders appear to be primarily concerned with energy intake. This limited sample does not, of course, replace more comprehensive national data but does point to a need for a balanced school feeding strategy that stresses diet diversity more than total calories.

More comprehensive guidelines to school administrators in this regard may accompany the programme of local procurement.

Recommendation 3:

Towards this end, additional dietary assessment might be conducted to determine if either protein or calories are deficient in the preschool students. Note, however, that the snack pilot programme was designed to address short term hunger and low blood sugar rather than total calories or protein. Nevertheless, any continuation of the programmes needs to be conscious of the dual risks of undernutrition as well as obesity.

Recommendation 4:

The limited data obtained on the Bracken School Readiness Scores should be shared with the Ministry of Education [after any identifiers are removed] for their consideration in designing preschool curricula. Similarly, although the snack cannot address the issue of conflict and stress within a household that is reflected in the Pianta scale, experts on education in the ministry of education may use such data as part of a larger child welfare strategy as well as to identify any gaps in preschool preparation. This is a resource that can serve a purpose that goes beyond the goals of the IE.

1. Introduction

1.1. Context

Armenia is a landlocked, lower-middle-income, net food importer country of three million people, vulnerable to external shocks. Armenia ranks 81 out of 189 on the Human Development Index (HDI) and 57 out of 162 on the UNDP Gender Inequality Index in 2018.[1] As with neighbouring Caucasus countries, Armenia has a skewed sex ratio at birth with 111 boys born for every 100 girls.[2] However, the ratio of girls to boys in preschool and secondary education is above one and virtually one for primary schooling.[3]

The country observed a sharp slow-down of Gross Domestic Product (GDP) growth after the global economic crisis. This reflected, in part, the worsening economic situation in the region, and particularly in Russia – Armenia's largest trading partner and the main source of cash remittances for migrant workers. Despite macro-economic progress and structural reforms implemented during the last decade, growth has been weak and not always inclusive. Almost one in four Armenians (25.7 percent) lived below the poverty line in 2017, and there was a national poverty gap of 4.4 percent.[4]

Armenia's weak labour market and dilapidated infrastructure, triggers an overwhelmingly male-dominant emigration, where 35,000 Armenians migrate annually for seasonal labour.[5] Remittances made up 13.1 percent of GDP in 2016[6], which is combined with an high level of unemployment rate (18.0 percent).[7] There is a horizontal and vertical gender imbalance within the labour market in Armenia and persisting gender based disparities further restrict the opportunities for women to access economic resources, severely impeding Armenia's socio-economic development.[8]

According to national estimates, six percent of the Armenian population consumed an inadequate amount of calories needed to maintain an active and healthy lifestyle and were undernourished in 2015[9]. The level of food insecurity has been stagnant over the past five years, and there is growing disparity between the food insecure and the food secure. Fifteen percent of all households were food insecure in 2017, almost twice the level of 2008. The lack of access to economic resources and education are among the

drivers of persistent food insecurity: these factors leave households more vulnerable to the effects of economic shocks.[10] Even for those not qualified as food insecure, the quality of consumed food is often poor, as some 26 percent of households have diets with a high proportion of food energy from staples. The quality of Armenian diet was ranked as 186 (least healthy) out of 187 countries for higher consumption of ten more healthy items and ranked as 148 out of 187 countries for less consumption of seven unhealthy items.[11]

In addition, the current level of malnutrition and micronutrient deficiencies in Armenia present a public health concern. There is a dual burden of malnutrition among children under five, with a high share of children who are either stunted or overweight. While the Demographic and Health Survey (DHS) data indicate that stunting of children under five has dropped from 18 percent in 2005 to 9 percent in 2015 and anemia has declined from 24 percent to 16 percent in that span, the data are controversial, in part because it is difficult to ascertain what has driven such an improvement. Even in the most recent DHS survey there is wide disparities across *marzes*; anemia rates in Lori (33.6 percent) and Shirak (21.4 percent) are particularly alarming, especially as they are coupled with some of the nation's highest incidences of food insecurity and poverty.

The Government has developed strategic frameworks for poverty reduction and social protection, together with sector-specific policies and programmes intended to strengthen agricultural development and decrease malnutrition. However, policies and action plans specific to food security and nutrition tend to focus predominantly on food availability, primarily through agriculture and self-sufficiency considerations, while food accessibility and utilization issues remain major gaps at both policy and implementation levels[12]. With WFP's support, Government's plans are under way to further and substantially develop the "Sustainable School Feeding" Strategy.

The current programme for school feeing was initially administered by WFP with financial support from the Russian Federation. During the 2014-2015 school year, however, a gradual handover to the Government began. Following the first handover in two *marzes* in 2014, the government has expanded its role; a sixth *marz* was added to the Government's programme in September 2019. As of 2018, Yerevan is the only *marz* which is not covered by the programme. The programme has a modest impact

on food security and poverty,[13] but given that enrolment in primary school is mandatory the potential for an impact of the programme on enrolment is limited. Thus, there is a need to focus on learning rather than mainly on enrolment. As the grade zero schooling is expanding and as it is commonly maintained that preschools have a high potential to establish the foundation for subsequent schooling the WFP designed a pilot to explore one means that school assistance might contribute by addressing a hunger gap for very young children aged three to five.

1.2. Overview of the Evaluation Subject

The current study is the second phase of a project on the development of sustainable school feeding project in Armenia and a companion study to a previous study of the impact on poverty and consumption welfare. This study is a randomized control study of the impact of morning snacks for preschool children in three *marzes*. Funding for snacks were provided to 50 schools in these *marzes* chosen randomly with all enrolled preschools children in the school receiving daily snacks throughout the school year. The three *marzes* [Gegharkunik, Lori, and Shirak] were chosen of the basis of poverty and anemia prevalence.

A sample of children receiving the snack was the unit of analysis with each child in both the treatment and the control schools being tested for fluid intelligence in the beginning of the school year (October and November 2018) and tested again for school readiness at the end of the school year (April and May 2019). Details of the tests are provided under the Methodology section. The intervention proceeded as planned with no schools dropping out or otherwise suspending implementation.

Funding for implementation came from the Armenia office of the World Food Programme [WFP] and funding for the data collection and analysis was provided by a grant from the Contingency Fund of Evaluation of the WFP, through the support of the Regional Bureau situated in Cairo. The grant was approved in December 2018, with project officially closing in October 2019. The research was undertaken by the International Food Policy Research Institute in partnership with the Caucasus Research Resource Center-Armenia and the Department of Personality Psychology at the Yerevan State University. There was only a minor change in the research approach. Whereas, initially anemia rates were to be assessed for monitoring purposes (but not as a planned programme outcome) this aspect of the study was dropped at the request

of the Stakeholder committee. Both levels of the outcomes and treatment effects were assessed by gender.

1.3. Subject of the Impact Evaluation, Theory of Change, Activities, Outputs, Outcomes and Impacts

Currently, WFP's project provides hot, nutritious meals 180 days out of the school year to around 60,000 beneficiaries (46 percent are girls) in the four, including about 6,000 children studying in preschools (zero grade) that are adjacent to the secondary schools. The share of zero grade children in the programme has been growing in recent years as a result of construction of preschool facilities funding by a World Bank investment. The national programme reaches out to over 50,000 primary school children in Ararat, Syunik, Vayots Dzor, Tavush, Shirak and Aragatsotn *marzes*. The Government allocates 140 Armenian dram [USD 0.29] per child per day for the national programme.

The Operation (mid-term) Evaluation of Development of Sustainable School Feeding, DEV 2000128, recommended that Armenia Country Office should continue to invest in studies and research to underpin programme design.

Driven by this recommendation, the current evaluation assessed the impact of school feeding on learning. Globally school feeding has been credited with i) improved nutrition; ii) increased enrolment and attendance and; iii) increased learning in addition to the newer goal of promoting agricultural development. However, the impact of school programme on undernutrition is shown to be more important in very low-income settings[14] and the second historic role of school feeding is largely moot in Armenia given that enrolment is universal through to middle school. Thus, the long-term role of school feeding programmes in Armenia is likely to hinge on the potential to increase learning conditional on enrolment and that is currently unknown. This study was designed to gather information on a practical means to add value to national programme at an age when children are most responsive.[15] As it is widely believed that the returns to education are greatest in preschool years,[16] it follows that any such response can have long lasting impacts on a child's education.

To this end, the evaluation explored the impact of the provision of school snacks at the beginning of the school day to the classroom responsiveness of preschool-age children.

Roughly half of these children do not have a meal prior to attending school. Two principal outcomes were tracked: attention/concentration in midmorning in the first round of data collection and school readiness at the end of the preschool year. The global experience on similar programmes is mixed and highly context specific.[17] The relevance of this research theme for WFP and international development actors more broadly is confirmed by the number of additional studies and researches that are emerging.

As the study is a randomized controlled trial (RCT), strictly speaking there was no need for a baseline data. However, various socio-economic data were collected to control for any imbalance and to allow for analysis of heterogeneity. Moreover, data on nutrition status of preschool age children was collected for surveillance purpose. For the RCT, 50 schools were randomly assigned to the treatment group receiving school snacks and 50 schools were assigned to a control group. The total enrolment in grade zero in the 50 schools where the intervention was implemented was over 1000 individuals. Roughly half of the beneficiaries were girls and roughly half were boys. The majority of the children in grade zero were five years old, although a few entered at age four.

The WFP provided funds through direct cash transfers (USD0.15 per child per day ration calculation) to 50 schools in three *marzes* – Lori, Gegharkunik, and Shirak - to provide a snack to grade zero students at the start of the school day. The schools had freedom in developing the snack menus based on the list of recommended and prohibited food items for school snacks, developed jointly by WFP Armenia and the Ministry of Healthcare. The pilot snack provision programme ran for the entire 2018-9 school year.

The Theory of Change [ToC] presumes that the provision of school snacks at the beginning of the school day will increase attention in school in the short run and school readiness over the year. The corresponding evaluation matrix from the inception report is reproduced in the Annex. This is expressed in terms of relevance, effectiveness, efficiency, impact, and sustainability and has been modified to exclude the measurement of anemia.

2. Evaluation approach and methodology

2.1. Evaluation approach and methodology

Study design

This study was designed as a paired RCT with one intervention arm and one control arm. The study took place in three *marzes* in Armenia with the high rates of poverty and child anemia, Gegharkunik (48.8 percent), Lori (33.6 percent), and Shirak (21.4 percent).[18] All schools in the study area participated in a school lunch programme prior to the current study. The school feeding programme is administered by the Government of Armenia and the WFP and provides daily midday meals to primary schools across all *marzes* except Yerevan.[19] This programme was initiated in 2010 following the economic contraction in 2009 and has been administered by the WFP with financial support from the Russian Federation.

All eligible primary schools with preschool programmes in each of the three study *marzes* were paired on the basis of size and proximity and then randomly assigned to either receive the school morning snack pilot programme or to the control condition: operating as usual. Schools in the treatment arm received a monthly stipend of USD0.15 to provide a small morning snack to all preschool children. Schools were instructed to provide a snack of about 200kcal around 9am, using a list of specified foods intended to promote dietary diversity. WFP monitors used existing systems to monitor implementation and fidelity of the school morning snack pilot programme in intervention communities in addition to the regular lunch programme.

Schools were visited in November and the fluid intelligence (e.g. processing speed and attention) of the children in both the treatment and control schools was measured. The programme continued over the school year and cumulative learning was assessed in the final month of grade zero.

Study population and sample

In the three *marzes*, 129 schools were assessed for eligibility to participate in the study (see Figure 1). A total of 23 schools in the *marzes* were excluded from participation: 21 schools had existing morning meal (breakfast or snack) programmes in place administered by the local community and two schools had fewer than five children in

their preschool class based on the prior year's enrolment. The remaining 100 schools were paired, and one school within each pair was randomly assigned to treatment or control (50 in each arm) at the beginning of the school year (September 2018). The intervention was implemented in all treatment schools by the beginning of October 2018. One month after programme implementation (November 2018), 12 students from each preschool class were randomly selected for cognitive assessment. A school roster provided to the study team was used to randomly pre-select the 12 children, along with three replacements for each school. In schools with fewer than 12 students, all children in the class were assessed.

The data collection in both rounds was conducted by a team of psychologists (assessors) from Yerevan State University and interviewers from the Caucasus Research Resource Center. Children were excluded from selection for assessment if they had identified disabilities. On the day of testing, if a selected child was absent, ill or refused, a replacement child was substituted using a predetermined list. Children were assessed between 9:00am and 10:30am, shortly after the school snack was provided in treatment schools and before they received lunch.

One school was lost to the sample because the school taught children in Russian and most children did not speak Armenian. This resulted in 49 schools in the treatment arm, and 50 schools in the control arm that were analysed for programme effects. In the first round 20 children were excluded from analysis (10 control, 10 treatment) because the child was too ill to be assessed (k=10, five in each arm) or refused to participate (k=3 control, k=2 treatment) or the caregiver of the child refused to participate (k=5) and a replacement was not available. Additional nine children were excluded from analysis because they did not complete the child development assessments. This resulted in a sample of 951 children: 501 in the control arm, and 450 in the treatment arm. Power calculations indicate that the sample was adequate for the primary outcomes. The sample was challenged for additional subgroups. However, as all schools in the *marzes* were include and many had fewer students than the 12 used for the design, there was no practical strategy to increase the sample.

There was additional attrition in the second round – much of attributable to caregivers being involved in agricultural activities and, thus, not available to bring their child to school. Slightly fewer girls than boys were lost between rounds (six percent compared

to eight percent) but the difference is not statically significant. As household and parental data was only collected in the first round, it was not possible to randomly substitute for children who were not available in the second round. Thus, the second-round analysis had 470 children in the control and 422 from the treatment.

Measures

Child Measures

Child cognitive development was measured using the Wechsler Preschool and Primary Scale of Intelligence, Fourth Edition (WPPSI-IV; Wechsler, 2012). The battery uses images of items familiar to young children and the assessment is primarily non-verbal, which facilitated the translation and adaptation process for implementation in the Armenian cultural context.[20] The WPPSI-IV and previous editions have been used in over 20 countries around the world to assess non-verbal domains of fluid intelligence, including many low- and middle- income country (LMIC) contexts.[21] For example, the WPPSI has been used for assessment of early childhood development in the context of programme evaluations in several LMICs including Bangladesh[22] and Pakistan[23], and to assess children's fluid reasoning in Bangladesh, Brazil, India, Nepal, Pakistan, South Africa, Tanzania, and Turkey.[24]

Fluid intelligence is a broad category of child cognitive abilities drawn from the Cattell-Horn-Carrol (CHC) theory of cognitive abilities, one of the most widely regarded psychometric taxonomies.[25] We measured children's cognitive abilities in several interrelated domains, including *fluid reasoning* measures children's ability for solving problems, that require their use of inductive and deductive reasoning; *short-term memory*, the ability of a child to hold onto new information (marked by the number of items a child can retain) in the immediate (generally under a minute) time frame; and *processing speed,* the ability of a child to perform a basic task (marked by fluidity and accuracy) that requires a high degree of attention and focused concentration.[26]

To assess fluid intelligence (round 1) five subtests were administered across the three domains. The matrix reasoning and picture concepts subtests were used to assess fluid reasoning. Processing speed was assessed using the bug search and cancellation subtests, and short-term memory was assessed with the picture memory subtest. The standard instructions were translated into Armenian and back-translated by two

psychologists at Yerevan State University. The subtests were pretested among 62 children ages four to seven years (zero and first grades) in a non-study area. For the matrix reasoning subtest, one item was replaced after pretesting because the pictures were unfamiliar to children (i.e., squirrel and acorn was changed to rabbit and carrot). The WPPSI subtests demonstrated an acceptable degree of internal consistency as measured by Cronbach's alpha (matrix reasoning α=0.7405; picture concepts α=0.7338; picture memory α =0.7963). The WPPSI scores for each of the subtests were age normalized and summed to produce a summary z-score with a mean of zero and standard deviation of one. A total of nine children were excluded from analysis because they were missing WPPSI subtest scores: matrix reasoning had one child missing, picture concepts had two missing, bug search had four missing observations, cancellation had five missing, and six children were missing picture memory. One child was missing data on prior year enrolment, and three children were missing information as to whether they ate breakfast at home on the morning of testing. We imputed the community (school) average responses for these missing observations. No other child data was missing.

Household Questionnaire

Data on household structure (number of adults and children), as well as participation in the Armenian Family Benefit Programme [FBP], a means tested cash transfer, and whether any family members migrated for work in the past year was collected in a questionnaire administered to the primary caregiver during the first round of the survey. Estimated household expenditures were imputed using household data on ownership of 12 assets (e.g., computer, color TV, car/truck, hot water, washing machine). This estimation was based on a regression of national data on household expenditures on household assets in the Armenian Integrated Living Conditions Survey (Statistical Committee of the Republic of Armenia, 2016) that corresponded to the assets in the current data. The parameters from this estimate then were applied to the study data to calculate a measure of predicted expenditures for each household.

Parental measures included parent educational attainment (secondary school completion or less defined as zero and any-post secondary education or greater defined as one) and employment status (unemployed/ employed). Six mothers and 55 fathers were missing data on their educational attainment, and five mothers and 54

fathers were missing employment data. No other data on parent or household characteristics was missing. We imputed the community (school) average responses for the missing observations. Caregivers also reported on child sex (male/female), age (birthdate), preschool enrolment in the prior year (yes/no) and regular attendance in the current year (was the child absent in the past week, yes/no). In addition, caregivers were asked if the child had breakfast at home on the morning of testing (yes/no).

The home learning environment was measured using questions from the Family Care Indicators on parent engagement in stimulation activities (i.e., told stores, sang songs, read books, counted or drew, took child outside the home, played) in the prior three days, and the number of children's books in the home.[27] Five children were missing data on the number of books in the home, for which the community mean was used. Aspects of the parent-child relationship, closeness and conflict, were measured using the Child-Parent Relationship Scale.[28]

Preschool Quality

To account for variations in the school environment and educational quality, during the first round, 12 grade one children in each study school were assessed for school readiness. Most of these students would have been in the same school's preschool the previous school year. The Bracken Basic Concept Scales Third Edition - Receptive version[29] was used for this assessment. The Bracken Scales are designed to assess children's performance on concepts that predict how well they will perform in first grade.[30] The first six subtests were used. These assess children's knowledge of colors, shapes, sizes/comparisons, letters, numbers/counting, and direction/position. The Bracken has been widely used to assess school readiness in Canada, Australia and UK[31] along with other Eurasian populations.[32] The standard instructions were forward and backward translated to Armenian, and the assessment was pretested among a sample of children in a non-study community.

During round two (April and May 2019) crystalized intelligence was assess for the grade zero students who participated at round one assessment from the intervention and control schools were tested. The assessment consisted of components of cognitive tests for crystallized learning. Crystallized intelligence is broadly speaking the concrete knowledge that a child has formed. We assessed children's knowledge of important concepts for school readiness using the Bracken School Readiness Concepts

assessment (five subtests- colors, shapes, sizes/comparisons, letters, and numbers/counting), and their receptive vocabulary using the British Picture Vocabulary Scales. Children were also tested on their verbal fluency- which measures their knowledge of objects as well as their ability to retrieve items from memory- which consisted of two timed items (60 seconds each) asking children to list all the animals they know, and all the fruits and vegetables they know. Finally, the WPPSI cancellation subtest (measuring processing speed) was repeated. The Ravens Colored Progressive Matrices (RCPM) test of children's reasoning and problem-solving skills was excluded from the main assessment of round two due to very low scores in the pilot assessment. Additionally, during round two, students' height and weight were measured by nurses. This was for monitoring purposes only (per original protocols) and was not an outcome variable of the intervention.

The standard instructions for each of the assessments for round two were forward and backward translated by psychologists at Yerevan State University following the same procedure as round one. The British Picture Vocabulary Scales underwent a thorough translation process with input from preschool teachers on the translated stimulus items and was extensively pretested with preschool and first and second grade children in non-study areas to determine the suitability and difficulty of each of the words, which were then reordered according to difficulty for the main evaluation.

Finally, school administrators of the 49 treatment schools were surveyed in the second round. The survey was brief and assessed managerial and practical considerations of school snack introduction and provision.

Statistical Analysis

We used intention to treat analyses for statistical analysis. We examined the distribution of child, parent, household, and school characteristics to evaluate balance between the treatment and control group. We used OLS regression to determine the unadjusted treatment effects of the intervention on each of the WPPSI subtests and the summary score. In addition, we also studied the treatment effects of the intervention on child scores including control variables to account for differences between the treatment and control group. The control variables in the adjusted model were: a dummy variable indicating whether the child was enrolled in preschool in the prior year, father's employment, number of children's books in the home, number of

adults in the household, and school size and quality, the latter being the average of the Bracken scores of the children in grade one. These variables were included in all the adjusted models. For all models we used cluster-robust standard errors to account for the clustering of observations within schools and fixed effects for the *marzes*. In secondary analyses we tested whether mother's education, household expenditures, or child sex modified the effects of the school snack on children's cognitive development scores in separate models. All analyses were conducted using Stata 14 (StataCorp, L. P., 2016).

2.2. Limitations and risks

The sample size was restricted due to: i) the number of preschools in the three *marzes* and ii) the fact that many schools had fewer children than preferred for each cluster. The main response to this limitation was to focus on the quality of the data collection to reduce sample noise.

The trial employed randomization to identify the causal impact, but it did not conduct a baseline to utilize differences in differences. For this reason, the adjusted regression results were preferred to unadjusted differences as the additional correlates assist in controlling for any pre-existing differences in the communities. An additional limitation is that we were not able to collect precise data to confirm if the children in the study did, in fact, eat their snack; we conducted intent to treat analyses that examine programme effects based on group assignment rather than individual take-up. Finally, an aspect of this intervention that is both a strength and limitation is the implementation of the programme by schools. In many school feeding programmes in LMICs, commodities are provided to students by an NGO or other agency outside the ministry of education. In contrast, in the current study, schools were provided with funds and a list of approved foods from which they could choose; this promoted greater dietary diversity and programme sustainability although it also increased variability in the treatment between schools.

2.3. Quality assurance

WFP's Decentralized Evaluation Quality Assurance System provided oversight. As part of ensuring the independence and impartiality of the evaluation, an Evaluation Committee and the Evaluation Reference Group (ERG) was established. The ERG

members reviewed and commented on the draft evaluation products and acted as key informants in order to further safeguard against bias and influence.

There is a possibility that tests of cognition designed elsewhere have elements that are not suited to rural Armenia. The initial pretesting of the translated instruments was intended to pre-empt this concern. Additional indications on the cultural appropriateness of the instruments were obtained during training of the interviewers. Survey data was recorded using Computer-assisted personal interviewing (CAPI) tools to ensure consistency. The cognitive tests results, however, were recorded on scoring sheets and double entered to minimize entry errors.

2.4. Ethics

The study received approval from Institutional Review Boards [IRBs] at Yerevan State University, the International Food Policy Research Institute [IFPRI] and the University of Michigan.

3. Impact Evaluation Findings and Discussion

3.1. Regarding Relevance

'To what extent is the provision of school snacks at the beginning of the school day for preschool children (intervention henceforth) relevant to the Armenian context?' And 'To what extent is the intervention in line with the needs of preschool children?'

The study found that only 55 percent of the children aged three to five in the control groups in the three *marzes* received breakfast prior to attending school, implying that many arrive in school hungry (see Figure 2). One member of the Evaluation Reference Group felt that this issue should be addressed by persuading families to provide breakfast regularly. However, at this time the effectiveness of such a campaign is unknown.

Other indicators of the extent that the intervention was in line with the needs of the preschool children comes from the finding that both fluid and crystalized intelligence are associated with household expenditures and with the education of the mother. In

particular, children from households in the lowest quartile of expenditures in the control population score over half of a standard deviation (0.55SD) below their counterparts from higher expenditure (25^{th}-100^{th} percentile) households on the total test of fluid intelligence. This difference is statistically significant in multivariate regression with a p value <.01. That implies that there is less than a 1 percent chance that observation that these groups have different scores occurs by random selection from populations that are actually similar. A similar difference was observed between children whose mothers had secondary education or less compared (0.50SD lower scores) to those with mothers with higher education [p <.001], and among children whose mothers work (0.63SD, p<0.01).

A different indicator of suitability is in regard to the heterogeneity of the schools – which is a background to the overall context. The scores for crystalized intelligence of the grade one students is a significant explanatory variable for the scores of their younger counterparts. While it is not possible to confirm that this is strictly school quality as opposed to local fixed effects that are not captured in expenditures or education, the result points to a need to provide equal capabilities among schools. There was no indication that lower quality schools by the measure responded differently to the treatment than higher quality schools.

School administrators in the communities where the programme was implemented were virtually entirely supportive of the goals of the programme: 97.7 percent of school administrators agreed that the school snacks programme is important/needed for preschool. Most [89.6 percent] completely or partially [6.3 percent] agreed that the school snacks programme should be continued in their school.

The data collection also assessed nutritional status of children. This however, as not studined as an outcome of the interventions. The anthropmotrics were assessed in the second round. There was very little stunting– just under four percent - defined as more than two standard deviations below international [WHO] norms of height for age. The average height for age for the children was slightly negative at -0.34.

Similarly only a few children were underweight. However, 18 percent of the children were overweight and among these, 4 percent were obese by WHO classification.

3.2. Regarding Impact

How much of the improvement of the children's cognitive and non-cognitive skill development can be attributed to the intervention? Has the intervention resulted in any unintended impacts?

Given the randomization, differences between the treatment and control group can be considered causal and uncorrelated with any other differences in the communities or the schools. The randomization provided balance between the treatment and control group in regard to most child, parent, household, and school characteristics. Moreover, the differences between the pilot and the control were adjusted to assist in controlling for any pre-existing differences in the communities.

At approximately one-month after the programme began, children who received the morning snack had higher processing speed (β = 0.07, SE = 0.08, p = 0.364), fluid reasoning (β = 0.06, SE = 0.08, p = 0.411) and short term memory (β = 0.08, SE = 0.07, p = 0.271), on average, although in each case these differences in the unadjusted results were not statistically significant. There was a 0.21 standard deviations difference in total WPPSI score between the treatment and the control group; this difference was also not statistically significant (SE = 0.18, p = 0.243). There was little change in these differences when covariates were included in the regression; the estimated treatment effects remained the same and there were no appreciable changes in significance.

However, the trial also found that test scores did increase significantly among children whose mothers had comparatively less education or who came from low expenditure households (see Figure 3). Low expenditure in this case is relative to the average of the three *marzes*, which is itself about 30 percent lower than the national average. This implies that when a morning snack is provided it can offset some of pre-existing differences in cognitive skills. This, then, reinforces another role of school feeding, that of increasing equity.[33]

Figure 3, however, indicates results when the effect modifiers are studied individually. Table 1 indicates the results when all three effect modifiers are included. Noteworthy, when all three modifiers are included the overall treatment effect is negative but not significant. However, the three modifiers are all positive. For girls the initial advantage

increases and the sum of the two positive gender coefficients is statistically significant. The sum of the coefficients for low expenditures is not significant, indicating that the programme reduced the pre-existing gap. This is also the case for children of lower educated mothers although the treatment modifier is significant.

The results on cumulative impacts are less clear. Again, the average treatment effect on the set of tests (covering verbal fluency, receptive vocabulary, processing speed as well as five components of the Bracken School Readiness Score) is not significant. There is no difference in treatment effect for the poorest quarter of the population, or for children of less educated mothers in vocabulary, school readiness, or processing speed. There is, however, significant treatment effects for the poorest quarter (B=0.37, SE=0.14, p=0.012), and the children of less educated mothers (B=0.37, SE=0.14, p=0.008) for verbal fluency (see Figure 4). Similarly, this was also the case for children who were in the lowest quartile for weight for age. Noteworthy, children had particular difficulty recognizing letters, a component of the school readiness score. They were also more refusals in answering about numbers than for colors, shapes, and sizes.

Regarding gender: Girls performed 0.38 standard deviations better on the fluid intelligence assessment than boys, after controlling for household characteristics ($p<0.05$). However, girls did not perform better than boys on the assessment of crystalized intelligence overall [school readiness] and scored slightly lower on verbal fluency. There were no gender differences in the impact of either the treatment on fluid intelligence or the impact on crystalized intelligence.

There were also no unintended impacts on children. The pilot assumed that most children of the appropriate age attended preschools where they are available. As the sample was based on the school roster rather than a population listing or census this assumption was not tested. If the programme led to any increase enrolment or attendance, then this would result in an additional benefit not recorded in the current study.

3.3. Regarding Effectiveness

What were the major factors influencing the achievement or non-achievement of the objectives of the intervention? What were the unintended positive/negative results? To what extent the relevant assistance standards met?

The programme did not have obvious start up issues. Ninety percent of the schools started snacks on or before October 1, 2018 and all did so by the end of that month. Virtually all schools provided eggs, cheese, and butter as part of the snack routine (however, the frequency and amounts are not recorded). Fresh fruits were also commonly provided. Although it was discouraged administrators also indicated that most offered bread and jam. Oatmeal was provided in a third of the schools; however, it proved unpopular. Other than that, and bread, few grains were included as part of the snacks. Overall, about half of all commodities were purchased locally – with the percentage higher for fruits and vegetables than for other foods. While these locally purchased foods were not necessarily produced locally, the process is encouraging for the overall trend towards decentralization of procurement for school feeding programmes.

The difference between the percentage of children who had breakfast at home in the control communities and in the treatment was slight – roughly seven percent. While this difference was marginally statically significant at $p<0.06$, the majority of the food received as a snack can be viewed as additional to the child's diet. That is, few children substituted the school snack for food they would have otherwise received at home. This likely accounted for, or at least contributed to, the impact of the snack on fluid intelligence.

Slightly more mothers were employed in the treatment communities at the time of the first round than in the control communities [the difference was significant at $p< 0.08$; the research was not designed to assess if this was influenced by any activities in the preschool]. Regression analysis controlled for this difference; overall mother's employment had a negative impact on crystalized intelligence controlling for education and expenditures. This is in keeping with a subset of the mixed literature on early schooling. Conversely, father's employment was higher in the control communities although this had no measurable impact on the test scores. Regression models also explored the role of books in the household as well as a score on an index of family conflict (the Pianta conflict scale). The former had a positive impact on test scores while the latter played a negative role. This is in keeping with expectations and may also be considered an indication that the tests were able to capture relevant factors in child development.

However, the poor performance on letters, shapes, and numbers may be an indication that the preschool goals were more modest than assumed in the focus of the study on crystalized intelligence. As the role of snacks has been shown to interact with school organization, it is possible – but clearly unproven and not within the purview of the study – that such factors confounded the assessment of the snack pilot programme, *per se*.

3.4. Regarding Efficiency

To what extent is the intervention cost-efficient? Was the intervention implemented efficiently?

While schools indicated that an augmented budget would make it easier to administer the programme (not an unexpected managerial response), the schools succeeded in delivering the programme with no clear gaps in snack provision. Some delays were, however, noted in the timing of the snack which ideally should be provided early in the morning, but the frequency of such delays is not recorded.

Prior to the introduction of the pilot in the selected schools, WFP monitoring teams conducted an assessment to ensure the schools had the necessary infrastructure and capacity for the provision of the breakfast snacks. Most of the schools did not have a refrigerator but were willing to solve this issue to participate in the pilot. All headmasters of the participating schools received a training in local procurement laws and regulations, as well menu construction for the breakfast prior to the launch of the pilot. The WFP monitoring team carried out intensive monitoring of the snack pilot programme throughout its implementation. No complaints were received from any of the schools in the entire duration of the pilot.

There is, unfortunately, no way to assess the cost effectiveness of such a programme as the necessary comparator costs (for programmes with similar objectives) do not exist. It might be noted, however, that an earlier study in Armenia found that households who had middle school aged children that did not receive meals offered estimates of their daily meal cost. That study also obtained estimates of a household's assessment of how much it would cost per day to buy or prepare a school meal for children who did participate in a school feeding if these had not been provided. The

median value of both estimates was identical and well above the actual cost of the programme to the WFP.[34]

3.5. Regarding Sustainability

What would it cost to scale up or replicate the programme in other provinces? If the intervention should be extended/scaled up/replicated or handed over, what are the suggestions for the programme design changes?

The cost of scaling up would be roughly proportional to the enrolment covered, with the daily cost of USD0.15 per student being the main component. However, only a minority of the administrators [36.7 percent] felt that this amount was sufficient. This pilot did not provide any funds for equipment or labor (although a few schools received donations from within the community). Administrators commented particularly on this issue of funding for labor and materials. For example, 25.3 percent suggested funds for salaries for kitchen helpers, while 16.8 percent thought that there was a need for support to rennovate the kitchen/cafeteria or procure new equipment. It is not clear, in this response, whether this need was prompted by the snack or driven by inadequete infrastucture for lunches as hot meals were already provided to all primary school children in the sample as well as to the preschoolers in the treatment arm. In fact, the WFP is planning to support schools in Gegharkunik with kitchen/cafeteria renovation and equipment in 2019 as part of its transitional model. Additionally 21.1 percent of the administrators thought that additional funds would assist to diversify and improve the menu.

The members of the ERG were not sure that the USD0.15 would be sufficient. They indicated that if the programme were to be expanded (subject to an assessment of costs as well as additional dietary evaluation) the amount provided might be increased to ensure higher quality diets.

Given the share of preschool students in the country relative to the larger primary school population as well as the fact that the snack costs less per student than the lunches that are currently provided, a scale-up would add in the neighborhood of 10 percent to the total cost of schools meals currently provided. This is likely sustainable. There was no indication of any issues with the decentralized purchasing of foods, so no recommendations for major revision of implmentation are noted in the

administraive survey. There was some anecdotal reporting, however, that the snack was delayed beyond the 9am target, reducing its potential role in the classroom agenda.

As indicated, the study was not designed to assess the cirriculum. However, given that the country is still in the process of designing a preschool learning programme it might be useful to given some consideration to the difficulties the chidren had with letters, shapes, and numbers after a year of preschool classes.

4. Conclusions and Recommendations

4.1.Overall Assessment/Conclusions

The snack program indicates particular promise in that it reduced and often eliminated the gap in cognitive measures between the children in grade zero with the lowest weight for age or those from families with the lowest expenditures or from households with lower maternal education and the general population. As such it can be important in the Armenian context and can be extended or scaled up.

The provision of morning snacks to preschool children proved popular both with families and with school administrators. Ninety-six percent of school administrators said that the programme was needed in Armenia and 89.6 percent of school administrators completely agreed that the school snacks programme should be continued in their school. However, 77 percent of school administrators agreed that some changes should be made to the school snacks programme in their school. Among the suggestions were: provision of salaries for kitchen helpers (25.3 percent), diversification and improvement of the menu (21.1 percent), renovation of the kitchen/cafeteria (16.8 percent), procurement.

No logistical bottlenecks or difficulties with decentralized procurement were reported. As nearly half of children in the *marzes* are not in the custom of having breakfast prior to coming to school, the programme serves an apparent need. Moreover, the snack assisted in closing the gaps in processing speed, fluid reasoning, and short-term memory between less advantage children and their more affluent peers. This said, for

reasons that are not readily apparent, there was no measurable cumulative effect on school readiness for the sample as a whole.

Thus, while the overall impact is ambiguous, there is no indication that the impact on learning and participation or on nutrition is not as large or larger than it is for the children that benefit from the existing school feeding programme. This is in keeping with the global evidence on the comparative responsiveness of young children.

4.2. Recommendations

Recommendation 1

The WFP and the Government of Armenia could give serious consideration to including such preschool snacks as an integral component of the overall school feeding programme. There is a particular case for continuing the snack pilot programme in the three *marzes*, expanding it to include the schools in control group [as well as the initial treatment schools] for at least an additional school year. This not only is an ethical response to the necessary randomization, it provides an opportunity for additional assessment of the decentralized purchasing process and the cost of implementation. Any further decisions on either continuation of the programme in the poorest *marzes* or on scaling up of the preschool snack to be an integral part of the national basic education school feeding programme can utilize such information. That is, continuation in the control communities should be considered as a transitional step to designing a national Early Childhood Education Strategy that includes breakfast or a snack in the Sustainable School feeding strategy.

Recommendation 2

As in many countries, the data show that levels of overweight are worrisome. The risk among preschool age children in this sample appears to be more in the high end of the double burden of malnutrition than in undernutrition, although various stakeholders appear to be primarily concerned with energy intake. This limited sample does not, of course, replace more comprehensive national data but does point to a need for a balanced school feeding strategy that stresses diet diversity more than total calories. More comprehensive guidelines to school administrators in this regard may accompany the programme of local procurement.

Recommendation 3

Towards this end, additional dietary assessment might be conducted to determine if either protein or calories are deficient in the preschool students. Note, however, that the snack pilot programme was designed to address short term hunger and low blood sugar rather than total calories or protein. Nevertheless, any continuation of the programmes needs to be conscious of the dual risks of undernutrition as well as obesity.

Recommendation 4

The limited data obtained on the Bracken School Readiness Scores should be shared with the Ministry of Education [after any identifiers are removed] for their consideration in designing preschool curricula. Similarly, although the snack cannot address the issue of conflict and stress within a household that is reflected in the Pianta scale, experts on education in the ministry of education may use such data as part of a larger child welfare strategy as well as to identify any gaps in preschool preparation. This is a resource that can serve a purpose that goes beyond the goals of the IE.

Annexes

Annex 1: Tables and figures

Table 1. Effect modifiers on WPPSI scores adjusted for baseline covariates (n=951)

	Modifier			Interaction Effect			Significance of Total Effect of Modifier	
	β	S.E.	p	β	S.E.	p	F	p
Processing Speed								
Child is female	0.15	0.08	0.079	0.18	0.13	0.154	11.38	0.001
Lowest household expenditures	-0.19	0.12	0.112	0.02	0.15	0.889	2.26	0.136
Mother completed secondary school or less	-0.31	0.09	0.001	0.17	0.14	0.229	1.68	0.198
Fluid Reasoning								
Child is female	0.05	0.10	0.644	-0.06	0.14	0.699	0.01	0.923
Lowest household expenditures	-0.23	0.11	0.043	0.11	0.16	0.492	0.79	0.375
Mother completed secondary school or less	-0.33	0.09	<0.001	0.23	0.15	0.116	0.71	0.403
Short Term Memory								
Child is female	-0.003	0.10	0.979	0.27	0.13	0.039	9.64	0.003
Lowest household expenditures	-0.26	0.11	0.018	0.23	0.14	0.120	0.08	0.777
Mother completed secondary school or less	-0.45	0.08	<0.001	0.31	0.11	0.009	2.56	0.113
Total WPPSI								
Child is a female	0.19	0.22	0.382	0.40	0.32	0.211	6.27	0.014
lowest household expenditures	-0.67	0.24	0.006	0.36	0.35	0.314	1.17	0.283
Mother completed secondary school or less	-1.09	0.18	<0.001	0.71	0.31	0.024	2.15	0.145

Note. Lowest household expenditures is the bottom 25th percentile of expected expenditures (Armenian Dram in logarithms). Child cognition scores were measured using the Wechsler Preschool and Primary Scale of Intelligence, fourth edition (WPPSI). Scores are age-adjusted z-scores with a mean of 0 and standard deviation of 10. The total WPPSI score is a summary score of five subtests across three domains (processing speed, fluid reasoning, and short-term memory). All models are intent to treat, and include variables that were not balanced at baseline between the treatment and control group (preschool attendance in the previous year, father employment, number of children's books, number of adults in the household, participation in the Armenian Family Benefit programme, number of children tested per school), and a school quality indicator using the average score of grade 1 students on the Bracken Basic Concept Scale-3rd edition, receptive version. All models include region fixed effects and robust standard errors accounting for clustering at the school level. For each outcome, all interactions were examined in one adjusted model. Post-estimation Wald tests were used to test if the summed coefficients for each modifier is equal to 0.

Figure 1. Consort flow diagram

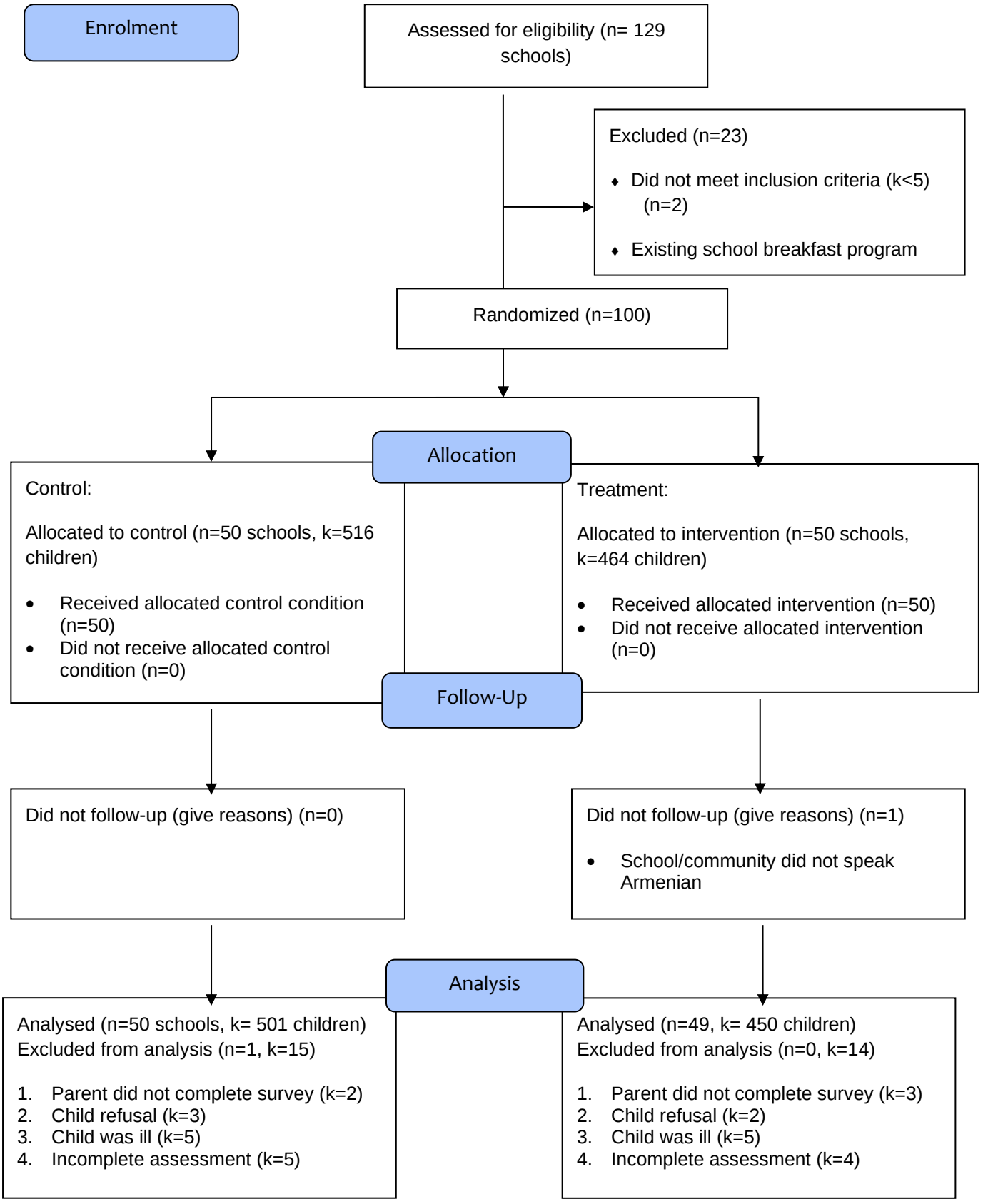
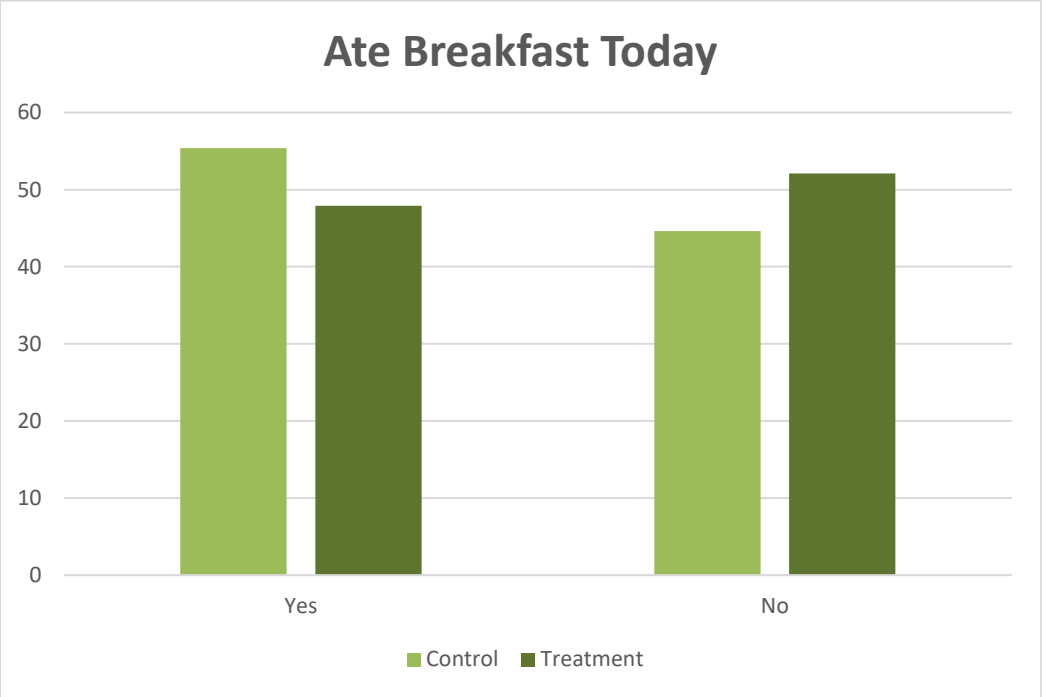
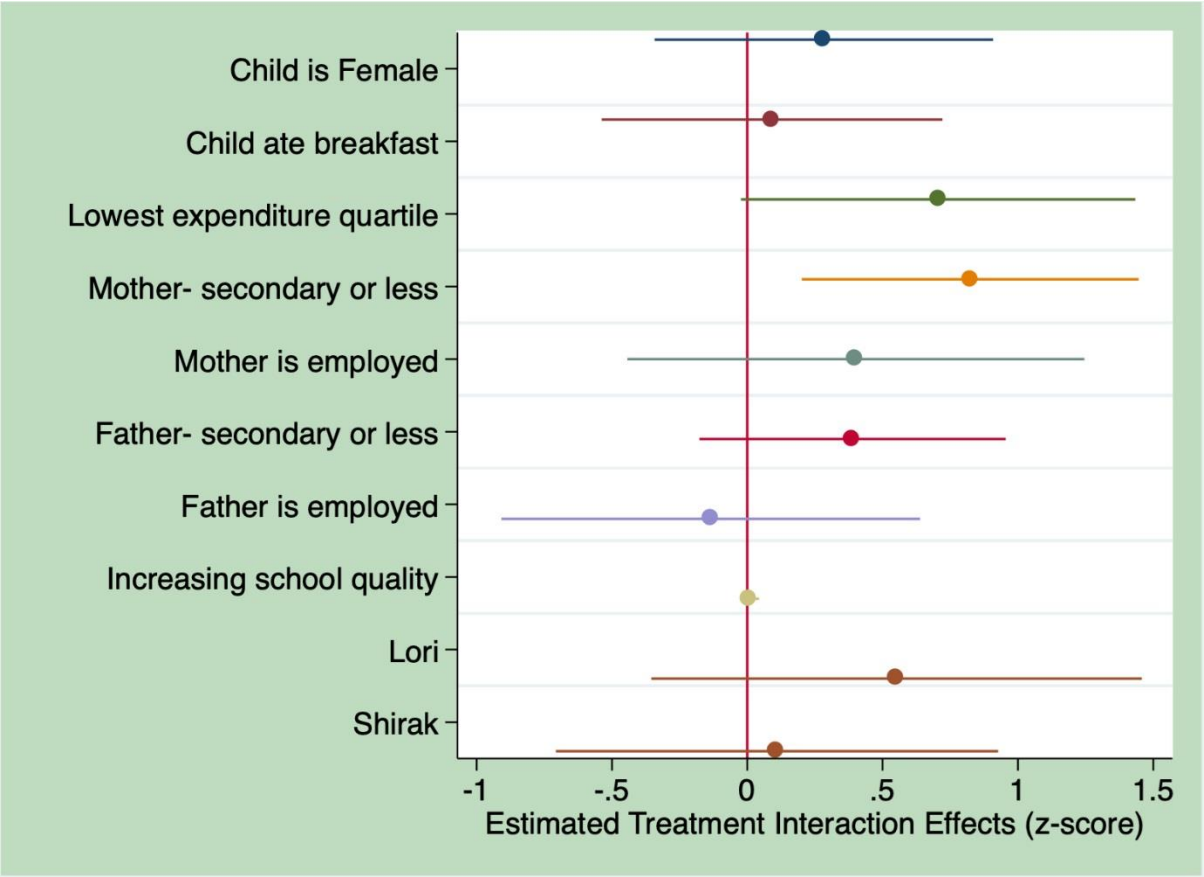


Figure 2. Evidence of hunger gap among children in schools that participated in the morning snack pilot programme (treatment) and those that did not (control).



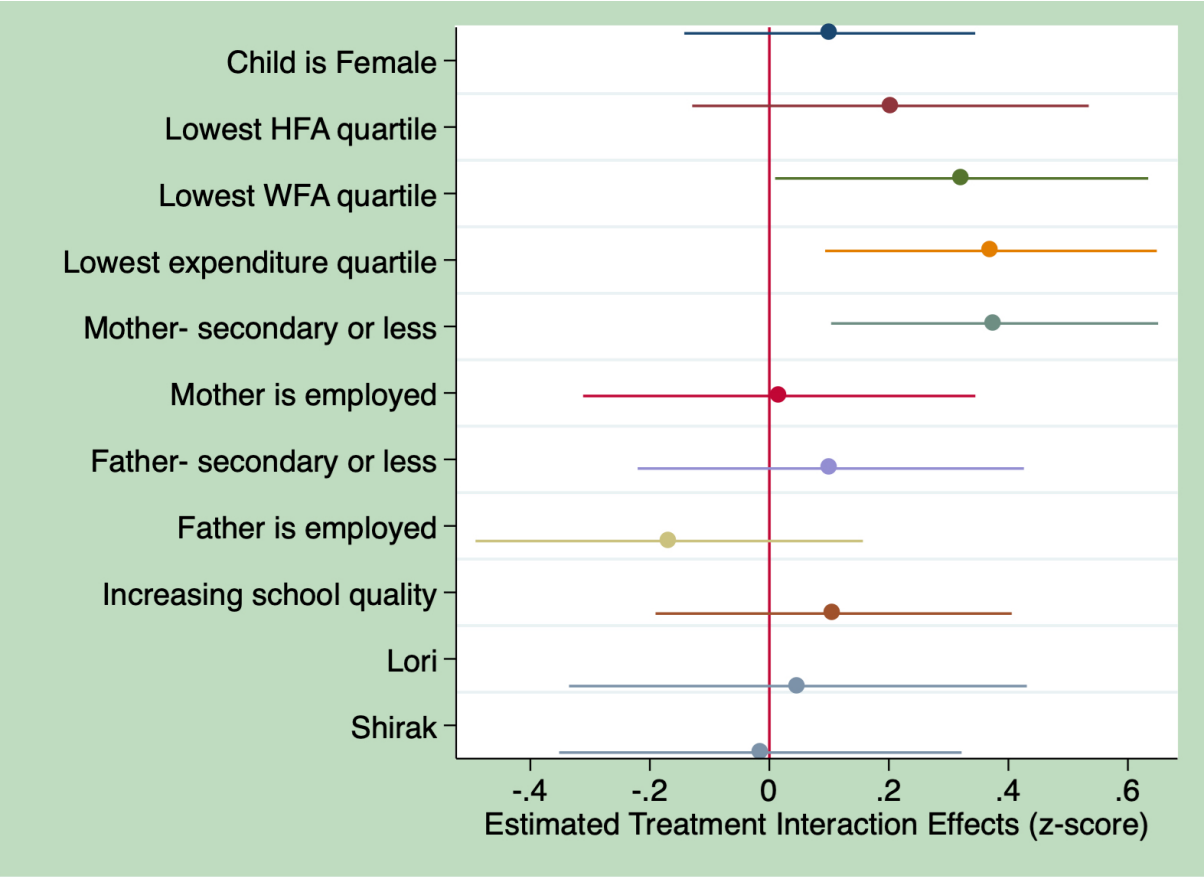
Note. At round 1, parents were asked to report if their child ate breakfast that morning. Household surveys were conducted on the same day as child assessments.

Figure 3. Interaction effects between morning snack pilot programme and child, family, and community characteristics on fluid intelligence at one month follow up



Note. The graph represents point estimates and confidence intervals of variations in treatment effect based on child, family, and community characteristics. Expenditures are estimated in logarithm. Mother and father's education (secondary or less) are compared to some college or more. School quality is measured as a school average score of the Bracken School Readiness Composite. Effects are measured on a summary z-score (adjusted for child age) of the total score of the Wechsler Preschool and Primary Scales of Intelligence (WPPSI).

Figure 4. Interaction effects between morning snack pilot programme and child, family, and community characteristics on verbal fluency at 9-months follow up.



Note. HFA is child height-for-age z-score. WFA is child weight-for-age z-score. HFA and WFA are based on World Health Organization growth standards. Expenditures are in logarithms. Mother and father's education (secondary or less) are compared to some college or more. School quality is measured as a school average score of the Bracken School Readiness Composite. Effects are measured on a summary z-score (adjusted for child age) of the child's total correct responses to a 2-item verbal fluency test, in which the child named all the animals, and fruits/vegetables he or she could recall in 60 seconds.

Annex 2: Evaluation Matrix

Evaluation criterion: Relevance					
Sub-questions	**Measure/Indicator of progress**	**Main Sources of Data/ Information**	**Data Collection Methods**	**Data Analysis Methods/ Triangulation**	**Evidence availability/ reliability**
• To what extent is the provision of school snacks at the beginning of the school day for preschool children (intervention henceforth) relevant to the Armenian context? • To what extent is the intervention in line with the needs of preschool children? • To what extent is the intervention aligned with the needs and priories of the government of Armenia?	• Stakeholder perceptions regarding the intervention • % of school administrators who say that the intervention was relevant to the met their needs Armenian context • % of school administrators who say that the intervention was in line with the needs of preschool children • Level of agreement of the Evaluation Reference Group (ERG) members on alignment of the intervention to the needs and priorities of Armenia • Prevalence of stunting, wasting and overweight among selected preschool children (for monitoring purposes	• Data from the school administrators' survey • Data from the Focus Group discussion with the ERG members • Data from the anthropometry measurements	• 95.9% of school administrators said that the programme is needed in Armenia. • 97.7% of school administrators agreed that the school snacks programme is important/needed for preschool. • 89.6% of school administrators completely agreed that the school snacks programme should be continued in their school. Focus Group discussion • Anthropometry	• Statistical analysis of the survey data • Correlation with other indicators, such as the cognitive tests results • Narrative analysis of secondary data • Discourse analysis of the focus group	• 3=strong or 2=fair

	only; this is not a measures of programme impact to be studied)				
Evaluation criterion: Effectiveness					
Sub-questions	**Measure/Indicator of progress**	**Main Sources of Data/ Information**	**Data Collection Methods**	**Data Analysis Methods/ Triangulation**	**Evidence availability/ reliability**
• What were the major factors influencing the achievement or non-achievement of the objectives of the intervention? • What were the unintended positive/negative results? • To what extent the relevant assistance standards met?	• % of children that received the snack as planned • N of complaints and praise received from parents	• Data from the school administrators' survey • Data from the regular process monitoring • Weekly monitoring updates	• Monitoring visits (data collected via developed monitoring forms) • Informal discussion with the parents	• Statistical analysis of the monitoring data • Discourse analysis of the weekly monitoring updates	3=strong or 2=fair
Evaluation criterion: Efficiency					
Sub-questions	**Measure/Indicator of progress**	**Main Sources of Data/ Information**	**Data Collection Methods**	**Data Analysis Methods/ Triangulation**	**Evidence availability/ reliability**
• To what extent is the intervention cost-efficient? • Was the intervention implemented efficiently?	• % of school administrators who say that the intervention was implemented efficiently • N of complaints and praise received from parents	• Data from the school administrators' survey • Weekly monitoring updates	• 36.7% of school administrators agreed that 70AMD/child/day budget for the implementation of the school snacks was sufficient, among them 14.3%	• Statistical analysis of the survey data • Discourse analysis of the weekly monitoring updates	3=strong or 2=fair

			completely agreed on this. • 77% of school administrators agreed that some changes should be made to the school snacks programme in their school. Among the suggestions were: provision of salaries for kitchen helpers (25.3%), diversification and improvement of the menu (21.1%), repairs and renovation of the kitchen/cafeteria (16.8%), procurement of new kitchen equipment (16.8%), etc. • Informal discussion with the parents		

Evaluation criterion: Impact					
Sub-questions	**Measure/Indicator of progress**	**Main Sources of Data/ Information**	**Data Collection Methods**	**Data Analysis Methods/ Triangulation**	**Evidence availability/ reliability**
• How much of the improvement of the children's cognitive and non-cognitive skill development can be attributed to the intervention? • Has the intervention resulted in any unintended impacts? • What were the gender-specific impacts of the interventions?	• Difference in the Fluid intelligence between the treatment and control groups as a function of Standard Deviation (effect size) • Difference in the Crystalized intelligence between the treatment and control groups as a function of Standard Deviation (effect size) • Differences of the test results between boys and girls •	• Direct testing of children in school settings at beginning and end of 2018/9 school year • Measurement of children in school year	• Wechsler Preschool and Primary Scale of Intelligence (details in section 4.3) • Ravens Colored Progressive Matrices • British Picture Vocabulary Scales • Bracken School Readiness Composite (15 min)- five subtests that assess knowledge of colors, letters, numbers/counting, shapes, and sizes/comparisons. • Brief caregiver survey to gain information on cofounders such as education and migration patterns	• Statistical analysis of the tests results data • Variance will be reduced [statistical power increased] using ANCOVA analysis with impact on girls and boys analysed separately	3=strong

Evaluation criterion: Sustainability					
Sub-questions	**Measure/Indicator of progress**	**Main Sources of Data/ Information**	**Data Collection Methods**	**Data Analysis Methods/ Triangulation**	**Evidence availability/ reliability**
• Should the interventions be scaled up or replicated in other provinces and if so at what cost? • If the intervention should be extended/scaled up/replicated or handed over, what are the suggestions for the programme design changes?	• % of school administrators who say that intervention should be scaled up or replicated in other provinces • % of school administrators who say that the implementation of the intervention with the planed cost is feasible • Level of support of the intervention by the ERG members	• Data from the school administrators' survey • Data from the Focus Group discussion with the ERG members • Data from the regular process monitoring	• 83.3 of school administrators completely agreed that the school snacks programme should be replicated in other provinces. • Focus Group discussion • Monitoring visits (data collected via developed monitoring forms)	• Statistical analysis of the survey data • Discourse analysis of the focus group • Statistical analysis of the monitoring data	3=strong or 2=fair

The Theory of Change [ToC] presumes that the intervention will increase attention in school in the short run and school readiness over the year. While there are gender differences in school enrolment, particularly in secondary school there is no expectation in the ToC that there will be gender differences in Grade 0. Much of the literature on school performance finds that *conditional on enrolment or attendance* girls perform as well or often better than boys [Alderman, Harold and Elizabeth King. Gender Differences in Parental Investment in Education. Structural Change and Economic Dynamics. 9(4): 453-468. 1998.]. The literature on female empowerment finds that differences in resources by gender can influence consumption [Alderman, H., P. A. Chiappori, L. Haddad, J. Hoddinott, R. Kanbur. Unitary Versus Collective Models of the Household: Time to Shift the Burden of Proof? World Bank Research Observer 10(1): 1-20. 1995.] and production decisions [Udry, C., J. Hoddinott, H. Alderman, and L. Haddad. Gender Differentials in Farm Productivity: Implications for Household Efficiency and Agricultural Policy. Food Policy 20(5): 407-423. 1995.]. However, there is no evidence that a transfer the size of the value of the snack to be provided – a little over US$5 per capita for the full year for a family of 5- will influence such decisions. Thus, the ToC does not include an expectation of a gendered difference in impacts to be studied.

Annex 3: Data Collection Tools

The cognitive test were adapted from standard tools that are licenced and are named in the main body of the report. These were adapted and translated into Armenian. However, many of the modules such as the Raven's progressive colored matrices are non-verbal. As these instruments involve pictures they are voluminous. Because the cognitive tests are licenced, dissemination of the adapted tests beyond the research team, is prohibited therefore only appropriate websites are referred in this report:

https://www.pearsonclinical.com/psychology/products/100000098/ravens-coloured-progressive-matrices-cpm.html

https://www.pearsonclinical.com/childhood/products/100000225/bracken-basic-concept-scale--third-edition-receptive-bbcs-3r.html

https://www.gl-assessment.co.uk/products/british-picture-vocabulary-scale-bpvs3/

https://www.hmhco.com/programmes/woodcock-johnson-iv

School Administration Survey

The Role of School Snacks in School Performance of Preschool Children in Armenia
School Administration Survey

1. Background Information				
Interviewer Information	1	Interviewer code	2	Questionnaire number (to be completed by data entry operator): |__|__|
	3	Date of interview	|__|__| / |__|__| /|__|__|__|__| Day Month Year	
School information	4	School number School ID School address/location	|_____| |__|__|__|__|__| |__|	
	5	Sex of the respondent	1=Male 2=Female	
	6	Level of education completed by the respondent (select all that apply)	1=University education (in Armenia) 2=University education (from abroad) 2=Post-graduate scientific degree 99=DK 88=RA	
	7	Status of the interviewee	1=Headmaster 2=Other administrative staff member, specify	
	8	Number of years the respondent held the position of the headmaster/administrator at the mentioned school		

[INTERVIEWER! AS YOU REACH THE SCHOOL, GO TO THE HEADMASTER OF THE SCHOOL AND INTRODUCE YOURSELF. MEMORIZE THE FOLLOWING TEXT AND ADDRESS IT TO THE HEADMASTER. IF THE HEADMASTER OF THE SCHOOL REFUSES TO PARTICIPATE AT ANY POINT DURING THE INTRODUCTION, PROVIDE THIS INFORMATION IN THE INTERVIEWER FORM.]

Hello, my name is /last name and first name/ and I represent the Caucasus Research Resource Center Armenia Foundation, a non-profit independent research organization in Armenia. We, together with the International Food Policy Institute and World Food Programme (WFP) Armenia office, are conducting a research on the school snacks provision in Armenia. Your school was selected as you are one of the schools that receive snacks for research purposes, and we would very much appreciate if you could allocate time to answer some questions about your school and the school snacks provision programme you are implementing.

2. School Snacks Programme and Choice of Suppliers	
1	When did the school snacks programme commence in the school? Day/Month/Year
2	**2.1. Is this programme still running?** 1. Yes 2. No

	2.2. If no, when did you stop, write the day/month/year 2.3. Why did you stop the implementation of the programme? **[INTERVIEWER! Do not read out, select all that apply.]** 1= Infrastructure problems 2=Insufficient funds 3=No interest among students 4=Compliance with sanitary and hygienic requirements 5=Problems with the supply of products from suppliers 6= Lack of parents' engagement in the organization of school meals 7=Insufficient time **[INTERVIEWER! If the answer was no and the respondent has indicated the date and reasons for stopping the programme, thank the respondent and quit the survey.]**									
3	**Please indicate did you include the mentioned food in the programme? (if yes, please mention the frequency of purchasing the food and if the food is purchased locally)**	**No**	**Yes** $\longrightarrow$	**Every day**	**Three or Four Times a Week**	**Once or Twice a Week**	**Once a week**	**Once or Twice a Month**	**Is the food purchased locally? [INETRVIEWER!** Define local precurment as instanced when the food is bought only from local/community suppliers, not e.g. local supermarket.**]**	
									Yes	**No**
	1=Oatmeal									
	2=Vegetables (beetroot, carrot, cabbage, pumpkin, green pepper)									
	3= Fresh fruits (apple, pear, peach, banana)									
	4=Dried fruits-apricot (plum, apple, peach)									
	5=Dried fruits – raisins									
	6=Pasteurized milk									
	7=Matsun (yogurt)									
	8=Cheese									
	9=Butter									
	10=Eggs									
	11=Sugar									
	12=Industry produced jam									
	13=Vegitable oil									
	14=Cocoa									
	15=Herbal tea									
	16=Bread									
	17=Salt									
	18=Nuts									
	19=Honey									
	20=Cookies/sweets									
	21=Juice									
	22=Cereals									
	23=Poultry									
	24=Other(specify)									
4	**Are you procuring snacks from the same supplier as for the school meals?** 1=Yes 2=No 3=Do not procure for school meals 99=DK									

	88=RA
5	**How important are the following criteria for you when choosing a supplier for the school snacks? Please use 1-5 scale, where "1" means "not important at all" and "5"-"very important"**

Criteria	**5 Very Important**	**4**	**3**	**2**	**1 Not important at all**
1. The supplier I chose was the only option I have					
2. Price of the food					
3. Local production/production conditions					
4. Quality of the product					
5. Reliability of supply					
6. Other (specify)					

6	**What are the main factors you take into account while choosing what kind of food to buy (up to 2 answers)?** 1=Nutrients 2=Vitamins 3=Food value 4=Children's preferences 5=Cooks preferences 6=Other, please specify
3. Procurement Details	
1	**Which procurement method(s) do you use to procure food for the school snacks? [INTERVIEWER! Select all that apply.]** 1=Tender 2= Procurement from one supplier 3=Other(specify)
2	**Since the start of the snacks programme, from which suppliers have you bought food products? [INTERVIEWER! Select all that apply.]** 1=Retailer in your community 2=Retailer outside of your community 3=Wholesaler in your community 4=Wholesaler outside of your community 5=Local farmer 6=Farmers' cooperative 7=Other(specify)
3	**3.1. Who is responsible for snacks procurement? (title and function of the person/committee)?** 1. Title 2. Function 3. Name, surname 4=Do not procure for school snacks (Go to question 4) 99=DK 88=RA **3.2. Is this the same person as for the school meals programme?** 1=Yes 2=No99=DK 88=RA
4	**4.1. How often does the school procure the snacks?** 1=Every day 2=Three or four times a week 3=Once or twice a week 4=Once or twice a month 5=Once a month or more99=DK 88=RA **4.2. Is this the same frequency as for the school meals?** 1=Yes 2=No 99=DK 88=RA

5	**5.1. Who is responsible for organizing and paying for transportation for snack procurement proposes? (title and function of the person/committee)** **1. Title** **2. Function** **3. Name, surname** 99=DK 88=RA **5.2. Is this the same person as for the school meals?** 1=Yes 2=No 99=DK 88=RA
4. **Organization of Snacks**	
1	**Did you have to hire new kitchen helpers for the school snacks programme?** 1=Yes 2=No
2	**How do you monitor the nutritional value of school snacks? (Select all that apply)** 1 = Research vitamin make-up of meals 2 = Research kilocalorie make-up of meals 3 = Adhere to planned menu 4 = Consult WFP training books 5 = Conduct internal research on child nutrition 6 = Receive outside consulting on child nutrition 8=I do not monitor 9=Other, specify
3	**Did you receive additional funds beyond those provided by the WFP for the school snack programme?** 1=Yes 2=No (Go to3.3.) **3.1. If yes, from what sources? (select all that apply)** 1=Parents' contributions 2=School budget 3=Local organization 4=International organization 5=Municipality 6=Church 7=Other(specify) **3.2. How much additional funds did you receive for this programme over the last school year (in AMD)?** **3.3. In addition to any additional funds, did you or any community member contributed food in a regular bases for the school snacks programme?** 1=Yes 2=No **3.4. In addition to any additional funds, did you or any community member contributed any kitchen equipment for the school snacks programme?** 1=Yes 2=No
5. General Feedback on the Snacks Programme	
1	**Please, mention up to three advantages of receiving money for school snacks.**
	1.
	2.
	3.
	Please, mention up to three challenges of receiving money for school snacks.
	1.
	2.
	3.
2	**How much do you agree that the school snacks programme is needed in Armenia?** 1=Completely agree 2=Somewhat agree

	3=Somewhat disagree 4=Completely disagree
3	**How much do you agree that the school snacks programme is important/needed for preschool?** 1=Completely agree 2=Somewhat agree 3=Somewhat disagree 4=Completely disagree
4	**How much do you agree that the school snacks programme should be continued in your school?** 1=Completely agree 2=Somewhat agree 3=Somewhat disagree 4=Completely disagree
5	**How much do you agree that the school snacks programme should be replicated in other provinces?** 1=Completely agree 2=Somewhat agree 3=Somewhat disagree 4=Completely disagree
6	**How much do you agree that 70AMD/child/day budget for the implementation of the school snacks is sufficient??** 1=Completely agree 2=Somewhat agree 3=Somewhat disagree 4=Completely disagree
6 Detailed Feedback on the Snacks Programme	
1	**Did you encounter any problems, while organizing your school snacks programme?** 1 =Yes 0=No (Go to question 5 of the section)
2	**What kind of problems did you encounter?** **[INTERVIEWER! Do not read out, select all that apply.]** 1= Infrastructure problems 2= Lack or absence of necessary kitchen equipment/appliances 3=Compensation for kitchen helpers' work 4=Compliance with cooking technology 5=Compliance with sanitary and hygienic requirements 6=Problems with the supply of products from suppliers 7= Lack of parents' engagement in the organization of school meals 8=Insufficient funds 9=Other (specify)
3	**Status of the problem:** 1=In process (Go to question 5 of the section) 2=Solved 3=Did not solve (Go to question 5 of the section) 99=DK (Go to question 5 of the section) 88= RA (Go to question 5 of the section)
4	**Who helped to solve the problem? (Select all that apply)** 1=Myself (I solved the problem) 2=World Food Programme (WFP) 3=The Government of the Republic of Armenia 4=Public authorities 5=School 6=Parents or parents' councils 7=Other private donators 8=Other international organizations 9=Other (specify) 99= DK 88= RA

5	**How do you assess students' satisfaction with school snacks?** 0= No assessment done 1=In-person interviews/check-ins 2=Feedback from students 3=Feedback from parents 4=School meal assessment forms 5=Other (specify)	6	**How do you assess parents' satisfaction with school snacks?** 0= No assessment done 1=In-person interviews/ check-ins 2=Feedback from students 3=Feedback form parents 4=School meal assessment forms 5=Other, specify
7	**Based on the feedback you have received, what has been the general consensus on the school snacks provision?** 1=Very negative 2=Negative 3=Neither positive, nor negative 4=Positive (Go to question 9 of this section) 5=Very positive (Go to question 9 of this section) 99=DK (Go to question 9 of this section) 88=RA (Go to question 9 of this section)	8	**Based on the general feedback receieved, what are they (children and parents) mainly not satisfied with? [INTERVIEWER! Do not read out, select all that apply.]** 1=Menu diversity 2=Kitchen conditions 3=Time of the day the food is served 4=Time given to children for eating 5=Sanitary and hygienic conditions 6=Cooks/kitchen helpers 7=Communication with the school committee 8=Other (specify)
9	**Do you think any changes should be made to the school snacks programme in your school?** 1=Yes **9.1. If yes, what changes? [INTERVIEWER! Do not read out, select all that apply.]** 1=-Diversify and improve the menu 2= Repair and renovate the kitchen/cafeteria 3=Improving the sanitary and hygienic condition of the kitchen/cafeteria 4=Improvements of the procurement and supply procedures 5=Increase parents' contribution to feeding processes (e.g. in the process of food provision or compiling of the menus etc.) 6=Stop the snacks programme as we do not think it is necessary 7=Stop the snacks programme as we think it is too difficult to implement 8=Buy new kitchen equipment 9=Change kitchen helpers 10=Give salaries for kitchen helpers 11= Other (specify) 2=No 99=DK 88=RA		
10	**Who makes influential decisions regarding the purchases for the organization of school snacks (up to 2 answer choices)?** 1=Headmaster only 2=Headmaster together with parent's council 3=Parent's council only 4=Headmaster with kitchen helpers 5=Kitchen helpers 6=Parents not in the council 7=WFP representative 8=Other (specify) 99=DK 88=RA		
11	**Who is making the most influential decisions in finalizing the menus?** 1=Headmaster only 2=Headmaster together with parents' council 3=Parent's council only 4=Headmaster with kitchen helpers 5=Kitchen helpers 6=Parents not in the council 7=WFP representative		

	8=Other (specify) 99=DK 88=RA
12	**Could you please provide the overall attendance rate of the school 0 and 1 grade students in 2018-2019 school year?** **(How many days have students attended the classes, expressed in % of the total days in the 2018-2019 school year?).** 1. 0 grade 2. 1st grade 99=DK 88=RA
13	**Is the parents' council involved in the school snacks programme?** 1= Fully Involved 2= Involved 3= Not involved (Why?) 99= DA 88= RA
14	**14.1. Could you please tell me, is there a quality control of the snacks?** 1=Yes If yes, who is the main person/body performing the control [**INTERVIEWER!** Accept up to three answers]? 1.1 Me 1.2 Sanitary Service 1.3 Funders (monitors) 1.4 Parents/parents' council 1.5. Representatives of the Municipality 1.6. Other 2=No (Go to question 16 of this section) 99=DK 88=RA
15	**If yes, what is the frequency of quality control?** 1= A few times a day 2= Once a day 3= A few times a week 4=Once a week 5=Once a month 6=Every six months 7=Never 8=Parents have no permission to enter the kitchen 99=DK 88= RA
16	**In your opinion, which food item that is not included in the snacks should be added to it?** 99=DK 88=RA
17	**Which food item should be increased in the snacks?** 99=DK 88=RA
18	**Which food item should be lessened from the snacks?** 99=DK 88=RA
19	**19.1. Did the school buy kitchen equipment/appliances to serve the snacks programme?** 1=Yes, what? 2=No **19.2. How much did the equipment/applicancescost (in AMD)?** **19.3. Who paid for this?**

20	**Has the school snack programme improved or worsened the following?**	*Improved*	*Remained the same*	*Worsened*	*DK or RA*	*NA*
	1. Diverse meals					
	2.Kitchen's equipment quality					

	3.Attendance of pupils					
	4.Student learning					
	5.Provision of fresh products					
	6.Parents' involvement					
	7.Hygiene/safety conditions					
	8. Salary of kitchen helpers					
	9.Food compensation for kitchen helpers					
	10. Volume of the products available for procurement from local (regional/marz) farmers					
	11. Other (specify)					

21	**21.1. Are there any topics that you or kitchen helpers would like to receive training on?**	*You*		*Kitchen Helper*	
		Yes	*No*	*Yes*	*No*
	21.2. If yes, please mention the topic [INTERVIEWER! Do not read out, select all that apply.]	*You*		*Kitchen Helper*	
	1.Cooking				
	2.Menu making				
	3.Training on healthy nutrition				
	4.Safety and sanitary requirements for the school meals provision				
	5.Farming onsite				
	6. Management of school meals provision				
	7. Purchases/procurement				
	8.Other (specify)				

22	**At your school, who is involved in the administration and implementation of the school snacks programme? [INTERVIEWER! Select all that apply.]** 1=Headmaster 2=Vice-principle 2=Cook(s) 3=Finance Officer 5=Facility Manager 6=Kitchen Helper(s) 7=Parents 8=Other(specify)
23	**On average, how much time per month do you spend on the administration of the school snacks programme?** 1=0-3 hours 2=4-6 hours 3=7-10 hours 4= more than 10 hours
24	**Have you ever made a complaint about the school snacks provision?** 1=Yes (specify, what kind of complaint?) 2=No
25	**Have you ever received a compliant from parents about the school snacks provision?** 1=Yes (if yes, please briefly describe what was the follow up?) 2=No
7. General Feedback	
1	**Is there anything else that you would like us to know about the school snacks provision?** 1=Yes (specify) 2=No
8. **Follow-up Monitoring**	
1	**If we have further questions do you agree to be contacted later?** 1= Yes 2=No
2	**Could we contact you via phone?** **1= Yes** **2=No** **If yes, please provide a telephone number:** **Name Number**

3	**What is the preferred time for receiving a call from us?** ***Please circle <u>all that apply</u> unless the response = 1 (anytime)*** 1= Anytime(9-20) 2= Morning (9-13) 3= Afternoon (13-17) 4=Evening (17-20)

THANK YOU VERY MUCH FOR YOUR HELP!
ALL INFORMATION IS KEPT IN STRICT CONFIDENTIALITY AND USED ONLY FOR OUR RESEARCH.
WE DO NOT GIVE INFORMATION ABOUT YOU OR YOUR SCHOOL.

CAREGIVER CONSENT FORM

Նամակագրության հասցե՝
ՀՀ, ք. Երևան, 0025, Ալեք Մանուկյան 1, գրադարանի շենք, սենյակ 602, |**Հեռ:** +374 10 574868, 574898
Էլ.հասցե: crrc@crrc.am |**վեբ կայք**: www.crrc.am

Լոռու, Գեղարքունիքի և Շիրակի մարզերի նախադպրոցական տարիքի երեխաների շրջանում դպրոցական նախաճաշիկի ազդեցության գնահատում

Ծնողների/հիմնական խնամակալների
տեղեկատվական թերթիկ

ՀՐԱՎԵՐ

Ձեզ հրավիրում ենք մասնակցելու հետազոտության, որը ենթադրում է երեխաների և նրանց ծնողների/հիմնական խնամակալների ներգրավվածություն: Նախքան Ձեր մասնակցելու մասին որոշում կայացնելը և Ձեր երեխայի մասնակցության վերաբերյալ համաձայնություն տալը, կարևոր է հասկանալ այս հետազոտության նպատակները և Ձեր և Ձեր երեխայի մասնակցության առավելությունները: Խնդրում ենք ուշադիր կարդալ ներքոնշյալ տեղեկատվությունը: Եթե ծրագրի վերաբերյալ որևէ հարց ունեք կամ ցանկանում եք լրացուցիչ տեղեկություններ ստանալ, խնդրում ենք դիմել մեզ: Խնդրում ենք նաև անփոփոխ որոշում կայացրեք, թե արդյոք Դուք և Ձեր երեխան կմասնակցեք հետազոտությանը: Մենք շատ ենք կարևորում Ձեր և Ձեր երեխայի մասնակցությունը:

ՈՐՆ Է ՀԵՏԱԶՈՏՈՒԹՅԱՆ ՆՊԱՏԱԿԸ

Հետազոտությունը նպատակ ունի ուսումնասիրել դպրոցական նախաճաշիկ բաղադրիչի հնարավոր դերը նախակրթարաններում: Հետազոտական թիմը դիտարկելու է, թե արդյոք հնարավոր է բարելավել նախադպրոցական տարիքի երեխաների առաջադիմությունը՝ դպրոցական նախաճաշիկ տրամադրելու դեպքում: Հետազոտությունը նպաստելու է «Կայուն դպրոցական սնունդ» ազգային ծրագրի մշակմանն ու իրականացմանը: Հետազոտության նպատակն է ապացույցներ ձեռք բերել, որոնք կարող են հիմք հանդիսանալ դպրոցական սննդի կազմակերպման և իրականացման գործընթացում փոփոխություններ կատարելու համար, մասնավորապես՝ նախադպրոցական երեխաներին ընդգրկելու և սննդի տրամադրման գործընթացները ընդլայնելու առումով (նախաճաշիկի և ճաշի տրամադրում՝ ի տարբերություն միայն ճաշի): Պարենի համաշխարհային ծրագրի (ՊՀԾ) հայաստանյան ներկայացուցչությունը և հետազոտական թիմը չեն կարող երաշխավորել, որ ծրագիրը կընդլայնվի, և որ հաջորդ տարի ևս երեխաները դպրոցներում նախաճաշիկ կստանան, սակայն հետազոտության արդյունքները կօգնեն իրազեկ որոշում կայացնել: Բացի այդ, հայաստանյան արդյունքները կարող են օգնել դպրոցական սննդի այլ ծրագրերի շրջանակներում հասկանալ նմանատիպ միջավայրում նմանօրինակ ծրագրի իրականացման հնարավորությունը:

ԻՆՉ Է ԱՐՎԵԼՈՒ ՀԵՏԱԶՈՏՈՒԹՅԱՆ ՇՐՋԱՆԱԿՆԵՐՈՒՄ

Հետազոտությունն իրականացվում է նախադպրոցական տարիքի երեխաների և նրանց ծնողների շրջանում՝ Լոռու, Գեղարքունիքի և Շիրակի մարզերի դպրոցներում: Որոշ դպրոցներին առավոտյան նախաճաշիկ կդրամադրվի, իսկ մյուսներին՝ ոչ: Այն դպրոցները, որոնք ընդգրկվելու են դպրոցական նախաճաշիկի տրամադրման ծրագրում ընտրվել են համակարգչային ծրագրի միջոցով՝ պատահականության սկզբունքով: Հարցմանը մասնակցելու կամ հրաժարվելու Ձեր որոշումը չի ազդի Ձեր երեխայի դպրոցի՝ ծրագրում ներգրավված լինելու վրա: Եթե դպրոցը ներառված է ծրագրում, ապա տվյալ դպրոցի 0 դասարանների բոլոր երեխաներն առավոտյան նախաճաշիկ կստանան: Դպրոցական տարվա սկզբում և վերջում նախադպրոցական տարիքի և տարրական 1-ին դասարանի ընտրված աշակերտներ կմասնակցեն թեստերի՝ նկարների միջոցով պատասխանելով տարբեր հարցերի: Տարվա սկզբին նախադպրոցական տարիքի ընտրված երեխաների հասակը և քաշը կչափվի, ինչպես նաև սակավարյունությունը ստուգելու համար արյան թեստ կանցկացվի: Հասակի ու քաշի չափումները և արյան թեստը կիրականացնեն մասնագետները: Ընտրված նախադպրոցականների խնամակալների, ինչպես նաև դպրոցի տնօրինության հետ փոքր հարցում կանցկացվի:

ԻՆՉՈ՞Ւ Է ԵՍ ԵՎ ԻՄ ԵՐԵԽԱՆ

Դպրոցներում վարվող գրանցման տվյալների համաձայն Ձեր երեխան հաճախում է տվյալ մարզում գտնվող նախադպրոցական հաստատություն և նա, պատահականության սկզբունքով, նախադպրոցական տարիքի այլ երեխաների ցանկից ընտրվել է որպես այս հետազոտության մասնակից: Երեխային ընտրելուց հետո, դպրոցի տրամադրած տվյալների հիման վրա, դիմել ենք Ձեզ՝ հետազոտությանը մասնակցելու և Ձեզ հետ հարցազրույց անցկացնելու համար Ձեր համաձայնությունը ստանալու նպատակով: Հետազոտության ընթացքում հավաքվելու է նաև երեխայի սնուցման կարգավիճակի վերաբերյալ տվյալներ, որի համար դարձյալ հայցում ենք Ձեր համաձայնությունը: Մասնակցության դեպքում՝ Ձեր կողմից տրամադրված տվյալները համադրվելու են դպրոցից հավաքագրված տեղեկության հետ:

ՊԵ՞ՏՔ Է ԱՐԴՅՈՔ, ՈՐ ԵՍ ԵՎ ԻՄ ԵՐԵԽԱՆ ՄԱՍՆԱԿՑԵՆՔ: ՈՐՈ՞ՆՔ ԵՆ ՄԵՐ ՄԱՍՆԱԿՑՈՒԹՅԱՆ ՌԻՍԿԵՐՆ ՈՒ ԱՌԱՎԵԼՈՒԹՅՈՒՆՆԵՐԸ

Հետազոտությանը մասնակցելու որոշումը Ձերն է: Ցանկացած պահի կարող եք որոշել դադարեցնել մասնակցությունը: Հարցազրույցի ժամանակ կարող եք չպատասխանել այն հարցերին, որոնց չեք ցանկանում պատասխանել: Գաղտնիության ապահովման համար կգործադրվեն բոլոր ջանքերը, քանի որ հետազոտությունն անանուն է, իսկ Ձեր կամ Ձեր երեխայի տվյալները կօգտագործվեն բացառապես վերլուծական նպատակներով: Այն դեպքում, երբ սակավարյունության թեստից հետո պարզվի, որ երեխան ծանր սակավարյունութուն ունի, Ձեզ կուղղորդենք համապատասխան բժշկական հաստատություն:

Մյուս բոլոր դեպքերում հավաքագրված անունները, տվյալները և տեղեկությունները գաղտնի կմնան և չեն տարածվի: Մասնակցության հետ կապված ռիսկեր չկան, իսկ ձեռք բերված արդյունքները կօգնեն «Դպրոցական սննունդ» ծրագրի վերաբերյալ քաղաքականության մշակման համար հստակ պատկեր ստեղծել: Ձեր մասնակցությունն այս հետազոտությանը կօգնի այն մարդկանց, ովքեր փորձում են հասկանալ և պլանավորել «Դպրոցական սննունդ» ծրագիրը և նրանց, ովքեր հետաքրքրված են դպրոցական սննդի և երեխայի առաջադիմության միջև եղած կապի ուսումնասիրությամբ, ինչպես նաև, հետազոտությունը կարող է օգնել նախաճաշիկ բաղադրիչը համընդհանուր ներդնելու գործընթացը սկսելուն:

ԻՆՉՊԵ՞Ս ԵՆ ՕԳՏԱԳՈՐԾՎԵԼՈՒ ԱՅՍ ՀԵՏԱԶՈՏՈՒԹՅԱՆ ԱՐԴՅՈՒՆՔՆԵՐԸ

Հետազոտության արդյունքները կօգտագործվեն առաջիկա տարիներին ՊՀԾ-ի կողմից «Կայուն դպրոցական սնունդ» ազգային ծրագրին տրամադրվող աջակցությունը պլանավորելու համար: Որոշ արդյունքներ կարող են հրապարակվել գիտական ամսագրերում, որոնք

ուսումնասիրում են դպրոցական սննդի և երեխայի առաջադիմության միջև կապը: Հրապարակված արդյունքների տպագիր օրինակը ձեռք բերելու ցանկության դեպքում խնդրում ենք տեղեկացնել հետազոտողին:

ՈՐ Է ՖԻՆԱՆՍԱՎՈՐՈՒՄ ՈՒ ԿԱԶՄԱԿԵՐՊՈՒՄ ՀԵՏԱԶՈՏՈՒԹՅԱՆ ԻՐԱԿԱՆԱՑՈՒՄԸ

Հետազոտությունը ֆինանսավորվում է ՄԱԿ-ի պարենի համաշխարհային ծրագրի կողմից և իրականացվում Հայաստանի Հանրապետության կրթության ու գիտության նախարարության հետ սերտ համագործակցությամբ՝ Պարենային քաղաքականության հետազոտական միջազգային ինստիտուտի միջոցով: Հետազոտության դաշտային աշխատանքներն իրականացնում է Հետազոտական ռեսուրսների կովկասյան կենտրոն-Հայաստան (ՀՌԿԿ) հիմնադրամը՝ Երևանի պետական համալսարանի (ԵՊՀ) Փիլիսոփայության ու հոգեբանության բաժնի հոգեբանության ֆակուլտետի անձի հոգեբանության ամբիոնի հետ համագործակցությամբ:

ԿՈՆՏԱԿՏԱՅԻՆ ՏՎՅԱԼՆԵՐ՝ ՀԵՏԱԴԱՐՁ ԿԱՊԻ ԵՎ ՀԵՏԱԳԱ ՏԵՂԵԿԱՏՎՈՒԹՅԱՆ ՀԱՄԱՐ

Տվյալ հետազոտության վերաբերյալ լրացուցիչ հարցերի դեպքում կարող եք կապ հաստատել Սոնա Բալասանյանի հետ, հասցեն՝ Ալեք Մանուկյան փ. 1, ԵՊՀ, գրադարանի շենք, սենյակ 602, ՀՀ, Երևան 0025, **Հեռ:** +374 10 574868, 574898, էլ. հասցե: rd@crrc.am:

Կարող եք նաև կապ հաստատել ՊՀԾ հայաստանյան գրասենյակի հետ, հասցեն՝ Պետրոս Ադամյան փ. 14, Երևան 0010, **Հեռ:** +374 10 580538, էլ. հասցե: WFP.Yerevan@wfp.org:

Սիրով կպատասխանենք Ձեր հարցադրումներին:

☐ Հաստատում եմ, որ ծանոթացա վերոնշյալին և հարցեր չունեմ:

Համաձայնության թերթիկ՝ ծնողների/ խնամակալների համար

1. ՀԱՐՑԱԶՐՈՒՅՑԻՆ ՄԱՍՆԱԿՑԵԼՈՒ ՀԱՄԱՁԱՅՆՈՒԹՅԱՆ ՀԱՅՏԱՐԱՐԱԳԻՐ

☐ Համաձայն եմ կամավոր մասնակցել այս հարցազրույցին:

☐ Հաստատում եմ, որ կարդացել եմ կցված տեղեկատվական թերթիկը և հասկանում եմ հետազոտության նպատակն ու խնդիրները:

☐ Տալիս եմ իմ համաձայնությունն առ այն, որ այս հետազոտության շրջանակներում հավաքագրված տվյալները տրամադրվեն ծրագրում ներգրավված հետազոտական թիմին:

2. ՀԱՄԱՁԱՅՆՈՒԹՅԱՆ ՀԱՅՏԱՐԱՐԱԳԻՐ ԵՐԵԽԱՅԻ՝ ՀԵՏԱԶՈՏՈՒԹՅԱՆԸ ՄԱՍՆԱԿՑԵԼՈՒ ՎԵՐԱԲԵՐՅԱԼ

☐ Հաստատում եմ, որ կարդացել եմ կցված տեղեկատվական թերթիկը և տեղեկացել եմ երեխայիս մասնակցության հետ կապված բոլոր ընթացակարգերի և հետազոտությանը վերաբերող ռիսկերի և առավելությունների մասին:

☐ Տեղյակ եմ, որ երեխայիս մասնակցությունը կամավոր է և կարող եմ ցանկացած փուլում հրաժարվել ծրագրին մասնակցելուց՝ առանց որևէ պատճառաբանության:

☐ Տեղյակ եմ, որ երեխայիս վերաբերյալ տվյալները կպահպանվեն անանուն:

☐ Համաձայն եմ, որ այս հետազոտության շրջանակներում երեխայիս վերաբերյալ հավաքագրված տվյալները կարող են տրամադրվել այս ծրագրում ներգրավված հետազոտական թիմին:

1.Մասնակցի անունը

_____
_____

Կոնտակտային տվյալները (էլ. հասցե, հեռախոս)

_____
_____

Մասնակցի ստորագրությունը_____
____

2. Հետազոտողի անունը_____
___

Local Partnership in research on the role of school snacks on school performance of preschool children in Armenia
Caregiver Questionnaire

☐ **Մասնակիցը ցանկություն է հայտնել հետազոտության հրապարակված արդյունքների օրինակ ունենալ (եթե այո՝ նշել):**

Հետազոտողի ստորագրությունը և ամսաթիվ՝

_____

_____

_____

HOURSEHOLD SURVEY INSTRUMENT

Note: In exceptional cases if the same caregiver has two childrem from the same classroom, then two questionnaires have to be filled in.

1. Background Information *(complete prior to reaching the household)*						
Interviewer Information	1.1	Interviewer code	|__|__|	1.2	Questionnaire number (to be completed by data entry operator): |__|__|	
	1.3	Date of interview	|__|__| / |__|__| /|__|__|__|__| Day Month Year	1.4	HH ID	|__|__|
Child information	1.5	Child ID (Caregiver's ID + school ID plus) *[INTERVIEWER: In exceptional cases if the same caregiver has two children from the same classroom, add 1 or 2 to the code for the first or second child.]*	Child name: Child surname: Child age (D/M/Y): Child grade: Child gender: 1=Male 2=Female			
School information	1.6	School you visited to find the address for the HH	School name, addresss School ID |__|__|__|__|__| School location			
Geographic information on the child current place of living	1.7	Child address (clarified from the school): Region/marz: Town/village name: HH address:				

[INTERVIEWER! MAKE SURE YOU ARE TALKING TO AN ADULT (18 YEARS OLD OR OLDER) MEMBER OF THIS HOUSEHOLD. MEMORIZE THE FOLLOWING TEXT AND ADDRESS IT TO THE PERSON WHO OPENED THE DOOR. IF THE HOUSEHOLD MEMBER REFUSES TO PARTICIPATE AT ANY POINT DURING THE INTRODUCTION, PROVIDE THIS INFORMATION IN THE INTERVIEWER FORM.

Hello, my name is /last name and first name/ and I represent the Caucasus Research Resource Center Armenia-Foundation, a non-profit independent research center in Armenia. We are conducting research on the role of school snacks on school performance of preschool children in Armenia. The research is funded by the World Food Programme and is realized through International Food Policy Research Institute. The fieldwork of the study is conducted by the CRRC-Armenia in partnership with Yerevan State University (YSU), Department of Philosophy and Psychology, Faculty of Psychology, Chair of Personality Psychology.
We are very much interested in the opinion of families that have primary school age children. We received your contact information from school and know that your child is attending the (name/number) school. Provide the respondent with information sheet and ask for the informed consent.

DO YOU AGREE TO PARTICIPATE IN THE RESEARCH?
YES ☐ [INTERVIEWER: Tick yes, if the consent from the caregiver has been taken.]
NO [INTERVIEWER: Quit the interview.]

Before we proceed with the interview, I have to make sure that we both define the term HH in the same way.

DEFINITION OF HOUSEHOLD

A HOUSEHOLD IS A GROUP OF PEOPLE WHO LIVE TOGETHER AND TAKE FOOD FROM THE "SAME POT." IN OUR SURVEY, A HOUSEHOLD MEMBER IS SOMEONE WHO HAS LIVED IN THE HOUSEHOLD **AT LEAST 3 MONTHS**.

EVEN THOSE PERSONS WHO ARE NOT BLOOD RELATIONS (SUCH AS LODGERS, OR AGRICULTURAL LABORERS) ARE CONSIDERED MEMBERS OF THE HOUSEHOLD IF THEY HAVE STAYED IN THE HOUSEHOLD AT LEAST 3 MONTHS OF THE PAST 6 MONTHS AND TAKE FOOD FROM THE "SAME POT." IF SOMEONE STAYS IN THE SAME HOUSEHOLD BUT DOES NOT BEAR ANY COSTS FOR FOOD OR DOES NOT TAKE FOOD FROM THE SAME POT, THEY ARE NOT CONSIDERED HOUSEHOLD MEMBERS. FOR EXAMPLE, IF TWO BROTHERS STAY IN THE SAME HOUSE WITH THEIR FAMILIES BUT THEY DO NOT SHARE FOOD COSTS AND THEY COOK SEPARATELY, THEN THEY ARE CONSIDERED TWO SEPARATE HOUSEHOLDS.

GENERALLY, IF ONE PERSON STAYS MORE THAN 3 MONTHS OUT OF THE LAST 6 MONTHS OUTSIDE THE HOUSEHOLD, THEY ARE NOT CONSIDERED HOUSEHOLD MEMBERS [*UNLESS MIGRATING FOR EMPLOYMENT*]. WE DO NOT INCLUDE THEM EVEN IF OTHER HOUSEHOLD MEMBERS CONSIDER THEM AS HOUSEHOLD MEMBERS.

EXCEPTIONS TO THESE RULES SHOULD BE MADE FOR:

- A NEWBORN CHILD LESS THAN 3 MONTHS OLD
- SOMEONE WHO HAS JOINED THE HOUSEHOLD THROUGH MARRIAGE LESS THAN 3 MONTHS AGO
- LODGERS, AND AGRICULTURAL LABORERS CURRENTLY IN THE HOUSEHOLD AND WILL BE STAYING IN THE HOUSEHOLD FOR A LONGER PERIOD BUT ARRIVED LESS THAN 3 MONTHS AGO.

DO NOT CONSIDER AS HOUSEHOLD MEMBER:

- A PERSON WHO DIED VERY RECENTLY THOUGH STAYED MORE THAN 3 MONTHS IN LAST 6 MONTHS.

- SOMEONE WHO HAS LEFT THE HOUSEHOLD THROUGH MARRIAGE LESS THAN 3 MONTHS AGO.
- LODGERS, AND AGRICULTURAL LABORERS WHO STAYED MORE THAN 3 MONTHS IN LAST 6 MONTHS BUT LEFT PERMANENTLY.
- ANY CHILD OF THE FAMILY WHO HAS BEEN STUDYING AWAY FROM THE HOUSEHOLDFOR MORE THAN 3 MONTHS.

THIS DEFINITION OF THE HOUSEHOLD IS VERY IMPORTANT. THE CRITERIA COULD BE DIFFERENT FROM OTHER STUDIES YOU MAY BE FAMILIAR WITH, BUT YOU SHOULD KEEP IN MIND THAT YOU SHOULD NOT INCLUDE THOSE PEOPLE WHO DO NOT MEET THESE CRITERIA. PLEASE DISCUSS ANY QUESTIONS WITH THE INTERVIEWER.

2. Information about HH members [to be filled out for each member of household]						
1. HH MEMBER ROLE IN THE FAMILY: [INTERVIEWER. START WITH THE MAIN CAREGIVER (INTERVIEWEE) AND DEFINE THE ROLE IN THE FAMILY IN REFERENCE TO THE CHILD.] 1=MOTHER 2=FATHER 3=GRANDMOTHER 4=GRANDFATHER 5=SISTER 6=BROTHER 7=AUNT 8=UNCLE 9=OTHER (SPECIFY)	2. YEAR OF BIRTH___ 3. GENDER OF THE HH MEMBER	4. IS THIS MEMBER STILL AT SCHOOL? 1.YES 2.NO IF YES, WHAT IS THE LAST GRADE FINISHED? 1 = NONE 2 = PRIMARY SCHOOL (COMPLETE OR INCOMPLETE) 3 = INCOMPLETE SECONDARY 4= COMPLETED SECONDARY 5= SPECIALIZED SCHOOL, COLLEGE 6 = INCOMPLETE HIGHER EDUCATION 7= COMPLETED HIGHER EDUCATION (BACHELORS, MASTERS OR SPECIALIZATION) 8= POST-GRADUATE DEGREE	5. IF NO, WHAT IS THE LEVEL OF EDUCATION OBTAINED/LAST COMPLETED? 1 = NONE 2 = PRIMARY SCHOOL (COMPLETE OR INCOMPLETE) 3 = INCOMPLETE SECONDARY 4= COMPLETED SECONDARY 5= SPECIALIZED SCHOOL, COLLEGE 6 = INCOMPLETE HIGHER EDUCATION 7= COMPLETED HIGHER EDUCATION (BACHELORS, MASTERS OR SPECIALIZATION) 8= POST-GRADUATE DEGREE	6. EMPLOYMENT STATUS (IF HH MEMBER ISOVER 18). 1=EMPLOYED 2=UNEMPLOYED 3=SELF-EMPLOYED 4=STILL IN SCHOOL/STUDENT 5=RETIRED 6=OTHER	7. IF EMPLOYED, MENTION THE EMPLOYMENT STATUS. 1. NON-MANUAL WORKER 2. MANUAL WORKER	8. HOW MANY MONTHS HAS THIS MEMBER BEEN OUT OF HOUSEHOLD IN THE COURSE OF THE PREVIOUS YEAR FOR EMPLOYMENTOR FOR DOING PAID WORK?

3. Do you (your HH) receive assistance from Family Benefit Programme?
1. Yes
2. No
99. DK/RA

4. Child Information

INTERVIER: Now I would like to ask a few questions about the child who currently attends preschool.

5.1. Remind me the name of the child

5.2. Did "name of the child" attend preschool last year?
1. Yes 2. No 88. DK 99. RA

5.3. Has "name of the child" been attending preschool on a regular basis this year?
1. Yes 2. No 88. DK 99. RA

5.4. Has "name of the child" been miss school due to illness or a visit to a doctor in the last 7 days? If yes, please indicate the number of days "name of the child" has missed school.
1. Yes, how many days? 2. No 88. DK 99. RA

5.5. Does "name of the child" currently have a cold or runny nose?
1. Yes 2. No 88. DK 99. RA

5. Family Care Indicators

5.1. In the past week, did you or any other adult family member do the following activities with (CHILD)?

If yes, ask:
Who engaged in this activity with (name): the child's mother, the child's father, a sibling or another adult member of the household? [INTERVIEWER: circle all of the corresponding persons who engaged with the child for each activity]. For each adult (mother, father, sibling, other household member) who engaged in the activity with the child, write in how many days

		Mothe	Father	Sibling	Other	No one
1.	Told stories to (name)?	1	2	3	4	0
2.	Sang songs or lullabies with (name)?	1	2	3	4	0
3.	Counted or drew things with (name)?	1	2	3	4	0
4.	Took (name) outside the home	1	2	3	4	0
5.	Read books or looked at picture books with (name)	1	2	3	4	0
6.	Played with (name)?	1	2	3	4	0
7.	<u>SONGS (Yes - 2)</u> You mentioned that (adult name(s)) sings to your child. I am going to read a list. Please say 'yes' if (adult name(s)) sing these types of songs to (child name). You can say 'yes' to more than one. [INTERVIEWER: Read List.] How many days did (adult name) sing with (child name) in the past week?	☐ Popular songs or songs they hear on the radio ☐ Lullabies ☐ Songs that help children to learn (counting, colors) ☐ Other children's songs _____ days (mother) _____ days (father) _____ days (sibling) _____ days (other)				

8a.	READING (Yes - 5) You mentioned that (adult name(s)) read to your child. I am going to read a list. Please say 'yes' if (adult name(s)) read these types of things to (child name). You can say 'yes' to more than one. [INTERVIEWER: Read List.] How many days did (adult name) read with (child name), in the past week?	☐ Magazines or newspapers ☐ Books for children including picture books ☐ Books for adults ☐ Posters or wall calendars ☐ Other_____ _____ days (mother) _____ days (father) _____ days (sibling) _____ days
8b.	READING (No - 5) Not all parents read to their children. Could you please tell me why adults in your home do not read to your child? Prompt: is there anything else? [INETRVIEWER: Do not read list; select all that apply.]	☐ No access to books or reading materials ☐ Parents are too busy/ work demands ☐ Parents cannot read ☐ Child is too young ☐ Other_____
9a.	PLAY (Yes - 6) You mentioned that (adult name(s)) play with your child. I am going to read a list. Please say 'yes' if these are the types of things that (adult name(s) and (child name) plays with. You can list more than one. [INTERVIEWER: Read List.] How many days did (adult name) play with (child name), in the past week?	☐ Toys from a store or market ☐ Home-made toys ☐ Things which make or play music ☐ Things for drawing and writing ☐ Household objects (e.g. bowls, plates, cups or pots) ☐ Outside objects (e.g. sticks or rocks) ☐ Other_____ _____ days (mother) _____ days (father)
9b.	PLAY (No - 6) Not all parents play with their children. Could you please tell me why adults in your home do not play with your child? Prompt: is there anything else? [INETRVIEWER: Do not read list; select all that apply.]	☐ No access to play materials ☐ Parents are too busy/ work demands ☐ Child is too young ☐ Not important for children ☐ Other_____

6. How many children's books or picture books do you have for (*name*)?
1. None 2. Number of children's books 99. DK/RA

7. Please reflect on the degree to which each of the following statements currently applies to your relationship with your child. Please circle the answer you most agree with.

1.	I share an affectionate, warm relationship with my child.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
2.	My child and I always seem to be struggling with each other.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
3.	If upset, my child will seek comfort from me.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
4.	My child is uncomfortable with physical affection or touch from me.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
5.	My child values his/her relationship with me.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
6.	When I praise my child, he/she beams with pride.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
7.	My child spontaneously shares information about himself/herself (in general).	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
8.	My child easily becomes angry at me.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies

9.	It is easy to be in tune with what my child is feeling.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
10.	My child remains angry or is resistant after being disciplined.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
11.	Dealing with my child drains my energy.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
12.	When my child is in a bad mood, I know we're in for a long and difficult day.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
13.	My child's feelings toward me can be unpredictable or can change suddenly.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
14.	My child is sneaky or manipulative with me.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies
15.	My child openly shares his/her feelings and experiences with me.	Definitely does not apply	Not really	Neutral, not sure	Applies Somewhat	Definitively applies

8. Please tell me did (name) have breakfast today?
1. Yes 2. No 88. DK 99. RA

9.1. Please tell on an average week how often does your child have breakfast?
1. Every day 2. Three or four times a week 3. One to two times a week 4. Never (specify the reason) (skip 9.2.)

9.2. Did the child consume any of the following products?	**9.2.1. Today [INETRVIEWER: If the child did not have**	**9.2.2. During the Last 7 days**

		breakfast today, but did have it in the week, fill in the right column.]	
1	Grains, white roots and tubers, and plantains		
2	Pulses (beans, peas and lentils)		
3	Nuts and seeds		
4	Dairy		
5	Meat, poultry and fish		
6	Eggs		
7	Dark green leafy vegetables		
8	Other vitamin-A rich fruits and vegetables (for instance, apricot, peach, carrot, pumpkin)		
9	Other vegetables		
10	Other fruits		

CONDITION OF HOUSHOLDS

10. Now I would like to ask about assets your household may own.

Yes 1
No 0

1.	**Do you have hot running water supply?**	|_____| [OWNHWS]
2.	**Do you have bathtub or shower?**	|_____| [OWNSH]
3.	**Local sanitation compound /hole with waste products/ (as source of water supply**	|_____| [OWNSAN]
4.	**Do you have centralized gas supply?**	|_____| [OWNCGS]

5.	**Do you have an automatic washing machine?**	|_____| [OWNWASH]	
6.	**Do you have a fixed telephone?**	|_____| [OWNT]	
7.	**Do you have a computer?**	|_____| [OWNC]	
8.	**Do you have color TV?**	|_____| [OWNTV]	IF YES, HOW MANY? |_____|_____| [OWNTV]
9.	**Do you own a house/apartment?**	|_____| [OWNAIRC]	IF YES, HOW MANY? |_____|_____| [OWNHA]
10.	**Do you own a car/track?**	|_____| [OWNAIRC]	IF YES, HOW MANY? |_____|_____| |OWNCARS]
11.	**Do you own any land?**	|_____| [OWNAIRC]	IF YES, HOW MANY SQ.M? |_____|_____|
12.	**Are you engaged in cattle breeding?**	|_____| [BREEDING]	

11. Follow-up Monitoring			
1.	**If we have further questions do you agree to be contacted later?**	0 = No 1 = Yes	|__|
2.	**Could we contact your household via phone?**	0 = No 1 = Yes	|__|
3.	**If yes, please provide a telephone number:**	Your phone number:	Name: _____ _____ Number: |__|__|__|__|__|__|__|__|__|__|__|__|__|
4.	**What is the preferred time for receiving a call from us?** ***Please circle <u>all that apply</u> unless the response = 1 (anytime)***		1 =Anytime(9-20) 2=Morning (9-13) 3=Afternoon (13-17) 4=Evening (17-20)

THANK YOU VERY MUCH FOR YOUR HELP!
ALL INFORMATION IS KEPT IN STRICT CONFIDENCE AND USED ONLY FOR OUR RESEARCH.
WE DO NOT GIVE INFORMATION ABOUT YOU, YOUR CHILD OR YOUR FAMILY TO ANYONE.

Annex 4: Stakeholders Interviewed

In addition to the administrators of the 49 schools that implemented the trial (see the instrument in Annex 2) the following members of the Evaluation Reference Group were interviewed by Sona Balasanyan in the course of the evaluation.

Mr. Robert Stepanyan, Ministry of Education, Science, Culture and Sport

Ms. Satenik Mkrtchyan, School Feeding Foundation

Mr. Hovsep Hovhannisyan, Ministry of Health,

Ms. Astghik Avagyan, Ministry of Labor and Social Affairs/

Mr. Mihran Hakobyan, UNICEF Armenia

Annex 5: Documents gathered

Document Type	Comment / Titles & dates of documents received	Received - Y/N (N/A)	Link to Evaluation matrix
Project related documents			
A mid-term evaluation of WFP's Operation	02.2018	Y	
A mid-term evaluation of WFP's Operation: Management Response	02.2018	Y	
Development project Armenia 200128	02.2018	Y	
Development project Action Plan	02.2018	Y	
Standard Project Report 2016, 2017	02.2018	Y	
Budget Revisions No 9, 10, 11	02.2018	Y	
Note for the record (NFR) from Programme Review Committee meeting (for original operation and budget revisions if any)	02.2018	NA	
Approved Excel budget (for original intervention and budget revisions if any)	02.2018	N	
WFP Armenia ICSP related documents, logframe, narrative, budget	02.2018	Y	
School feeding factsheets	02.2018		
Country Office Strategic Documents			
National Strategic Review	05.2018	Y	
Other			
Assessment Reports			
Comprehensive Food Security Vulnerability and Nutrition Analysis	02.2018	Y	
Comprehensive Food Security Vulnerability Analysis Update	02.2018	Y	

Assessment of the Agriculture and Rural Development Sectors in the Eastern Partnership Countries. The Republic of Armenia		Y	
Emergency Food Security Assessments		NA	
Food Security Monitoring System Bulletins		NA	
Market Assessments and Bulletins		NA	
Joint Assessment Missions (UNHCR/WFP)		NA	
Inter-Agency Assessments		NA	
Rapid needs assessments		NA	
Cash and voucher feasibility studies		NA	
Assessing the food security data relevance and collection mechanisms in Armenia and Georgia (OXFAM)	02.2018	Y	
Effects of the Financial Crisis on Vulnerable Households: Follow-up Study (WFP)	02.2018	Y	
Baseline research: Food Security in the South Caucasus (OXFAM)	02.2018	Y	
Monitoring & Reporting (if applicable)			
M&E Plan		N	
Country Situation Report		NA	
Country Executive Brief	05.2018	Y	
Outcome Monitoring Report	06.2018	Y	
Semi-annual Monitoring Report 2017	05.2018	Y	
Beneficiary Verification Reports		NA	
Donor specific reports	05.2018	Y	
Nutrition related documents			
Demographic and Health Survey, 2010,2005,2015	02.2018	Y	
Nutritional status of RA population (OXFAM)	02.2018	Y	
Cost of the Diet (WFP)	02.2018	Y	
Nutritional diversification in Armenia (OFFAM)	02.2018	Y	

Health behaviors of Armenian schoolchildren as a risk factor for developing NCDs	02.2018	Y	
Nutrition Country Profile: Armenia	02.2018	Y	
Nutrition Mission report	02.2018	Y	
CBT Sectorial Assessments			
Supply Chain Assessment	02.2018	Y	
ICT Assessment	02.2018	Y	
Micro and macro financial Assessment	02.2018	Y	
Education			
Assessment on the access of children to preschool education services in Armenia	02.2018	Y	
WB Education Improvement project	02.2018	Y	
Policy documents			
Armenia Development Strategy for 2014-25	02.2018	Y	
Programme of the RA Government	02.2018	Y	
Republic of Armenia Law on Food Security,	02.2018	Y	
Child and Adolescent Health and Development National Strategy,	02.2018	Y	
Concept for Improving Child Feeding	02.2018	Y	
The Strategic Plan on Promoting Healthy Lifestyle	02.2018	Y	
Sustainable School Feeding Strategy	02.2018	Y	
The State Programme of Education Development	02.2018	Y	
Resource mobilisation (if applicable)			
Resource Situation		N	
Contribution statistics by month		N	
Resource mobilization strategy		N	
NFRs Donor meetings		N	
Maps			

Operational Map	02.2018	Y	
Logistics Map		NA	
Food/Cash/voucher Distribution Location Map		NA	
Food Security Map	02.2018	Y	
Other documents collected by the team (including external ones)			
NSS, Social Snapshot 2010-2016	02.2018	Y	
Specify NSS, Food Security and Poverty 2010-2016	02.2018	Y	
The Millennium Development Goals Report	02.2018	Y	
UNDAF. 2016-2020	02.2018	Y	
Implementation of the European Neighbourhood Policy in Armenia: Progress in 2014 and recommendations for actions	02.2018	Y	
Global Economic Outlook	02.2018	Y	
Child Poverty in Armenia: National Multiple Overlapping Deprivation Analysis	02.2018	Y	
Armenia: Poverty and shared prosperity	02.2018	Y	

Annex 6: List of Acronyms

AMD	Armenian Dram
BPVS	British Picture Vocabulary Scales
CBT	Cash-Based Transfers
CDC	Centre for Disease Control
CHC	Cattell-Horn-Carrol theory of cognitive abilities
CO	Country Office
CSP	Country Strategic Plan
DE QS	Outsourced Quality Support Service
DHS	Demographic and Health Survey
EB	Executive Board
ERG	Evaluation Reference Group
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
HDI	Human Development Index
HQ	Headquarter
ICC	Inter-cluster correlation
IFPRI	International Food Policy Research Institute
IR	Inception Report
IRB	Institutional review board
LMIC	Low- and middle- income countries
MoES	The Ministry of Education and Science
MoH	Ministry of Health
OEV	Office of Evaluation
RA	Republic of Armenia
RB	Regional Bureau

RCPM	Ravens Colored Progressive Matrices
SE	Standard Error
SIFI	The Social and Industrial Foodservice Institute
SOP	Standard Operating Procedure
SSFF	Sustainable School Feeding Foundation
TOR	Terms of Reference
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
WFP	World Food Programme
WPPSI	Wechsler Preschool and Primary Scale of Intelligence

Annex 7: References and Endnotes

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