Evaluation of USDOL Services to Prevent Child Labor in Egypt: Randomized Trial to Evaluate "Combating Worst Forms of Child Labor by Reinforcing Policy Response and Promoting Sustainable Livelihoods and Educational Opportunities in Egypt" (CWCLP) Project, 2012 Baseline Report

September 2012

ICF INTERNATIONAL

Submitted to:

U.S. Department of Labor
Office of Child Labor, Forced Labor and Human Trafficking

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ACKNOWLEDGEMENTS

This report is based on evaluation research undertaken by ICF International under its contract with the U.S. Department of Labor's Office of Child Labor, Forced Labor, and Human Trafficking (OCFT). The authors wish to thank the staff of OCFT as well as the World Food Programme and their partners, the United Nations Children's Fund and the International Labour Organization for their support and collaboration in the design and execution of the study.

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Funding for this evaluation was provided by the United States Department of Labor under Task Order number DOLB109K31094. Points of view or opinions in this evaluation report do not necessarily reflect the views or policies of the United States Department of Labor, nor does the mention of trade names, commercial products, or organizations imply endorsement by the United States Government.

CONTENTS

LIST OF ACRONYMS

BF	Baseline Form
CAPMAS	Central Agency for Public Mobilisation and Statistics
CDA	Community Development Association
CDC	Cairo Demographic Center
CLM	Child Labor Monitoring
CLMS	Child Labor Monitoring System
CMEP	Comprehensive Monitoring and Evaluation Plan
CPC	Community Protection Committee
CPM	Child Protection Mechanism
CS	Community Schools
CTC	Child to Child
CTS	Child Tracking System
CWCLP	Combating Worst Forms of Child Labor by Reinforcing Policy Response and Promoting Sustainable Livelihoods and Educational Opportunities in Egypt
DBMS	Direct Beneficiary Monitoring System
EI	Education Initiative
GEI	Girls Education Initiative
HLM	Hierarchical Linear Modeling
ICC	Intra-cluster Correlation
ILAB	Bureau of International Labor Affairs
ILO	International Labour Organization
IPEC	International Programme on the Elimination of Child Labour
MDES	Minimum Detectable Effect Size
MICS	Multiple Indicator Cluster Survey
M&E	Monitoring and Evaluation

MOE	Ministry of Education
MOMM	Ministry of Manpower and Migration
MOSS	Ministry of Social Solidarity
MOU	Memorandum of Understanding
NAP	National Action Plan
NCCM	National Council for Childhood and Motherhood
NGO	Non-governmental Organization
OCFT	Office of Child Labor, Forced Labor, and Human Trafficking
OSH	Occupational Safety and Health
PMU	Project Management Unit
RA	Rapid Assessment
SFD	Social Fund for Development
THR	Take-Home Ration
TOR	Terms of References
TOT	Training of Trainers
TPR	Technical Progress Report
UCW	Statistical Information and Monitoring Programme on Child Labour
UNICEF	United Nations Children's Fund
USDOL	United States Department of Labor
VTA	Vocational Training and Apprenticeship
WFCL	Worst Forms of Child Labor
WFP	World Food Programme

I INTRODUCTION

ICF International (ICF) provides evaluation services to the U.S. Department of Labor's Office of Child Labor, Forced Labor and Human Trafficking (USDOL/OCFT). OCFT is part of the Department's Bureau of International Labor Affairs (ILAB). The office conducts research on international child labor, forced labor, and human trafficking; funds and oversees the efforts of organizations to eliminate exploitative child labor around the world; and assists in the development and implementation of U.S. government policy on international child labor, forced labor and human trafficking issues.

Under task order DOLB109K31094, ICF is providing technical assistance and services to develop a comprehensive monitoring and evaluation plan (CMEP) and conduct an impact evaluation on the project titled "Combating Worst Forms of Child Labor by Reinforcing Policy Response and Promoting Sustainable Livelihoods and Educational Opportunities in Egypt" (CWCLP). The CWCLP project represents a partnership between the World Food Programme (WFP), the International Labour Organization (ILO), and the United Nations Children's Fund (UNICEF), along with a number of local implementing organizations that will implement a set of interventions to reduce child labor and strengthen communities.

This report focuses on the impact evaluation component, which will examine the combined effects of community schools (CS) and take-home rations (THR) on the participation in worst forms of child labor (WFCL) and school enrollment.[1] The purpose of this report is to provide a baseline comparison of characteristics of the children who have been assigned either to the intervention group (those participating in the project) or those in the control group (who are currently not participating in the project) and identify any differences that may influence reported outcomes in the final phase of the impact evaluation. Specifically, the report first provides an overview of child labor in Egypt and the overarching CWCLP interventions, as well as a description of the intervention components that are targeted for the impact evaluation. Next, the report describes the evaluation design, including sections on the overall methodology and a separate section on sample selection and randomization. Finally, results from the baseline comparison of the groups are presented, followed by a discussion.

1.1 CONTEXT OVERVIEW

As in most countries, child labor in Egypt results from a complex combination of factors. These include inadequate levels of household income and food security, limited quality and accessibility of education services, inadequate enforcement of child labor legislation, lack of awareness of the potential dangers of child labor, and cultural norms favoring children's early participation in work. The CWCLP project addresses each of these factors with a specific set of interventions.

[1] In addition, ICF will include awareness-raising activities in the evaluation, if they have been implemented at the time of the follow-up data collection.

1.1.1 Child Labor in Egypt

According to the 2010 Report on the Worst Forms of Child Labor, Egypt has a population of approximately 993,417 working children (6.7% of children 5-14 years of age), the majority of whom are working in the two WFCL, agriculture and domestic labor. Two-thirds of the children are working in the agricultural sector.[2] Some other occupations in which children in Egypt are involved include fishing, blacksmithing, construction, carpentry, mechanical repair, and mining.[3] According to a study conducted in 2009 by the National Council for Childhood and Motherhood and the Central Agency for Public Mobilisation, an estimated three million children are involved in labor in Egypt.[4] Within this overarching number, a survey conducted by the ILO and the Central Agency for Public Mobilisation and Statistics (CAPMAS) in 2010 identified 1.6 million children aged 5-17 who worked in hazardous labor in Egypt, among which around 63% worked in Agriculture (or greater than 9%).[5] An estimated 84% of working children reside in rural areas, particularly in Upper Egypt, which has the highest poverty rates in the nation. More than 40% of all rural children work, invariably in agriculture; in contrast, approximately 16% of urban children work, primarily as apprentices in the service sector.[6] The conditions in Upper Egypt are discussed in greater detail below.

1.1.2 Child Labor in the Upper Egypt Agricultural Sector

As was state above, according to the 2010 report on the Worst Forms of Child Labor, more than two-thirds of Egyptian child laborers are engaged in agricultural work.[7] Children working in the agriculture sector in Upper Egypt earn an average of three Egyptian pounds per day (US$0.80) and typically work 11 hours a day with only a 1-hour break in the middle, 7 days a week. They often immediately return to work after a field is sprayed with pesticides, which puts their health at extreme risk. Such exposure can cause poisoning, vomiting, dizziness, diarrhea, and disruptions to the nervous and reproductive systems.

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[2] According to the Worst Forms of Child Labor report, the estimate comes from a UCW analysis of ILO SIMPOC, UNICEF MICS and World Bank surveys, Child Economic Activity, School Attendance, and Combined Working and Studying Rates, 2005-2010.

[3] United States Department of Labor's Bureau of International Labor Affairs, "Egypt," in Findings on the Worst Forms of Child Labor-2010, Washington, DC. April 25, 2012, 255.Available from : http://www.dol.gov/ilab/programs/ocft/PDF/2010TDA.pdf

[4] Abu al Khair, Waleed, "Child Labour in Egypt a Growing Problem", Al-Shorfa.com, [online], October 14, 2010 [cited April 25, 2012]; Available from: http://www.al-shorfa.com/cocoon/meii/xhtml/en_GB/feature/meii/features/main/2010/10/14/feature-02

[5]Feteha, Ahmed, "1.6 Million Underage Laborers in Egypt: Official Figures." In Ahram.Org, [online], July 14, 2011 [cited April 25, 2012]; Available from: http://english.ahram.org.eg/NewsContent/3/12/16406/Business/Economy/-million-underage-workers-in-Egypt-Official-figure.aspx

[6] Athens Network of Collaborating Experts (ANCE). (2009). Egypt Factsheet. Athens, Greece. August 20, 2012. Available from: http://www.ance-hellas.org/Projects/Onemorechildgoestoschool/Egypt/tabid/168/Default.aspx

[7] It should be noted that the recent U.S. Department of State Human Rights Report estimates that between 70 and 80% of Egyptian children are working in agriculture. U.S. Department of State, "Egypt," in Country Reports on Human Rights Practices-2010, Washington, DC, April 8, 2011, 36; Available from http://www.state.gov/documents/organization/160456.pdf. See also, Feteha, Ahmed, "1.6 Million Underage Laborers in Egypt: Official Figures." In Ahram.Org, [online], July 14, 2011 [cited April 25, 2012]; Available from. http://english.ahram.org.eg/NewsContent/3/12/16406/Business/Economy/-million-underage-workers-in-Egypt-Official-figure.aspx

Those working in agriculture face many challenges. By virtually every measure, lack of food security, vulnerability, poverty, and malnutrition are more profound in the agricultural sector than in other economic sectors. Almost one-quarter of the population (23%) lives below the poverty line, 7% of which are considered ultra-poor. Furthermore, in Upper Egypt the problem is particularly acute, as Upper Egypt contributes to poverty incidence by a larger proportion than the rest of Egypt[8]

1.1.3 Policy Context

The Labor Law, No. 12 of 2003, stipulates that children cannot be employed until age 14, except that children may be trained, starting at age 12. Minors cannot work more than 4 consecutive hours, more than 6 hours per day, after 7:00 pm, or overtime hours. However, the law explicitly excludes those working in agriculture, or those employed as domestic workers or working for family members.

The Child Law, Law No. 126, was enacted in 2008 and sets age limits for child employment. Children aged 15 and older are eligible for regular employment and children aged 12 and older are eligible for seasonal employment or apprenticeships. However, this law excludes domestic work, work in a family-run business, and agricultural work. This is significant, as the CWCLP focuses primarily on children who work in agriculture. Furthermore, Egypt identified 44 specific hazardous occupations under Decree 118 of the Ministry of Manpower and Migration (MOMM). This did not include agriculture, however. This leaves a significant gap in protection for child laborers in this potentially dangerous field.

Local trade unions report that Egypt's labor laws are well enforced in the formal sector. By contrast, the Government does not seem to be enforcing the labor laws effectively in the informal sector, including small factories and workshops, where observers have reported that employers often violate both adult and child labor laws.

1.2 CWCLP PROJECT INTERVENTIONS

CWCLP, funded by USDOL in December 2010, is a 4-year, $9.5 million project implemented by the WFP and its sub-partners, ILO and UNICEF. As is described in a separate comprehensive monitoring and evaluation plan (CMEP), the primary objective of the CWCLP is to use a multi-pronged approach to reduce the worst forms of child labor in the targeted communities. Through CWCLP, the WFP, ILO, and UNICEF will provide beneficiaries aid, using an approach towards the elimination of worst forms of child labor. The design they have employed allows for strong opportunities for replication in the future. Specifically, through CWCLP, the WFP, ILO and UNICEF have set out to accomplish the following goals:

- *Prevent* children from engaging in worst forms of child labor; *withdraw* children from WFCL and rehabilitate them by offering alternatives, including education and vocational training and apprenticeship (VTA);

[8] Kossaifi, G., Shafey, H. Evaluation of the National Human Development Report System-Case Study Egypt. New York, NY. August 21, 2012. Available from: http://web.undp.org/evaluation/documents/thematic/nhdr/Egypt.pdf.

- *Address root causes of child labor in agriculture* - the constraints to productive, safe and sustainable agriculture by *promoting decent work in agriculture and livelihood opportunities; and*
- *Increase access to social protection* activities to enable households to overcome their dependence on children to help their family meet basic household needs.

In quantitative terms, program-wide the CWCLP partners will provide 5,000 children who are under the age of 15 and already engaged in exploitative child labor with educational support, including transitional education opportunities and take-home rations. Three thousand children ages 14-17 will receive a package of incentives, as well as on-the-job and off-the-job training opportunities, including apprenticeships. Eight thousand children who have been identified as "at high risk" of entering labor (primarily the siblings of children who are working) will receive a package of incentives, including take-home rations, enhanced educational opportunities and facilities. Finally, 5000 heads of household and mothers who are vulnerable or at-risk of having a child who labors will be provided livelihood development and financial empowerment activities.

In order to meet these goals, CWCLP is being implemented in villages and hamlets in five Egyptian governorates: Assuit, Menya, Sohag, Fayoum, and Sharqiyah. In particular, the WFP, ILO, and UNICEF, in collaboration with local partners, designed CWCLP with five central components to meet their stated goals. We will describe these components briefly before we examine the components of the impact evaluation in greater detail. (For additional information on the details of the program, please refer to the Comprehensive Monitoring and Evaluation Plan (CMEP) and the Project Description):

1. **Reducing exploitive child labor and providing services to promote education:** CWCLP education component includes both formal and non-formal educational support for those children who are already involved in formal education, such as state supported schools. CWCLP targets children who are at risk of joining the labor pool due to their level of poverty or because they have siblings who are working. To prevent these children from entering the labor pool, CWCLP is providing awareness-raising activities as well as incentives such as daily snacks, tuition fees, remedial classes, and recreational activities. CWCLP is also providing training for the formal and community school teachers to strengthen their pedagogical capabilities to attract children and keep them in the formal education system. Support to non-formal system comprises the Community School component and the Apprenticeship component. (The Community Schools (CS) component is the primary focus of the impact evaluation, as will be described later in this report.) The CS component provides non-formal educational services to children engaged in or at risk of engaging in child labor. Targeted children are aged 6 to 13, not currently enrolled in school, and either working in or at risk of working in child labor. Families will receive support to enroll their children (e.g., cover the cost of birth certificates/national identification numbers, as needed) and assistance with other formal procedures, such as completing enrollment information. CWCLP will provide education expenses, school supplies, and in-school snacks. CWCLP will also provide students and their families with incentives to send them to school through a take-home ration (THR) program (consisting of provisions of rice, wheat flour, and oil). Additional activities include training local community members as master teachers and implementing an apprenticeship program for children between 14 and 17 years-old.

2. **Promoting sustainable livelihoods in targeted households:** The key component for the livelihood intervention focuses on providing small business support to families. Project partners will work with local communities and organizations to select highly vulnerable heads of households from among the families of beneficiary children. With technical support from CWCLP, partnering non-governmental organizations (NGOs) and local business associations will expand existing microfinance schemes that can then provide these heads of households with access to small business loans. These heads of households will also be provided with training on relevant income-generating activities implemented by partner NGOs, assisted by WFP and ILO, and in cooperation with the Ministry of Manpower and Migration (MoMM). The credit and training combined will provide an opportunity for income-generating activities that will hopefully prevent the need for school-age children to work.

3. **Raising awareness of exploitive child labor and the importance of education for all children:** This component seeks to raise awareness of the negative effects of child labor and the importance of education through community activities. Community activities will target parents, children, formal and informal leaders, and employers. Messaging at appropriate levels will be developed. These will be thematic and include the value of education, children's rights, and strategies to offset any loss of income for vulnerable families and to promote the CS activities.

4. **Supporting the review and revision of legislation on child labor and improving the capacity of organizations to participate in this revision:** This component aims to strengthen policies addressing child labor by supporting the review and revision of legislation impacting child labor. The intent is to implement these changes by 2015. The project plans to cooperate with the MOMM, National Council for Childhood and Motherhood (NCCM) and all relevant stakeholders on the translation of the National Strategy for the Elimination of Child Labor into a National Action Plan (NAP). It is hoped that a national decree will be issued with this policy document.

5. **Improving national research capacity on child labor:** The project will support research, evaluation, and the collection of reliable data on child labor through population surveys. This activity is important to illuminate the root causes of child labor and to identify effective strategies, policies, and good practices to combat it. Specific activities are still being developed and identified at this time.[9]

[9] While this information is not related to national research capacity on child labor, it was important to mention that CWCLP is developing a new child labor monitoring system in close cooperation with ILO. The new child labor monitoring system will capture all services provided to the child beneficiaries, as well as their families. Services include educational services and provision of daily meals and take-home rations. The project is working to have a web-based application so that NGOs, partners, as well as Community Development Associations (CDAs) would be able to access the application online from their work places. The application will have various security levels and will facilitate information display. This will be especially useful for program staff as they monitor the progress of implementation and outcomes.

1.3 EVALUATION COMPONENTS

As is demonstrated in the segment above, the CWCLP program is a complex integration of interventions targeted at children, families, community members, and relevant policy-makers to help eliminate the worst forms of child labor in Upper Egypt. The impact evaluation that is being undertaken by ICF in partnership with DOL and WFP *will not* evaluate all of the components above. Rather, it will examine the effect of a specific combination of interventions that are being implemented in the first year of the program. The combination of interventions includes: Community Schools (CS) and Take-Home Rations (THR).

It is important to note that the primary target of the impact evaluation is on the implementation of Community Schools. However, the CS component is being implemented along with take-home rations. This is because CWCLP partners are hoping to increase CS enrollment by providing children and families with a supplement (THR), so that families' well-being and health will not be at risk by sending children to school rather than to work. Clearly, these two components have a crucial link to one another. Therefore, both will be examined as a part of the impact evaluation. Furthermore, because of the importance of THR on the enrollment of children into CS, these two interventions will not be withheld from any child. As such, the impact evaluation will not examine the impact of each intervention individually, but rather, their combined effects as demonstrated in the hypotheses below:

- As Community School enrollment increases, child participation in agricultural work, especially hazardous work, will decrease.

- Implementation of Community Schools and Take-Home Rations will increase school enrollment.[10]

In the following section, the methodological approach to testing the hypotheses is described.

[10] It should be noted that the primary objective of the initiative is to decrease hazardous and/or exploitative child labor. School enrollment is an intermediate step to accomplishing this goal.

II METHODS

2.1 EVALUATION PARTICIPANTS

The baseline survey was carried out in five governorates of Egypt (Assuit, Menya, Sohag, Fayoum, and Sharqiyah),[11]in villages that were identified as having no existing primary school serving a substantial segment of children who were school aged and where children were at risk of participating in exploitive work. Participants included children between the ages of 6 and 13, and their parents, siblings, and extended family members who lived in the same house.

2.2 EVALUATION OBJECTIVES

It is hypothesized that if children had the option to go to a Community School (that is, a local school is put in place where one did not exist before) and if the family is provided with financial and social support to offset the cost of children attending school rather than working, then there would be an overall increase in school enrollment and a reduction in child labor. The objective of the present report is to describe the randomization and baseline survey process and show whether randomization was effective in balancing the intervention and control groups. The baseline data will also be used in post-intervention analyses to provide statistical control in order to improve the precision of impact estimate measures. Follow-up data collection will occur in the first quarter of 2013 to compare baseline outcomes with the outcomes after the intervention.

2.3 STUDY DESIGN

To test the effectiveness of the intervention, ICF is conducting a cluster random assignment study in which villages and/or hamlets are assigned to an intervention or control group. Those villages and hamlets that were randomly selected to participate in the project will have CWCLP interventions implemented by the WFP and their partners, while the other villages will be assigned to a "control" condition in which they will not receive the CWCLP interventions. A cluster design has several advantages, the most important of which is that it prevents spillover effects. Due to the geographic separation between villages, it is highly unlikely that children in the control villages will receive any benefits of the project. This makes it possible to make a valid comparison between the outcomes of children who participate and those who do not.

A total of 116 villages were included in the study. In order to maximize the project's reach to villages and children, an unequal allocation was used so that 80 villages were randomly assigned

[11] It should be noted that timing of implementation of various components may vary between governorates. For example, due to political challenges and difficulties identifying an NGO with appropriate capacity for implementation in Sharquiya, implementation will not begin there until the end of 2012. In the follow-up study, ICF will work with DOL and WFP to identify the timing of implementation of the various components to assess what, if any, influence the timing of implementation had on the outcome measures.

to receive the intervention and 36 were assigned into the control condition. Further details are provided in the Power Analysis section below. Children in the villages assigned to the intervention group are eligible to attend Community Schools and receive Take-Home Rations.
This randomization process was completed after the baseline data had been collected in early December 2011, in order to ensure that comparable screening and survey methods were used in all villages, to prevent any response bias in the surveys themselves, and to maximize the chances that children and families in both the intervention and control groups would participate in the surveys.

2.4 DATA COLLECTION

Prior to the fielding of the baseline survey in October 2011, CWCLP partners developed the "Child labor in the Agriculture sector survey in Egypt. Using this information, CWCLP contracted Cairo Demographic Center (CDC) to develop a Rapid Assessment (RA) to identify the areas (villages) where there were a high number of cases of children laboring in the agricultural sector. Based on the RA report's findings, the CWCLP partners provided ICF with a list of villages and hamlets where the program components would be implemented and the study would take place. Once the list was translated, it was provided to ICF to use for randomization purposes.

In order for the baseline survey to be carried out and ensure that the program was implemented in a timely manner, households needed to be identified that might have eligible children to participate in the CWCLP program. In order for a child to be considered to be eligible, they needed to meet the following criteria:

- Children needed to be between 6 and 11 years old;
- Child not currently enrolled in a national government school;
- Absent from school for at least the last two years (Children are removed from the school listing, if they are absent for the last two years); and
- Child engaged in or at risk of exploitative child work in agriculture.

ICF and DOL proposed a strategy to have the local data collection firm El Zanaty and Associates, who was conducting the baseline survey, first conduct a screening to identify eligible households. The WFP accepted this recommendation and offered to have their local NGOs work with the firm to help identify households, in a targeted way, by using their knowledge of local community members. As such, El Zanaty and Associates worked with the local NGOs to find potential households. If the household met the screening criteria, the data collection firm would conduct the household survey and child survey.

Data collection staff continued to visit households in each village until they identified a maximum of 30 eligible children (the maximum number of children that could be accommodated by any individual community school), at which point they stopped and moved on to other villages.[12]

[12] One ICF staff member visited Egypt and went to the field to monitor training and data collection conducted by El Zanaty and Associates.

Once 30 eligible children in each village were located, the enumerators from the El Zanaty group conducted the baseline survey with the head of household and with the children who were eligible to participate. It was decided that each household would have a maximum of two children who could participate in the study, while the other children could be enrolled in the project without participating in the study. Therefore, if a single household had more than two eligible children, the enumerator drew names randomly for those who could participate in the study. Specifically, they listed the names of all the eligible children in a household on individual slips of paper and then randomly drew two names out of a hat to determine which children would participate in the study.

Unfortunately, there was a misunderstanding on the part of the data collection firm regarding the eligible age of the children. Their understanding was that children were eligible up to the age of 13, because the CS is available to children up to the age of 13. However, the screening should only have included children up to age 11, because the program runs for two years and children above the age of 11 would age out of the program. Due to this misunderstanding, approximately 37% of the children ultimately were not eligible.[13] Therefore, once the baseline data were collected, the WFP revisited the villages where the ineligible children were and selected new children to attend the schools and participate in the program. The new children, however, will not be a part of the study, in order to ensure consistency across study participants.

Data collection for the baseline survey occurred between October 18, 2011, and November 10, 2011. There were a few delays due to the need to conduct the screening and due to the Eid Al-Adha feast. After the baseline data collection was completed, ICF randomized the villages and hamlets into intervention and control groups and provided the WFP with a list of villages that would participate in CWCLP and those that would constitute the control group. The WFP began the implementation process as soon as they were provided this list on the 11th of November, 2011. Prior to the follow-up study, ICF will work with DOL and the WFP to understand the timeline and process of implementation of the various activities.

[13] A detailed report was prepared by the project and sent to USDOL and ICF in May 2012, explaining the different reasons for exclusion of children. While the reduction in the number of children presents a challenge, as the remainder of the report will demonstrate, the impact evaluation design chosen was a cluster randomized control trial. Therefore, the number of children within the cluster is less relevant than the number of clusters in determining effect sizes. When ICF learned of the change in cluster size, it re-ran the power analyses using the new cluster size and determined the sample size was still sufficient to show moderate effects. The power analyses using the smaller cluster size is reflected in this report.

III SAMPLE SELECTION AND RANDOMIZATION

3.1 POWER ANALYSIS

A power analysis was conducted during the design phase of the study. We present part of that analysis here, fixing those parameters that have been determined during the course of study design and allowing others to vary.

During the evaluation design process, WFP provided a sampling frame of 180 hamlets or villages in the 5 governorates where the CWCLP project works that were eligible to receive a community school. In order to be eligible, a community had to have children that were working or at risk of working in exploitive child labor activities, and there must not have been an existing primary school accessible by some or all of the community's population. From this sampling frame, 116 villages were ultimately selected for inclusion in the study, of which 80 were randomly selected into the intervention group and 36 into the control group.

In the following analysis, we present estimated minimum detectable effect size (MDES) for the sample-based program impact estimate b_0 for a cluster randomization design using the formula proposed by Bloom (2005)[14]:

$$MDES(b_0) = \frac{M_{J-2}}{\sqrt{J}} \sqrt{\rho \frac{1-\rho}{n}} \sqrt{\frac{1}{P(1-P)}}$$

Here "J" represents the number of clusters and "n" the average number of individuals per cluster. "P" is the proportion of clusters assigned to the intervention condition. In this way, the formula allows for adjustment for unequal sample allocation ratios. Although balanced samples are optimal for maximizing power, the loss of power associated with moderately unbalanced allocation ratios is not severe, and the advantages of being able to include a larger number of villages in the intervention group are substantial.

M_{J-2} is calculated as a sum of t statistics, corresponding to the critical t value for the chosen level of significance α and the t value corresponding to the desired statistical power 1-β. For a two-tailed test this is:

$$M_{J-2} = t_{\alpha/2} + t_{-1\beta}$$

Using this formula, we fix the following five parameters:

J=116

[14] Bloom, H. S. (2005). Randomizing groups to evaluate place-based programs. *Learning more from social experiments: Evolving analytic approaches* (pp. 115–172).

n=23

P=0.69

α=0.05

1-β=0.9

Table 1. Intra-cluster Correlation (ρ) and Minimum Detectable Effect Size (MDES)

ρ	MDES
0.10	0.24
0.20	0.32
0.30	0.38

The intra-cluster correlation (ICC) is a critical parameter that describes the relative variance in outcomes across hamlets versus within hamlets. This is important because while we are randomizing by cluster (that is to say, by village/hamlet), we will be reporting outcomes at the individual level. The larger the ICC, the more similar children's responses are to the project within each hamlet, and consequently, the less new information we get from sampling more children within each hamlet. The ICC also encapsulates variability in responses to intervention across hamlets due to such factors as differences in crop cycles, local culture and gender roles, and modes of production. When ICC is high, we have to include more hamlets in the study in order to get enough information to tell whether the project had an impact. An ICC can range from zero to one. Higher values correspond to greater similarity within hamlets in response to an intervention. In educational and health impact evaluation studies conducted primarily in the U.S. and other developed countries, ICCs typically range between 0.10 and 0.25, indicating that there is a significant amount of variance in outcomes for students who receive the same intervention (Bloom, 2005). Under these assumptions, the minimum detectable effect size for the lowest expected values of the ICC is around .24. With higher values of ICC, effects of .38 should be detectable.

3.2 RANDOMIZATION

3.2.1 Sequence Generation

Randomization was conducted by ICF International. The initial sampling frame of 180 communities was used to randomly select a subset of villages or hamlets to be included in the evaluation study. Based on an initial power analysis and consideration of the available resources, a target sample size of approximately 120 villages was initially proposed. The power analysis determined a sample size of 152 villages (116 treatment villages, and 36 control villages) was sufficient to detect project impacts of moderate magnitude (.38), using standard statistical techniques, including regression and hierarchical linear modeling (HLM). In subsequent discussions, the WFP decided that they had sufficient resources to provide community schools in

80 villages that were meeting the target to be included in the project document and in the signed cooperative agreement between WFP and USDOL. In order to serve as many children as possible and reach as many villages or hamlets as possible, rather than dividing the sample group in half (which would optimize power), ICF planned to assign 80 villages into the intervention group and 40 villages into the control group. Subsequent investigation by the survey team showed that four villages in the sampling frame were, in fact, not eligible to receive a community school because there was an existing government school there, or because the number of eligible children was too low to meet the minimum enrollment required by the WFP to start a new community school. As a result, the final sample included 116 villages, of which 80 were randomly assigned to the intervention condition and 36 to the control condition.

A block randomization process was used. Blocks consisted of governorates. Within each governorate, villages were sorted by a pseudo-random number, and roughly the first 69% were selected into the intervention group, with the remainder being the control group. The randomization was done using standard commercial spreadsheet software.

3.2.2 Allocation Concealment

Randomization occurred at the village level after baseline data were collected, so the children in the villages did not know whether they were in the intervention or control group at the time of the baseline data collection.

3.2.3 Blinding

Since randomization of the villages occurred after baseline data collection, enumerators were blinded to intervention assignments while conducting the baseline survey.

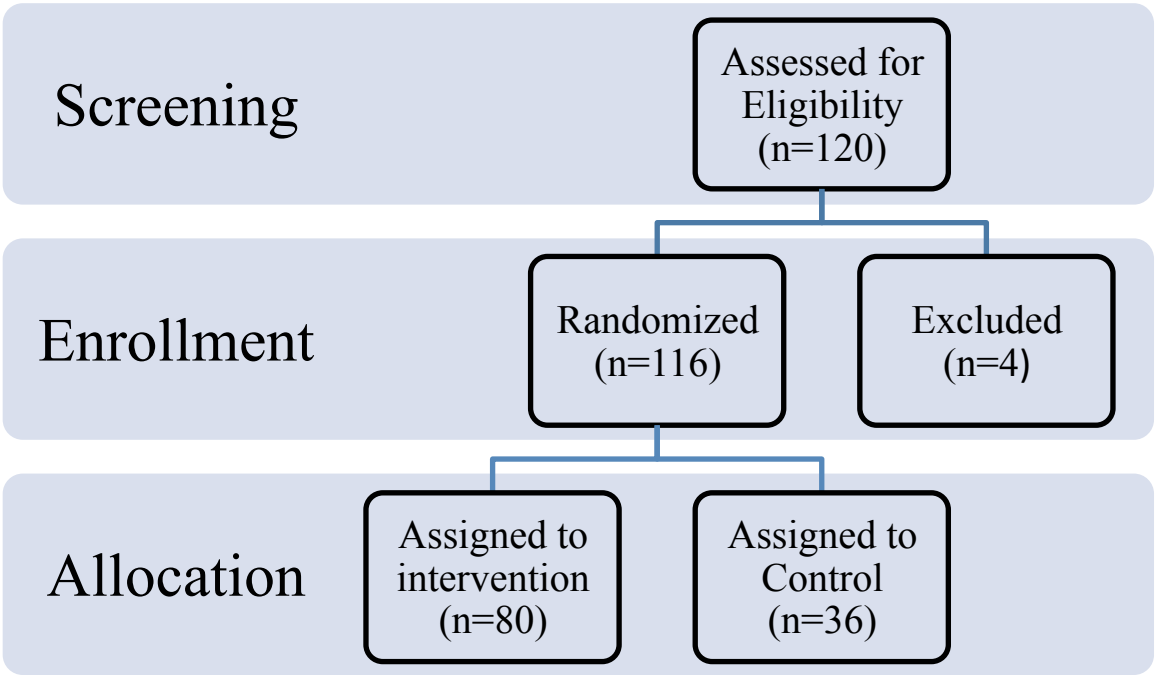
IV RESULTS

4.1 PARTICIPANT FLOW

The flow of participants through the various stages of the study and the allocation of villages are shown in Figure 1. Again, randomization was at the village level.

An initial sampling frame of 180 villages was selected as eligible for randomization, of which 120 villages were randomly selected. Of those, 116 were subsequently randomized (Figure 1). Of the 116 villages, 80 were randomly assigned to the intervention group and 36 to the control. Four villages were excluded from randomization because they were found, during data collection, to have an insufficient number of children eligible for a community school.

Figure 1: Randomization of Villages



From each village an average of 23 youth were identified and included in the study, representing about 2% of youth in the villages. Fourteen eligible families refused to participate, citing guidance from their religious leaders as reason not to participate in interviews. A total sample of 2,705 youth participated in the interview (including complete and partially complete surveys). A total sample of 2,059 household surveys was completed. And a total of 13,806 household members were interviewed. It should be noted however, after the CWCLP team visited the field, 37% of the children originally included in the sample were found to be ineligible. The analysis in this report, however, looks at the sample as it was originally collected. In the next round of data collection and analysis, only those children who were eligible are examined.

Table 2. Respondents

Variables	Intervention	Control
Number of villages	80	36
Number of children eligible	2,056	944
Number of surveys administered		
Complete	766	373
Partially complete	1,086	480
Incomplete	2	-
Total	1,854	853
Response rate	90.1%	90.4%
Number of respondents per village		
Minimum	13	15
Maximum	32	32
Average	23.2	23.7

4.2 STATISTICAL METHODS

For this baseline report, intervention and control children were analyzed for equivalence in gender, age the children left school, and hours spent per week on a number of activities, such as work, chores, family care, and sleep. The baseline survey also collected information regarding household expenditures but did not collect information about household income. Changes of household expenditures, which are a more reliable measure than income data, should provide us insight into the economic stability of the families in the beneficiary groups versus the control groups. The groups were also compared on the percentages of youth that reported being exposed to hazardous work conditions. Significance tests were conducted using a hierarchical linear modeling (HLM) framework to identify differences of potential substantive importance.

4.3 ANALYSIS

4.3.1 Comparison of Intervention and Control Groups

Descriptive statistics for the participants at the beginning of the study are presented in Table 3 below. Since none of the selected children were in school, the intervention and control groups were compared on gender, age, age the children left school, and hours spent on work per week. Participants were also compared based on their hours spent per week on chores, family care activities, and personal activities, including sleep. Lastly, percentages of children who experienced a variety of hazardous activities or injuries as a result of their work were compared.

There was a slightly lower proportion of girls in the intervention group (51%) compared to the control group (53%). The children in the intervention and control groups were the same age, on

average 10.6 years old. Slightly less than half the children in both the intervention and control groups had ever attended school (48% and 49%, respectively). In both groups, those children that left school did so at about the same age on average, about 9.7 years. Most children (85%) in both groups reported that they had worked. Only a small percentage of children in both groups attended school during the 2010-11 school year (13% of the intervention group and 14% of the control group).

We find that children in the intervention group report spending less time in paid work, on average, than the control group children (Table 4). Children who were beneficiaries reported spending about 30 hours per week on paid work, compared to the 33 hours reported by the control students. Children in the intervention and control groups spent roughly equal amounts of time per week on chores, care of other family members, and personal activities.

Though children in the intervention group worked fewer hours, they were more likely to report working in hazardous conditions (Tables 4 and 5). Children in the intervention group were more likely to report being exposed to pesticides, extreme heat or cold, fire, and loud noises, as part of their work. These children were also more likely to report having to lift heavy objects as part of their jobs and working with sharp objects, near machinery and at heights. On the other hand, children in the control group reported skin problems and stomach problems at a higher rate than children in the intervention group.

Exposure to any hazards emerges as a significant difference between the intervention and control groups, as shown in the HLM-based models that are presented in the final section of this report. It appears that the randomization was not completely successful in balancing the intervention and control groups along these dimensions, but it will be possible to adjust for these baseline differences in estimating project impacts once follow-up data are available.

Table 3. Baseline Characteristics of Respondents

Variables	Intervention			Control		
	Mean or Count	SD or Percent	n	Mean or Count	SD or Percent	n
Girls	937	50.6%	1,852	451	52.9%	853
Age	10.6	2.23	1,852	10.6	2.24	853
Ever attended school	880	47.5%	1,852	421	49.4%	853
Age stopped school	9.7	1.69	875	9.7	1.76	418
Attended school last year (2010-2011)	244	13.2%	1,852	122	14.3%	853
Worked	1,567	84.6%	1,852	722	84.6%	853
Any exposure to hazards*	1,423	90.9%	1,565	592	82.0%	722
Any injury during work	1,062	67.8%	1,566	455	63.0%	722

*Statistically significant at p<.05, based on HLM models that are presented below in Table 8. No other significant differences identified.

Figure 2. Frequency Distribution of Age among Children Responding to Survey

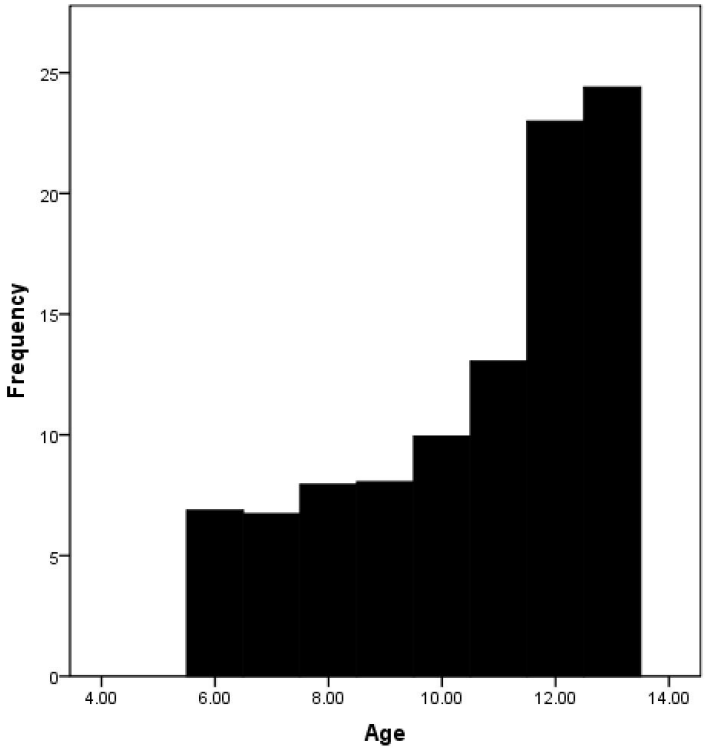


Figure 3. Frequency Distribution of Reported Weekly Work Hours

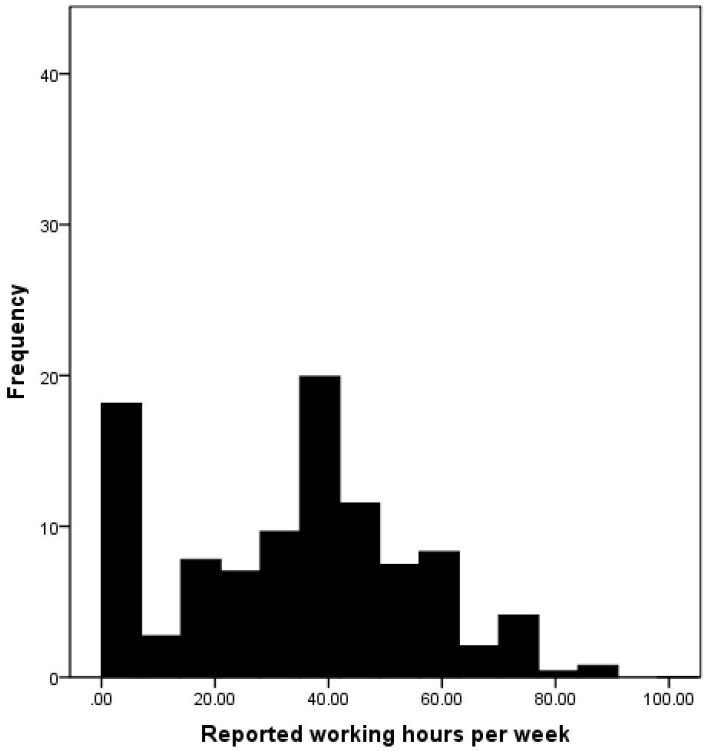


Table 4. Weekly Hours Reported in Work and Other Activities

Variables	Intervention n=1,852		Control n=853	
	Mean	SD	Mean	SD
Time spent working	30.6	20.5	33.3	21.3
Time spent on household chores	12.9	10.4	13.0	10.8
Time with family and friends	26.6	14.4	25.1	14.9
Time caring for others	1.9	5.1	1.7	4.8
Personal time	21.0	10.7	20.6	10.8
Time spent sleeping and resting	63.7	9.2	64.9	9.5
Other	9.8	6.8	8.2	5.4

Table 5. Reported Exposure to Hazards during Work

Hazards	Intervention			Control		
	Count	Percent	n	Count	Percent	n
Pesticides	926	59.2%	1,565	325	45.0%	722
Extreme heat/cold	996	63.6%	1,565	322	44.6%	722
Lifting heavy objects	690	44.1%	1,565	273	37.8%	722
Sharp tools	1,159	74.1%	1,565	491	68.0%	722
Machinery	649	41.5%	1,565	248	34.3%	722
Dust or smoke	587	37.5%	1,565	232	32.1%	722
Fire	109	7.0%	1,565	23	3.2%	722
Working at night	62	4.0%	1,565	23	3.2%	722
Loud noise, vibration	185	11.8%	1,565	53	7.3%	722
Heights	33	2.1%	1,565	7	1.0%	722

Table 6. Reported Illnesses, Injuries, and Other Adverse Events during Work

Event	Intervention			Control		
	Count	Percent	n	Count	Percent	n
Cuts or wounds	837	53.4%	1,566	382	52.9%	722
Fractures	83	5.3%	1,566	28	3.9%	722
Dislocations/sprains/strains	242	15.5%	1,566	109	15.1%	722
Burns	31	2.0%	1,566	10	1.4%	722
Breathing problems	111	7.1%	1,566	37	5.1%	722
Eye problems	167	10.7%	1,566	71	9.8%	722
Skin problems	94	6.0%	1,566	54	7.5%	722
Stomach problems	107	6.8%	1,566	61	8.4%	722
Fever	354	22.6%	1,566	130	18.0%	722
Extreme fatigue	289	18.5%	1,566	99	13.7%	722
Other	13	0.8%	1,566	10	1.4%	721

4.3.2 Hierarchical models

As noted in the power analysis section above, a key parameter of interest is the intra-cluster correlation coefficient, ρ. A set of basic hierarchical models were developed to estimate ρ in order to lay the foundation for future analyses. Our models take two forms. For models with binary outcomes (ever work, school attendance, injury, etc.), we use the following "Bernoulli" specification, which uses the Logit link:

Level-1 Model

$\text{Prob}(\text{worked} \mid \beta) = \phi$

$\text{Log}[\phi/(1-\phi)] = \eta$

$\eta = \beta_{0j}$

Here, ϕ is a parameter that represents the probability that the child worked, given a vector of predictor variables β. Since these are "empty" models with no predictors, the only element of the vector β is the intercept β_{0j}. We include ϕ in order to show how the logit model is constructed, using the log-odds that the child worked, which is given the label η.

β_{0j} represents the intercept for the model. The intercept has a fixed part, γ_{00}, and a random disturbance term, u_{0j}, which varies across villages. If we were to specify a model with independent predictor variables rather than just and intercept, the β_{0j} would be followed by other subscripted β elements.

Level-2 Model

$\beta_{0j} = \gamma_{00} + u_{0j}$

For models with continuous outcomes (estimated hours allocated to work activities), we use the following "normal" specification:

Level-1 Model

$hours_{ij} = \beta_{0j} + r_{ij}$

In this model no logit transformation is needed, so the raw variable representing hours worked is used as the outcome variable. It is followed by an intercept, β_{0j}, and an individual-level (child-level) error term $r_{ij,}$ representing the i^{th} child in village j.

Again, the intercept is allowed to vary at level 2. It has a fixed component γ_{00} and a village-level error term $u_{0j:}$

Level-2 Model

$\beta_{0j} = \gamma_{00} + u_{0j}$

Analyses were done using HLM version 7 software.[15] All models are "empty," in the sense that only the outcome variables were specified, with no predictor variables. We estimate these empty models in order to generate variance component estimates for levels 1 and 2 in the case of the normal models, and for level 1 in the case of the Bernoulli models (in the Bernoulli models, error variance is treated as fixed at $\frac{\pi^2}{3}$) [16]. These estimates are used to calculate the intra-cluster correlation for each outcome. We present the results in Table 7. Estimated ρ ranges between .11 and .28.

Table 7. Estimated Intra-Cluster Correlation ρ

Models with all children	**Model type**	**Estimated variance component**		
		Level 1 (child) n=2,705	**Level 2 (village) n=116**	**ρ**
Ever school	Bernoulli	1.22	3.29*	0.27
Ever work	Bernoulli	0.69	3.29	0.17
Attended school last year	Bernoulli	1.13	3.29	0.26
Work time	Normal	50.17	381.18	0.12
Chore time	Normal	12.77	98.52	0.11
Models with working children only	**Model type**	**Level 1 (child) n=2,286**	**Level 2 (village) n=116**	**ρ**
Exposure	Bernoulli	1.25	3.29	0.28
Injury	Bernoulli	1.08	3.29	0.25
Log time	Normal	0.08	0.53	0.14
*For Bernoulli models, error variance is treated as fixed at $\pi^2/3$.				

[15] Stephen Raudenbush, Tony Bryk, & Richard Congdon, 2010. HLM 7 Hierarchical Linear and Nonlinear Modeling. Scientific Software International, Inc.

[16] Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. SAGE publications Ltd.

Finally, HLM models were also estimated to test for differences between the control and intervention groups at baseline to assess sample balance (Table 8). Since the intervention and control groups were randomly selected, all differences across the groups are due to chance. Significance tests are designed to assess the likelihood that these differences are due to chance, so they are redundant in this case.[17] We are, nonetheless, including significance tests to help the reader identify differences between the treatment and control groups that are unexpectedly large relative to sample variability.

The same general model structures were used as those presented for the ICC estimates, with the exception that in each of the models presented here, we also introduce a dummy predictor variable representing assignment to the intervention group as a level-2 predictor. In each case, the intervention variable is grand-mean centered. Also, in contrast to the empty models for ICC estimation, the dependent variables are those shown in the demographic comparison, presented in Table 3, above. We do this rather than focus on outcomes related to the evaluation study's hypotheses because the goal for this analysis is simply to flag differences between the intervention and control group that are potentially interesting.

In these models, we provide both the intercept estimates and the coefficient estimates for the intervention dummy variable, but our focus is on the intervention dummy variable coefficient for each model. This is because that coefficient estimate describes the observed difference between the treatment and control group on the dependent variable. As Table 8 shows, only exposure to hazards emerges as a significant difference, having a p-value of 0.034 associated with the intervention coefficient estimate.

[17] Pocock, S. J., Assmann, S. E., Enos, L. E., & Kasten, L. E. (2002). Subgroup analysis, covariate adjustment and baseline comparisons in clinical trial reporting: current practice and problems. *Statistics in Medicine*, 21(19), 2917–2930.

Table 8. HLM Models for Differences between Control and Intervention Group

Variable		n		Intercept					Intervention				
	Model type	**Level 1**	**Level 2**	**b**	**SE**	**T**	**df**	**p**	**b**	**SE**	**t**	**df**	**P**
Female	Bernoulli	2705	116	0.5	0.0	31.0	114	0.000	0.0	0.0	0.8	114	0.436
Age	Normal	2705	116	10.7	0.1	135.7	114	0.000	0.0	0.2	0.2	114	0.870
Ever attended school	Bernoulli	2705	116	0.0	0.1	-0.1	114	0.901	-0.1	0.2	-0.5	114	0.638
Age stopped school	Bernoulli	1293	115	9.6	0.1	133.2	113	0.000	0.1	0.2	0.7	113	0.483
Attended School Last Year	Bernoulli	2705	116	-2.1	0.1	-17.3	114	0.000	0.0	0.3	0.0	114	0.968
Worked	Bernoulli	2705	116	1.9	0.1	19.0	114	0.000	0.0	0.2	0.1	114	0.943
Weekly work hours	Normal	2286	116	37.2	0.8	49.4	114	0.000	2.0	6.2	0.3	114	0.752
Weekly chore hours	Normal	2286	116	12.2	0.4	33.2	114	0.000	4.7	3.0	1.6	114	0.123
Any exposure to hazards	Bernoulli	2286	116	2.3	0.1	17.9	114	0.000	0.6	0.3	2.1	114	0.034
Any injury during work	Bernoulli	2286	116	0.8	0.1	7.2	114	0.000	0.0	0.2	0.1	114	0.948

V DISCUSSION

5.1 INTERPRETATION

We found that the intervention and control groups were roughly equivalent in terms of age, gender balance, and percentages of children who ever attended school. The vast majority of children in both groups never attended school. About half of the children in both the intervention and the control groups never attended school. For those that went to school, in both groups, they left when they were about age 10, on average.

We find that children in the intervention villages are working less per week, on average, than children in the control group (30 hours versus 33 hours), though the difference was not significant. And, though they worked less, the intervention group children were significantly more likely to report working in hazardous conditions. This difference is likely due to random sample variability and will be adjusted for in the final analyses.

5.2 GENERALIZABILITY

Results are not designed to be generalizable to the whole population of Egypt, but rather only to those communities in which the CWCLP project is currently operating, because the project may operate differently in other parts of the country. Furthermore, because only the first 30 eligible children who were identified in each village were included in the study, results may not generalize well to those children who may enter the Community Schools component later in the year. However, we hope that the results of this impact evaluation and those of the follow-up study will add to the knowledge base regarding the impact of this type of educational intervention (Community Schools) on child labor.

Based on the fact that not all children identified for each class met the eligibility criteria, classrooms needed to be augmented with newly enrolled children partway through the intervention period in order to maintain full classes. This was done so that the CS met the necessary criteria of enrolling a minimum of 25-30 children in order to remain open. The additional children who are added will participate fully in the interventions, but will not be included in the study. ICF does not anticipate that this will problematic, as there is already a sufficient sample size to estimate effects.

Any subsequently enrolled children will not be included in the current evaluation, but follow-up data for those children who decline to participate or who drop out will be collected in order to support intent-to-treat analyses. In general, the follow-up data collection will provide information on participating children's level of exposure to the project so that impact estimates can be adjusted accordingly.

The evaluation results will be relevant mainly to those children who were initially identified as eligible. This requires a somewhat narrower focus for the interpretation of findings than may be desired; for example, the children who enroll early in the project could potentially be from families with social capital that connects them to the local implementing NGOs. If this is the case, we will not be in a position to make claims about how well the project works for children whose families are among the poorest of the poor.

Nevertheless, the focus of the study is an important one: the results will be directly relevant to future programming by the CWCLP partner organizations, which are likely to use similar screening and recruitment methods in future implementations of similar projects. In this way, the evaluation should provide extremely valuable information on the project's impact, which will inform both current practice and future project design.

5.3 NEXT STEPS

In the first quarter of 2013, the ICF team will return to the field to conduct follow-up data collection using the same instruments to identify changes in the outcomes of children and families who participated in the CS and THR components of CWCLP.