

FINAL TECHNICAL REPORT / RAPPORT TECHNIQUE FINAL

ANNEX 3B- ENDLINE SURVEY PROTOCOL

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End-line Survey Protocol

January 2018

“Scale up of Homestead Food Production for improved household food security and nutrition in Cambodia”

FISH ON FARMS PHASE 2:

FAMILY FARMS FOR THE FUTURE (FF4F)

IDRC Grant Agreement No. 107982-002

Helen Keller International and University of British Columbia



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I. Background

Maternal and child undernutrition stemming from multidimensional poverty is a major public health problem in Cambodia. High rural poverty coupled with limited social safety nets, environmental constraints, and dependence on rain-fed subsistence agriculture have led to conditions in which approximately one fourth of the population lacks access to sufficient quantities of nutritious food.¹ Despite concerted efforts in the past decade, undernutrition rates for women and children have failed to improve significantly. Approximately 40% of children are stunted and 20% of women of reproductive age (WRA) are underweight.^{2, 3} Micronutrient deficiencies also remain high. A recent study completed by Skau et. al revealed inadequate dietary intake of iron, folic acid, calcium, zinc and numerous B vitamins among WRAs and children under the age of five.⁴ Furthermore, although iron-deficiency anemia is low in Cambodia, 56% of children under five years of age and 45% of WRA are anemic.³

In order to address poor land utilization, under-nutrition and food insecurity, Helen Keller International (HKI) has implemented a Homestead Food Production (HFP) model in Cambodia and elsewhere^{4,5}. HFP focuses on women farmers and fosters year-round environmentally sustainable production of micronutrient-rich fruits, vegetables and animal source foods^{6,7}. However, to date there is a lack of rigorously designed studies assessing the effectiveness of HFP at improving food security and nutrition outcomes. To address this, HKI and the University of British Columbia (UBC), through CIFSRF funding, are conducting a two-phase research and development study assessing the impact of sustainable models of integrated HFP at improving food security, nutrition outcomes, livelihoods, and women's empowerment in Cambodia. During the first phase, known as 'Fish on Farms', 900 women farmers were randomly assigned for 24 months to three arms: 1) home gardens only; 2) home gardens plus aquaculture (fishponds); and 3) control. Findings from Fish on Farms identified several factors that may have limited the success of some households, including issues with seasonality of aquaculture; limited business training, including limited financial literacy and opportunities for income generation; and barriers to uptake and continuation of HFP technologies (e.g. agricultural and aquaculture practices), such as seasonal migration. Building on the strengths and addressing limitations presented in FOF, the scale up study known as Family farms for the Future (FF4F) was then conceived and is currently under implementation.

II. Purpose

The overarching goal for the end-line survey is to compare across time and diverse agro-ecological zones, the impact of EHFP on the health, nutrition and food security status, and livelihoods of rural households in Cambodia who have participated in the scale-up study Family Farms for the Future.

2.1 Research Objectives

In comparison to baseline measures, this survey intends to:

1. Examine changes over time in beneficiaries' knowledge and practices of different models of homestead food production at the household level.
2. Determine the main drivers of attrition.
3. Extent to which EHFP promoted technologies and practices are maintained among those who remained in the project as well as those who dropped out.
4. Examine changes over time in the extent of women's empowerment, including involvement in homestead food production and decision-making over how income from EHFP is used
5. Assess change in knowledge and practices as it relates to water, sanitation and hygiene.
6. Assess uptake of knowledge of optimal infant and young child feeding practices and health seeking behaviors as demonstrated through nutrition and health education training and behavior change communication materials delivered through the program.
7. Assess change over time in household food security status after implementation of EHFP for 2 years.
8. Assess household financial management, decision-making, and utilization of formal and informal credit services.
9. Evaluate change in the anthropometric status of women of reproductive age and their young children using anthropometric measurements.
10. Compare differences in homestead food production practices between inactive and active households.
11. Determine the extent to which EHFP technologies, methodologies, and practices are sustained among inactive households.
12. Determine the main drivers of attrition among inactive households.

III. Methods

3.1 Study Location

The end-line survey will commence on Feb 1, 2018 for approximately two weeks. It will be conducted in all four project areas and within the same ten districts selected at baseline: Chamka Leu, Choeung Prey, Kampong Siem, Angkor Chey, Chuuk, Kampong Trach, Chba am Pov, Chrouy Changva, Kampong Trabek, and Pras Sdach.

3.2 Selection Criteria

Households were required to meet the following criteria to participate in the scale up study and subsequently the baseline and end-line surveys:

- Have a woman of reproductive age 15-49 years old in the home;
- Have a child under five years of age living in the home;
- Be classified as poor (within the two lowest categories of poverty) as determined by community wealth rankings based on income and assets;
- Demonstrate a willingness to cost-share on agricultural inputs;
- Have suitable land for EHFP activities;
- Give their informed consent to participate in the program.

3.3 Sampling Procedure

At baseline, the sample was derived in a two-stage process. In Kampong Cham, Prey Veng and Khan Meancheay, all villages (clusters) enrolled in the study were listed in the sampling frame and a simple random selection of 65 villages were selected using probability proportional to population size, where population is the number of households enrolled per village. In the second stage, 433 households were randomly selected using simple random sampling. In contrast, the sample in Kampot Province (n=654) was purposefully derived from the surveillance trial, the pragmatic RCT nested within FF4F, meaning only trial households were selected from Kampot Province.

3.4 Sample Size

The same households interviewed at baseline will be approached for interview at end-line, with the exception of control households from the pragmatic RCT. At the project's inception, we had planned on conducting two cross-sectional surveys at base-line and end-line. We have since

revisited this decision and have chosen to implement a longitudinal design to better assess how households have moved through the EFHP program, and to improve precision with regard to measuring change over time for the above-mentioned objectives. Furthermore, following the same households over time will also allow us to elicit critical information on attrition that will speak to program effectiveness and sustainability, and compare differences, if any, in homestead food production practices between inactive and active households and determine the main drivers of attrition.

The original sample size was calculated with the intention to conduct two cross-sectional surveys. Specifically, it was designed to capture a change of 10 percentage points between baseline and end-line based on the following assumptions: i) baseline values of 50%; ii) a Design Effect of 2; iii) 80% power and an alpha 0.05; iv) finite population adjustment to account for the fact that the sample (n=1087) is greater than 5% of the study population (n=4600). Returning to the same households will inevitably reduce the design effect and increase the power of our estimates.

3.5 Survey Instruments

In the event that a household is deemed to be no longer participating—*defined by HKI as unable or unwilling to continue participation in the project's activities and no longer receiving inputs for EHFP as of the last distribution round held December 2017 to February 2018*—only an attrition survey will be administered (**Appendix A**). For households who are still actively participating, the full-scale survey used at baseline will be conducted (**Appendix B**).

The survey tool will consist of the following nine modules: 1) participant information and household information; 2) homestead food production (including separate sections on horticulture, poultry and fish production); 3) degree of project contact and training with households; 4) gender equity; 5) water, sanitation and hygiene; 6) health and nutrition related knowledge, attitudes and practices; 7) food security; 8) access to credit and household finances; and 9) anthropometry.

1. Participant information and household information.

This section will include basic demographic information about the respondent and her family, including household size, education level, and kinship ties between household members. In addition, this module will be used to elicit household wealth status based on the validated measure used in the national demographic and health survey. The equity tool provides

information on relative wealth and ranks households' wealth based on real asset possessions and living conditions. This will allow us to determine compare project participants to national level data on wealth status by region.

2. Project Contact and Training

This module includes information about the frequency of contact between households and the project staff specifically, HKI field staff and supervisors, local NGO staff, village health volunteers, community health workers, district agricultural extension workers, and village model farms. This information will allow us to determine if differences in level or frequency of contact with beneficiaries had any impact on retention. Additionally, questions will be asked about type of training received, who from the household attended each training and number of training(s) attended.

3. Homestead Food Production

This module contains information on current agriculture practices, and examines knowledge and utilization of improved agriculture practices. Specifically, questions on farming practices, irrigation, income earned and HFP outputs produced will be asked to determine changes in HFP over time.

4. Gender Empowerment

Questions in this section are adapted from the Women's Empowerment in Agriculture Index tool. The two dimensions of interest in this project, agricultural production and income generation will be assessed. Changes in these indicators will be monitored over time to assess impact of the nurturing connections gender empowerment training on gender dynamics in the household.

5. Water Sanitation and Hygiene

This section includes questions regarding sources of water for a multitude of uses including household use, agricultural production, and drinking. Furthermore, questions on human and household waste disposal, as well as handwashing practices of women and children will be asked.

6. Knowledge, attitudes and practices regarding health and nutrition

This module contains questions designed to elicit the primary caregivers' knowledge, attitudes and practices pertaining to infant and young child feeding, maternal and child health and nutrition literacy, and health-seeking behaviors.

7. Food Security

This module contains questions adapted from the household food insecurity access scale (HFIAS). Using this validated tool, changes in household food security status will be assessed over time.

8. Access to Credit and Household Finances

Questions in this section will highlight how households have cost-shared in the project through the utilization of formal and informal credit services. They will further shed light on changes in household financial management and decision-making.

9. Anthropometry

Height and weight measurements for the female caregiver and the youngest child under five years of age will be taken using FANTA's Anthropometric Indicators Measurement Guide (**Appendix C**). Changes in body mass index (BMI) of adult women, along with changes in prevalence of stunting, wasting and underweight among children under five years of age based on World Health Organization (WHO) child growth standards will be assessed.

3.6 Training

The survey training will be a minimum of three days in duration. On the first day, all enumerators will be trained to have a thorough understanding of the survey objectives, research methodology, interview guides, and interview techniques. On the second day of training, the team will practice interviewing in pairs to make sure the question guides are clear. The survey tools will then be pre-tested in a community where the study will not take place on the morning of the third day. The afternoon will then be devoted to recapping lessons learned, making necessary revisions to the survey instruments, and finalizing the composition of the research teams.

3.7 Survey teams

There will be four survey teams, each consisting of one UBC or HKI field supervisor, 5 enumerators, and 2 anthropometric technicians. Survey teams will conduct a minimum of 4 tablet-based interviews per day.

UBC supervisor responsibilities

1. Ensure all survey tools are completed for translation and adapted into the electronic surveys (tablets) in advance of enumerator training
2. Develop end-line survey protocol, training guide and conduct enumerator training
3. Supervise data collection and respond to enumerator queries and concerns.
4. Develop end-line survey analysis plan in collaboration with UBC statistician and senior project management team (SPMT)

HKI Field Supervisor responsibilities

1. Ensure all research tools are translated and adapted into the ODA tablets
2. Ensure baseline and end-line household identification numbers and respondents match
3. Identify villages to be surveyed and ensure correlation with baseline villages
4. Work with UBC supervisor to develop daily schedule of interviews
5. Respond to enumerators' questions, comments and concerns in a timely fashion and course correct where necessary
6. Review interview transcripts and check for accuracy and completeness of questionnaires
7. Clean data and prepare for analysis

Enumerator responsibilities

1. Ensure familiarity with and understanding of all research tools (i.e. attrition survey, end-line survey, and anthropometric measurement guidelines).
2. Obtain informed consent prior to data collection
3. Conduct attrition survey on non-active households
4. Conduct end-line survey with active households
5. Use standard interviewing techniques and present themselves in a professional manner
6. Record all responses on ODA tablets provided by HKI

3.8 Consent

Prior to conducting interviews, written informed consent will be obtained from all participants. Where participants are not able to read, a thumbprint, along with a witness' signature will be obtained. All consent forms will be translated into Khmer. Confidentiality will be maintained throughout the study. All respondents will be informed that participation in the survey is

completely voluntary. Respondents will be given the opportunity to refuse participation in the study or refrain from answering any question at any time throughout an interview.

3.9 Data Collection

A detailed data collection schedule will be developed which includes logistic information of the villages visited by each enumerator and the number of interviews conducted over the course of survey period. Each research team will be responsible for preparing all necessary materials before leaving Phnom Penh for the field and before each day of data collection. Upon arrival at the household, the team will explain the objective of the end-line survey and conduct either the attrition survey or the end-line survey with the household. All materials for data collection will be translated into Khmer prior to data collection and translated back to English to ensure accuracy.

Attrition Survey vs. End-line Survey

Trained enumerators will record the household identification number, cluster number, village name and date of data collection onto the ODA tablet. They will then briefly explain the purpose of the end-line survey and obtain informed consent prior to any data collection. The decision to proceed with the attrition survey will only then be made by asking households directly if they are currently participating in the FF4F project. If the households say *no*, the built-in skip pattern will direct the enumerator to the attrition survey where the following information will be collected: reason for drop-out; time point at which drop-out occurred; frequency and level of contact with project partners and HKI staff; and current homestead food production practices. In contrast, if the household responds *yes*, the built-in skip pattern will direct the enumerator to the complete end-line survey, described above. Enumerators will complete the interviews using the ODA tablets as practiced.

3.9.1 Data entry and analysis

Data for the attrition and end-line surveys will be entered and cleaned in HKI offices in Phnom Penh Cambodia by HKI staff using IBM SPSS v. 22. An analysis plan will be co-developed by the HKI and UBC team. Data will then be sent to UBC where analysis will be completed by a trained statistician.

3.9.2 Timeline

Data collection will take place between February and March 2018. The main research activities include developing study protocol and research tools; reviewing, translating, pre-testing and finalizing the question guides; conducting research team training; conducting data collection; data translation; data analysis and reporting.

3.9.3 Ethical Considerations

Necessary steps will be taken to ensure participant confidentiality and privacy using a unique identification number on questionnaires and in the electronic database. Consent forms will be kept in a separate locked location away from the surveys. Ethics approval has been obtained for this research component from Cambodia's NEHCR and from UBC's Behavioral Research Ethics Board.

3.9.4 Data Storage

All electronic data files will be stored on password-protected computers and/or secure servers accessible only to members of the research team. Archived electronic data files, consent forms, or other papers containing data will be stored in locked filing cabinets in locked storage rooms at HKI, Cambodia.

De-identified data will be sent from Cambodia to UBC, Canada. Data will be sent by email over a password-protected spreadsheet. All co-investigators and research assistants working on the project will have access to the data. Responsibilities concerning privacy and confidentiality will be discussed with the research assistants.

Paper and archived electronic data will be stored in locked filing cabinets in locked research rooms at UBC for at least 5 years following publication of research findings. After this time, they will be physically destroyed.

IV. References

1. USAID. Cambodia: Nutrition Profile. Cambodia, 2014. Available at https://www.usaid.gov/sites/default/files/documents/1864/USAID-Cambodia_NCP.pdf. Accessed 17 August 2017.
2. Council for Agricultural and Rural Development. National Strategy for Food Security and Nutrition 2014-2018: Cambodia, 2014. Available at <http://alipsea.org/alipseaonlinelibrary-dashboard/get/file/Strategic-Framework-for-Food-Security-and-Nutrition-in-Cambodia-2014-2018-SFFSN-Cambodia.pdf>. Accessed 12 August 2017.
3. National Institute of Statistics. Cambodia Demographic and Health Survey 2014. Phnom Penh, Cambodia and Rockville, Maryland, USA: National Institute of Statistics, Directorate General for Health, and ICF International; 2015.
4. Olney D, Vicheka S, Kro M, Chakriya C, Kroeun H, SokHoing L, et al. Using program impact pathways to understand and improve program delivery, utilization, and potential for impact of Helen Keller International's homestead food production program in Cambodia. *Food Nutr Bull.* 2013;34:169–84.
5. Olney D, Talukder A, Iannotti L, Ruel M, Quinn V. Assessing impact and impact pathways of a homestead food production program on household and child nutrition in Cambodia. *Food Nutr Bull.* 2009;30:355–69.
6. Weinberger K. Home and community gardens in Southeast Asia: potential and opportunities for contributing to nutrition-sensitive food systems. *Food Secur.* 2013;5(6):847–56.
7. Talukder A, Panagides D, Kroeun H, Moench-Pfanner R, de Pee S, Bloem M. Home gardening in Cambodia: the complete manual for vegetable and fruit production. Phnom Penh, Cambodia; 2005.