



Save the Children Bangladesh  
Endline Survey Results:  
Nobo Jibon Multi-Year Assistance Program

Volume I – Report

TANGO International Review  
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Nobo Jibon

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## Acronyms

ADPC	Asian Disaster Preparedness Center
ANC	Antenatal care
ARI	Acute respiratory tract infection
BCC	Behavior Change Communication
C&F	Clearing and Forwarding
CBGP	Community-based growth promotion
CC	Community Center
CCM	Community case management
CHCP	Community health care provider
CIF	Cost, insurance and freight
CMAM	Community Management of Acute Malnutrition
CODEC	Community Development Center
CPMC	Collection Point Management Committee
CPP	Cyclone Preparedness Program
CSR	Commodity Status Report
DAE	Department of Agricultural Extension
DAP	Development Assistance Program
DDM	Department of Disaster Management
DGFP	Directorate of Family Planning Services
DGHS	Directorate General of Health Services
DHS	Demographic and Health Survey
DLS	Department of Livestock Services
DMB	Disaster Management Bureau
DMCR	Damaged and Missing Commodity Report
DMFO	Deputy Manager Field Operations
DoF	Department of Fisheries
DPHE	Department of Public Health Engineering
ECP	Emergency contingency plan
ENA	Essential Nutrition Actions
EP	Extreme poor
EPI	Expanded Program on Immunization
FAAB	Farming as a Business
FDP	Food Distribution Point
FF	Field Facilitator
FFW	Food for Work
FGD	Focus Group Discussion
FPA	Family Planning Assistant
FIFO	First in and first out
FS	Field Supervisor
FtF	Feed the Future
GMP	Growth monitoring and promotion
GoB	Government of Bangladesh
GUP	Gono Unnayan Prochesta
GWG	Gender Working Group

HDDS	Household Dietary Diversity Score
HPP	Homestead production poor
HI	Health Inspector
HKI	Helen Keller International
iDE	International Development Enterprises
IGA	Income-generating activity
IMCI	Integrated Management of Childhood Illness
IP	Implementing Partner
IPM	Integrated Pest Management
IR	Intermediary result
IYCF	Infant and Young Child Feeding
KII	Key Informant Interview
LAR	Loss Adjustment Report
LOA	Life of Award
LSP	Livestock Service Providers
MAFHP	Months of Adequate Household Food Provisioning
M&E	Monitoring and evaluation
MCHN	Maternal and Child Health and Nutrition
MDMR	Ministry of Disaster Management and Relief
MIS	Management Information Systems
MoHFW	Ministry of Health and Family Welfare
MP	Market Promoter
MTR	Mid-Term Review
MUAC	Mid-upper arm circumference
MYAP	Multi-Year Assistance Program
NGO	Non-governmental organization
PLW	Pregnant and lactating women
PM2A	Preventing Malnutrition in Children Under Two Approach
PP	Productive poor
PPS	Probability proportional to size
RIMES	Regional Integrated Multi-hazard Early-warning System
RSR	Recipient Status Report
SAM	Severe acute malnutrition
SAP	South Asian Partnership
SC	Save the Children
SO	Strategic Objective
SOW	Scope of Work
TBA	Traditional birth attendant
TO	Technical Officer
TOT	Training of Trainers
TP	Technical Partner
U2	Under two years of age
U5	Under five years of age
UDMC	Union Disaster Management Committee
UH & FWC	Union Health and Family Welfare Center
UHC	Upazila Health Complex

UP	Union Parishad
USAID	United States Agency for International Development
VDC	Village Development Committee
VDMC	Village Disaster Management Committee
VHC	Village Health Committee
VSLA	Village Savings and Loan Association
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

## **Executive Summary**

Since June 2010, Save the Children has been implementing the USAID-supported Title II PL480 Multi-Year Assistance Program in Bangladesh, “Nobo Jibon.” The program is designed “to reduce food insecurity and vulnerability for 191,000 direct beneficiary households...in ten upazilas of Barisal Division over five years.” It has three strategic objectives (SOs) in the areas of maternal and child health and nutrition (SO1), market-based production and income generation (SO2), and disaster risk reduction (SO3), as well as a cross-cutting gender component. This report documents the findings of the program’s final quantitative performance evaluation (QPE), conducted November 2014 – January 2015 by TANGO International, Inc.

The purpose of the final QPE survey is to measure changes in project impact and outcome indicators over the life of the Nobo Jibon project, in order to assess the extent to which project objectives have been achieved, measure the overall impacts on populations in the project areas, assess the assumed causal pathways linking project activities to outcomes and impacts, and determine how interventions contributed to achieving project goals. Another key function of the final QPE survey is to provide current status for key indicators included in Nobo Jibon’s Indicator Performance Tracking Table (IPTT).

### ***Methods***

The Nobo Jibon QPE survey utilized an ‘adequacy design’, or non-experimental design for simple pre-post comparison of results. The survey was population-based with the sample drawn randomly from the sample frame of all households residing within the action areas of Nobo Jibon. The sample size was determined to provide statistically representative results for indicators at the level of household and children under five years of age. A two-stage sample selection process was used to select households to be interviewed. In the first stage, a total of 62 clusters (villages) were selected in each of the three program districts. In the second stage, 30 households were interviewed in each of the selected villages. The households were selected from a census listing of all households in the selected villages. During analysis the sample was weighted to account for the fact that within the three districts, the proportion of sampled households to district population was different

In addition to the quantitative household survey, a small qualitative study was also conducted. The purpose of this qualitative study was to provide complementary information from project participants about their perceptions of how they benefited from project interventions as well as their assessments of the strengths and weaknesses of project implementation strategies.

### ***Findings***

Comparison of baseline with endline values demonstrates that the Nobo Jibon project surpassed targets for all SO1 and SO2 impact indicators measuring household nutrition and food security

status. Details of project indicators at baseline and endline as well as target values are provided in Annex 2. In particular, the endline values for all anthropometric indicators, HFIAS, CSI, HDDS, MAHFP exceeded the target values for these indicators. The results for the SO3 impact indicators are less favorable; the percent of households with plans to protect lives and assets during a disaster actually decreased by almost 20 percent from baseline to endline. However, the other SO3 impact indicators either remained constant or improved slightly from baseline to endline.

### *SO1*

Impact indicators for SO1, particularly anthropometric indicators improved dramatically from baseline to endline. These improvements were supported by high rates of adoption of recommended practices for child feeding and care, diet and treatments for pregnant and lactating women. It is important to note that these changes in practices were observed for both respondents that participated in SO1 interventions and those that did not report participating directly in these interventions. These results suggest that Nobo Jibon has helped to contribute to a change in child care and nutrition practices, and household hygiene practices that has been also supported by the government and other organizations that have reached households not participating directly with Nobo Jibon, or that Nobo Jibon interventions have indirectly reached individuals in project areas that have not been participants in project activities.

### *SO2*

Impact level indicators for SO2 have also improved substantially from baseline to endline. Outcome indicators of adoption of recommended practices show large percentage increases from baseline to endline, but the overall levels are quite low even at baseline. For example, the percent of households adopting at least three improved production practices increased by over 40 percent from baseline, but the endline value is still less than seven percent of all surveyed households. The percent of households that have adopted improved marketing practices shows the same pattern of large percentage increase from a very low initial value, but a low actual value, less than two percent of all households, at endline. Thus there have been large percentage changes in the number of farmers adopting improved production and marketing practices, but the total number adopting is still very low. These results suggest that there is interest on the part of farmers to adopt these practices, but there is probably continued need for promoting the messages to large numbers of farmers into the future.

### *SO3*

Information about changes in disaster preparedness shows mixed results. The percent of households reporting that they have plans to protect lives and assets in the event of a disaster

actually decreased from baseline to endline, while the percentage of households reporting that they are able to resume livelihoods within two weeks after a disaster increased somewhat. For both these indicators, higher percentages of households that participated in SO3 activities reported positive responses than those that did not participate in SO3.

Results from the endline survey also provide information about the extent to which project interventions were targeted toward more food insecure households. Examination of participation in the project interventions by food security category shows that the most food-insecure households participated more in all types of project interventions (SO1, SO2 and SO3) than households in the higher food security categories. The relative proportions of project participation across the food security categories, however, are not very pronounced for either SO1 or SO2, suggesting that there is no strong targeting toward food-insecure households for these intervention areas. This result is consistent with the overall programming strategies for these two SOs; SO1 support is available to all pregnant women and mothers of young children regardless of their food security status, while interventions under SO3 are intended to benefit all households within a supported community.

The results of participation by food security status under SO2 provide some evidence of targeting, as a higher proportion of households in the lowest food security category participated in SO2 activities than those in higher categories. Again, this is consistent with the project strategy, in which these interventions are generally targeted toward more food-insecure populations. However, the project also directed some types of support to (more food-secure) larger farmers, as a means to enhance marketing opportunities and demand for agricultural labor for all households within communities.

One important thrust of the programming strategy of Nobo Jibon has been to reduce the exclusion of women and other vulnerable groups (especially children) from economic and social opportunities and to enhance the economic empowerment of women. According to information collected from women who had access to money income, their economic empowerment, as measured by decision-making authority over income and economic activities, has increased from baseline to endline, although this change is not associated with participation in project activities. One important finding from the qualitative research is that the project interventions with youth seem to have a strong and long-term impact on empowering girls and women. Important implications from this finding are that i) programming strategies directed toward youth may have strong impacts on enhancing empowerment of women, and ii) indicators of empowerment should be measured on youth.

## 1. Introduction

Save the Children began implementing “Nobo Jibon” in Bangladesh in 2010. The program is a USAID-supported Title II PL480 Multi-Year Assistance Program (MYAP). TANGO International, Inc., a consulting firm based in Tucson, Arizona, USA, has been contracted to conduct the endline Quantitative Performance Evaluation (QPE) of the program. The main objective of the QPE is to review a) the achievements of the project relative to its prescribed targets and b) progress toward the overall goal of positive impact on food security of target communities.

The overarching goal of the Nobo Jibon program was to reduce food insecurity and vulnerability for 191,000 direct beneficiary households, or nearly one million people, in eleven<sup>1</sup> upazilas of Barisal Division over five years. Three strategic objectives (SOs) of the program aligned with USAID’s priorities for Bangladesh and with the Government of Bangladesh’s national health and food security policies. The Strategic Objectives of Nobo Jibon program include:

- **SO1: Maternal Child Health and Nutrition (MCHN)** - Improved health and nutritional status of children under the age of 5 years (U5) and Pregnant and Lactating Women (PLW).
- **SO2: Market-based Production and Income Generation** - Poor and extremely poor households have increased production and income.
- **SO3: Disaster Risk Reduction (DRR)** - Households in targeted communities protect their lives and assets and quickly resume livelihood activities following natural disasters.

To maximize the impact of household food security, Nobo Jibon was designed such that a large proportion of households would participate in all three SOs.

### Endline Survey Objectives

The endline study aims, through quantitative and qualitative surveys of a representative sample of households in the program impact area to review the project achievements relative to its targets and progress towards the overall goal. The purpose of the endline survey is to evaluate the performance of key indicators against the baseline values to measure strategic objectives and intermediate results of Nobo Jibon. Specific objectives include:

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<sup>1</sup> See QPE SOW

- To assess whether progress against agreed indicators/targets have met end of project benchmarks as documented in the indicator tracking table
- To evaluate the theory of change through establishing plausible links between inputs, outputs, outcomes and impacts on target population
- To determine whether critical strategies are missing that were needed to achieve Nobo Jibon's goal;
- To assess the overall impact of the project on target population;
- To identify where interventions, in isolation or in combination, were insufficient to meet program goals and, in cases where goals were not met, assess whether that was due to faulty logical reasoning/hypothesized causal pathways, to implementation shortcomings, or to other factors

Endline information will be used to suggest design adjustments to improve the quality of future programming. Findings will also be used to identify where interventions were insufficient to meet program goals and, where goals were not met, assess whether that was due to faulty logical reasoning/ hypothesized causal pathways, to implementation shortcomings, or to other factors.

## **2. Evaluation Methodology**

### **2.1 Methods for Endline QPE Survey**

#### ***A. Study Design and Objectives***

The purpose of the endline QPE survey was to evaluate the performance of key indicators against baseline values to measure endline results of Nobo Jibon. Specific objectives include:

- Assess whether progress against agreed indicators/targets have met end-of-project benchmarks as documented in the indicator tracking table;
- Evaluate the theory of change by determining the extent to which links between inputs, outputs, outcomes and impacts on the target population are plausible;
- Determine whether critical strategies are missing to achieve Nobo Jibon's goal;
- Assess the overall impact of the project on the target population;
- Identify where interventions, in isolation or in combination, were sufficient to meet program goals and, in cases where goals were not met, assess whether that was due to faulty logical reasoning/hypothesized causal pathways, implementation shortcomings, or other factors; and,
- Suggest design adjustments to improve future programming.

The surveys included structured and open-ended questions about knowledge, attitudes, and practices (KAPs) related to relevant themes for all three strategic objectives. The survey team recorded perceptions of a representative sample of beneficiaries and non-beneficiaries about the implementation of the program and its impacts; these data were used to triangulate other

qualitative information. They were also used to estimate point prevalence for some key agriculture, nutrition, and gender-related indicators. A population-based design was used for these KAP surveys. The sampling plan took into consideration FFP requirements that evaluations are inclusive and credible, and the feasibility of drawing an adequate sample and arranging adequate logistical support.

The first survey gathered information from beneficiary and non-beneficiary farmers about current KAPs regarding crop production, aquaculture, access to agricultural inputs, management of post-harvest losses, marketing of agricultural produce, utility to them of new agricultural enterprises, and changes in their KAPs since program inception. It also captured their perceptions of the impact, benefits, and challenges of the program for their farming activities. The KAP survey estimated point prevalence for a few indicators for SO1, but the evaluation team relied mainly on monitoring data collected periodically by the program’s M&E team, plus perceptions and recall of beneficiary and non-beneficiary farmers randomly selected from across the program area, to arrive at quantitative estimates of current values and changes over time for SO1 indicators. The evaluation team verified project data consistency prior to analysis.

The second survey gathered information from beneficiary and non-beneficiary women of reproductive age including pregnant and lactating women, and to a lesser extent from beneficiary and non-beneficiary girls eligible for membership in Girl Empowerment Clubs. This survey concentrated on gathering data to estimate current status for a number of indicators of outcomes and impacts in the domains of health, nutrition, and girls’ education. In addition, it captured respondents’ perceptions about whether or not their KAPs regarding good health, care and nutrition practices and the contribution of girls’ education to family and community wellbeing have changed since program inception, and their overall impressions of the program’s impact, benefits, and challenges.

### ***B. Sample Design***

The sample size was estimated based on the outcome indicator *stunting among children 6-59 months*. The indicator value and the design effect are obtained from the NJ baseline dataset. The FANTA Sampling Guidelines<sup>2</sup> were used to calculate a sample size capable of detecting a 15 percent reduction in the child stunting indicator over the five-year intervention. The minimum sample size required per stratum (district) was computed as follows:

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

where:

n = required minimum sample size per survey round or comparison group (strata)

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<sup>2</sup> Sampling Guideline, FANTA III, Robert Magnani, 1999

$P_1$  = stunting rate at baseline, 43.9% = **0.439**

$P_2$  = the *expected* level of stunting at endline for the program area such that the quantity ( $P_2 - P_1$ ) is the size of the magnitude of change it is desired to be able to detect, NJ LOA target, 37.3% = **0.373**

$Z_\alpha$  = the Z-score corresponding to the degree of confidence with which it is desired to be able to conclude that an observed change of magnitude ( $P_2 - P_1$ ) would not have occurred by chance ( $\alpha$  - the level of statistical significance for one-tailed test), 95% = **1.645**

$Z_\beta$  = the z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of magnitude ( $P_2 - P_1$ ) if one actually occurred ( $\beta$  - statistical power), 80% = **0.840**.

D = Actual NJ baseline design effect for stunting = **1.308**

$N_f$  = Non-response factor (assuming a 4%<sup>3</sup> non-response rate) = 1.04

Based on these parameter values, the estimated sample size (n) was 930. Thus, the minimum required sample size per district was 930 children under five years of age (U5). Considering that not all households have U5 children, the sample size was adjusted to ensure that a sufficient number of U5 children were measured. Assuming that the proportion of households with U5 children is 50 percent and that the average number of U5s per household is 0.5, the total number of households required to be interviewed to reach 930 U5s is 1,860 per stratum (district), or a total sample of 5,580 households in the three strata.<sup>4</sup> This sample size is adequate to detect a 10% reduction in the stunting rate of children U5 at the program level (LOA target in IPTT). Table 3 shows the details about the sample size.

**Table 1: Sample size by district**

Program districts (strata)	Sample Size	Number of clusters	Number of sample HH/cluster
Barisal	1,860	62	30
Barguna	1,860	62	30
Patuakhali	1,860	62	30
Total	5,580	186	--

### *Selection of clusters*<sup>5</sup>

A two-stage sample selection process was used to select households to be interviewed. In the first stage, 62 clusters were selected in each of the three program districts. In the second stage, 30 households were selected randomly from the sampling frame to be interviewed in each of the selected clusters, to give a total of 1,860 households interviewed in each district. The sampling frame was constructed by conducting a census in all sample clusters. The selection of clusters was selected using probability-proportional-to-size (PPS). This ensures that all households

<sup>3</sup> NJ baseline findings show less than 5% non-response rate.

<sup>4</sup> All U5s in a selected household were measured for anthropometric indicators. The estimate for the proportion of children U5 per household is consistent with the baseline sample and data from the most recent DHS.

<sup>5</sup> Cluster is defined as the NJ program villages.

within the districts have an equal chance of being selected.<sup>6</sup> The listing of clusters was arranged by union and *upazila* in the PPS selection process, to ensure wide geographic coverage of the district in the cluster selection process.

### ***Sampling frame***

A complete sampling frame for all households in the selected clusters is required and was constructed by conducting a census<sup>7</sup>. The census enumerators made hand sketches of the clusters to obtain the patterns of household distribution in rural settlements. Clusters are quite compact geographically, with houses clustered along rural roads and pathways. These characteristics made it possible for survey teams to quickly identify the boundaries of clusters and locate roads, paths, and pockets of settlements within the clusters. Another characteristic of most clusters in the program area is that they have a linear geographic layout, often following the line of roads, rivers, or canals. Each household's location in a given cluster was plotted on the hand-sketched map and assigned a household identification number.<sup>8</sup> SmartPhones were used to collect the information, which facilitates the quick generation of a full list of households in the census.

Nobo Jibon field staff conducted the census survey and household mapping after receiving training from DMA. To ensure quality and neutrality, as a first-level check, M&E Technical Officers for the nine upazilas randomly checked the authenticity of the census list. As a second-level check, SCI-M&E staff double-checked the list and took corrective measures if required. SCI applied appropriate protocols to ensure that the listings and maps were accurate. Lastly, as a third-level check, DMA deployed a team to randomly check the SCI-supplied list and propose necessary corrections when required. SCI coordinated with the DMA team for final quality control.

### ***Selection of households***

Households were selected randomly using the census of beneficiary and non-beneficiary households. The randomly selected households in a cluster were circled on the hand-sketched maps. The data collection teams moved from house to house, each team aiming to complete 30 household surveys per day.

### ***Selection of respondents***

The household head and spouse/adult household members were the main respondents for this survey. Most of the SO1 questions are related to health and hygiene, IYCF and child care practices. Mothers or caregivers of children U5 covered the majority of the questions for SO1. However, pregnant women were also interviewed if available. The household head or male respondent was also involved in the interview process, to provide basic information at the

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<sup>6</sup> In larger clusters, the chance that any single household will be selected is smaller, but this is offset because larger clusters have a greater chance of being selected in the PPS procedure.

<sup>7</sup> In order to comply with recent FFP guidelines, a listing using the census method will be applied, although the random-walk method was used as part of the NJ baseline survey.

<sup>8</sup> GPS coordinates will also be collected for every household in the cluster.

household level. The household member directly involved in SO2 activities was interviewed to collect farming and marketing-related information.

### ***C. Questionnaire***

The quantitative endline survey used the same NJ questionnaire as the baseline, though it was revised to comply with recent FFP/FANTA guidance and NJ program data requirements (Annex-5). The English questionnaire was translated to Bangla and both versions were available on the mobile devices used for quantitative data collection.

### ***D. Field Procedures***

#### ***Timeline***

The ex-post review was conducted in the period October 2012 – January 2013, including preparation, field work, analysis, and reporting. Field research was carried out in Barisal Division in two phases: a household survey was conducted by SC in October 2012 and qualitative fieldwork was conducted by the MTR team from 14 November to 9 December 2012.

#### ***Training, Piloting and Pre-testing***

A six-day training, including one day for field testing and adjustment of tools, was conducted in Patuakhali. The following topics and activities were covered:

- Brief program overview and the objectives of the surveys
- Survey methodology – team composition, sampling, household selection process
- Detailed discussion of the questionnaire form (question-by-question)
- Practice administering the questionnaire using tablets (via role play/mock interviews)
- Role play to show the technique of asking some sensitive questions

The survey tools were tested in the program areas not selected for the sample by each of the interviewers immediately following data collection training. The tools were adjusted after field testing on the same day.

#### ***Fieldwork***

Android tablets (Google Nexus Tablets) were used for quantitative data collection, using ODK (Open Data Kit) software. The use of mobile devices and an electronic questionnaire allow for the integration of data validation rules and consistency checks as part of data collection. It also reduces data entry burden and supports data accuracy, as data is entered at the interviewer level. Every record was stored and uploaded to a cloud server utilizing the built-in internet connectivity of the devices. This allowed the data analysis team to review data consistency every day and ensure the data were ready for analysis as soon as one day after field data collection was completed.

The team leaders were responsible for re-interviewing up to two households per day using tablets. Team leaders also verified that non-response households were unavailable or truly opted out. The database software allows for the cross-referencing of re-interview records with the original records collected by the enumerators. At the end of each day, district coordinators reviewed the full electronic dataset collected. He/she ran data frequencies and cross-tabulations to verify data consistency at the interviewer level by comparing the re-interview data with the corresponding interview data. The district coordinator discussed discrepancies with the concerned enumerator and the respective team leader to determine the reason for the discrepancies. The team leader followed up with appropriate measures to correct any deficiencies discovered. SCI representatives also traveled to the field to observe data collection by occasionally sitting in on interviews, reviewing the questionnaires, and speaking with enumerators and supervisors. One TANGO staff member involved in the entire process spent time in the field during the first week of data collection to monitor whether the data collection teams were collecting information appropriately. He provided immediate feedback and technical support as needed. This TANGO staff member also continued to monitor data consistency throughout the ongoing data collection process.

### ***Data Entry and Processing***

The ODK dataset (CSV format) was converted into an SPSS (Version 20) database for data management and analysis. Validated data were transferred to the main SPSS database daily. TANGO applied a comprehensive data analysis and tabulation plan according to the IPTT and baseline report prior to the data analysis stage.

SPSS statistical software was used to analyze the dataset, and WHO Anthro software was used for anthropometric data analysis. Syntax files were created to compute indicator and sub-indicator values. The analysis includes mostly descriptive statistics with some statistical hypothesis testing. Due to stratification, normalized sampling weights were used to adjust indicator value estimates. Also, complex analysis was performed to estimate standard error and confidence interval through the adjustment of the design effect.

### ***E. Data Analysis***

#### ***Sampling Weights***

The Nobo Jibon endline survey sample was drawn with two-stage, stratified cluster sampling based off a sample frame generated by a separate household listing exercise. Clusters were equally allocated among districts. At the first stage, a sample cluster was selected independently with probability proportional to the cluster's population in each stratum. The strata were the three districts encompassing the program area – Barisal, Barguna, and Patuakhali. The unequal probabilities of selection across strata caused by the equal number of clusters in each stratum were adjusted relative to the population of each stratum. Design weights were calculated based on the separate sampling probabilities for each sampling stage and for each cluster.

The sampling weight was calculated with the design weight corrected for non-response for each of the selected clusters. Response rates were calculated at cluster level as ratios of the number of interviewed households over the number of eligible households. The sampling weight was further adjusted to reflect households that have more than one mother or caregiver of children under 5. In households that included more than one mother/caregiver, only one mother/caregiver was interviewed, therefore a correction was applied to the sampling weight to reflect the differing probability of any given mother/caregiver being interviewed.

The overall household sampling weight was calculated by dividing the household design weight by the household response rate. The individual sampling weight was calculated by dividing the household sampling weight by the mother/caregiver response rate.

### ***Indicator Definitions and Tabulations***

Table 2 presents program indicators for which baseline information was collected.

**Table 2: Indicator definitions and calculation methods**

<b>Indicator</b>	<b>Type of respondents</b>	<b>Main Disaggregation</b>	<b>Method</b>
<b>Impact indicators</b>			
% children between 6 and 59 months stunted (height-for-age)	Children 6-59 months	Boy, Girl, <-2SD, <-3SD	Calculate height-for-age z-score (<-2SD and <-3SD) using new WHO/CDC standard over total number of children 6-59 months
Average HH Food Insecurity Access Scale score	HH Head/ Female HH member	No disaggregation	Calculate using FANTA guideline for “Household Food Insecurity Access Scale (HFIAS) for Measurement of Food Access: Indicator Guide”
Average HH Coping Strategy Index (CSI)	HH Head/ Female HH member	No disaggregation	The coping CSI measures household vulnerability to food insecurity in times of stress. The CSI is calibrated so that the maximum possible value is 100. A zero value indicates high food security (no coping strategies were used), and a value of 100 indicates extreme food insecurity. Calculate using guidelines in “Measuring food insecurity: Can an indicator based on localized coping behaviors be used to compare across contexts?” by Maxwell, Daniel, Richard Caldwell and Mark Langworthy, Food Policy, Volume 33, Issue 6, December 2008.
<b>SO1 MCHN: Improved health and nutritional status of children U5 and pregnant and lactating women (PLW)</b>			
Percentage of underweight (WAZ<-2) children aged 0-59 months	Children 0-59 months	Boy, Girl, <-2SD, <-3SD	Calculate weight-for-age z-score (<-2SD and <-3SD) using new WHO/CDC standard over total number of children 0-59 months
Percentage of wasted (WHZ<-2) children aged 6-59 months	Children 6-59 months	Boy, Girl, <-2SD, <-3SD	Calculate weight-for-Height z-score (<-2SD and <-3SD) using new WHO/CDC standard over total number of children 6-59 months
% of children between 0 and 59 months with diarrhea during last two weeks	Mother/ caregiver of children <5 years	No disaggregation	Diarrhea is defined as three or more loose stools for children 0-59 months in any 24- hour period in the two weeks preceding the survey. The prevalence is calculated by counting no. of cases with 3+ loose stools divided by the total number of children 0-59 months

% children 0-6 months exclusively breastfed	Mother/ caregiver of children <2 years	No disaggregation	Exclusive breastfeeding refers to children up to six months of age who are given nothing but breast milk in the 24 hours preceding the interview divided by the number of children 0-6 months
% of children 6-23 months of age who receive a minimum acceptable diet	Mother/ caregiver of children <2 years	No disaggregation	This is a composite indicator of IYCF practices. The indicator gives an overall measure of the degree to which women have complied with the recommendation that infants age 6-23 months receive appropriate and adequate complementary foods in addition to breastmilk. IYCF feeding practices will be disaggregated by age group to estimate age-specific feeding practices. Calculation: no. of children 6-23 months who received solid, semi-solid or soft foods in addition to breastmilk during the previous day divided by total no. of children 6-23 months. Calculate per WHO 2008 IYCF guideline.
% of caregivers demonstrating proper personal hygiene behaviors	Mother/ caregiver of children <5 years	No disaggregation	<p>“Proper personal hygiene behavior” refers to includes two dimensions: critical times and technique:</p> <p>Critical times for handwashing:  After defecation.  After cleaning babies’ bottoms.  Before food preparation.  Before eating.  Before feeding children.</p> <p>Handwashing technique:  Uses water.  Uses soap or ash.  Washes both hands.  Rubs hands together at least three times.  Dries hands hygienically – by air- drying or using a clean cloth.</p> <p>According to FANTA guidelines, mothers/caregivers practice eight or more of the 10 practices listed are considered as practicing appropriate handwashing.</p>
% of beneficiary caregivers demonstrating food hygiene behaviors	Mother/ caregiver of children <5 years	No disaggregation	“Food hygiene behavior” is achieved if the beneficiary caregivers practice all of the following: 1) Wash hands before food preparation 2) wash hands before feeding child 3) keep food covered.
% of PLW who consume food rich in iron	PLW	No disaggregation	Defined as pregnant and lactating women’s consumption of local iron-rich food within the last 24 hours. The locally identified iron-rich food/food groups are dark green leafy vegetables, fish, poultry, meat/offal/organs, and pulse/peanuts/ beans/ ground-nuts.
% of PLW who consume food rich in Vitamin A	PLW	No disaggregation	Defined as pregnant and lactating women’s consumption of local Vitamin-A- rich food within last 24 hours. The locally identified Vitamin-A- rich food/food groups are milk/dairy products, oil/fats/butter, mango/papaya/orange/jack-fruit, DGLV, carrots/pumpkins, egg.
% of PLW who consume food rich in Calcium	PLW	No disaggregation	Defined as pregnant and lactating women’s consumption of local calcium- rich food within last 24 hours. The locally identified calcium rich food/food groups are milk/dairy products.

% of PLW taking iron or iron folate supplements in the last 7 day	PLW	No disaggregation	Defined as pregnant or lactating women who took an iron folate tablet/ supplement within the last seven days.
% of children 12-23 months who received Vitamin-A supplementation in the past 6 months	Mother/ caregiver of children 12-23 months	No disaggregation	Children 6-59 months of age are supposed to receive a Vitamin-A capsule every six months from a regular EPI session or Vitamin-A-plus campaign as supplementation. Accounting for the initial six months, the program will track Vitamin-A supplementation for children 12-23 months..
% of mothers of children aged 6-23 months who received high-dose Vitamin A supplement within 8 weeks postpartum (6 weeks if not exclusively breastfeeding) in last pregnancy	Mother of children 6-23 months	No disaggregation	Every mother should receive one dose of Vitamin A within six weeks of delivery (postpartum). The mother of the child 6-23 months who received Vitamin-A supplementation within six weeks of delivery in her last pregnancy will be counted for this indicator.
% of mothers attended ANC session at least 4 times during last pregnancy	PLW	No disaggregation	If a pregnant woman attends ANC sessions at least four times during pregnancy she will receive all program messages related to pregnancy and newborn/infant care. The monthly attendance of pregnant women at ANC sessions is important to ensure full ANC services. Calculation: No. of pregnant women who have attended ANC sessions at least four times, over total # PLW (over the defined period).
% of beneficiary children 12-24 months receiving de-worming medication in previous 6 months	Mother/caregiver of children 12-23 months	No disaggregation	Children 12-59 months of age are supposed to receive deworming tablet every 6 months from regular EPI session or Vita-A plus campaign as medication. Children 6-23 months are the direct beneficiaries. So the program will track deworming tablet receiving status of children 12-23 months through regular monitoring. <sup>9</sup>
% of beneficiary women whose husband attends ANC/PNC with her	PLW	No disaggregation	This indicator will measure the extent of male involvement in maternal health care.
<b>SO2 Market-based Production and Income Generation: Poor and extremely poor households have increased production and income</b>			

<sup>9</sup> The original indicator statement is “12-24” but it should be 12-23: in the baseline, data were collected for children 12-23 months, and the program continued to track for that age range.

Average HH dietary diversity score (HDDS)	Female HH member (who cooks food)	No disaggregation	<p>Dietary diversity score (DDS) does not measure dietary quality or calorie intake; it is a proxy for the socioeconomic status of the HH. HHs that consume more diversified food/food groups are considered to have a better economic status in terms of food security. Household dietary diversity is defined as the number of unique foods consumed by household members over a given period. The following 12 food groups are used to calculate the HDDS:</p> <ol style="list-style-type: none"> <li>1. cereals</li> <li>2. roots and tubers</li> <li>3. pulses/legumes</li> <li>4. milk and milk products</li> <li>5. eggs</li> <li>6. meat and offal</li> <li>7. fish and seafood</li> <li>8. oil/fats</li> <li>9. sugar/honey</li> <li>10. fruits</li> <li>11. vegetables</li> <li>12. others (spices, sodas, etc.)</li> </ol> <p>This indicator is calculated using 24-hours recall: the respondent is asked "Yesterday, did you or anyone in your household consume (list of food groups). The sum of the "Yes" (Yes=1, No=0) responses is the score per household; an average score is calculated for the sample.</p>
Average number of months of adequate household food provisioning (MAHFP)	HH Head/ Adult Female HH member	No disaggregation	<p>The average number of months beneficiaries are able to meet their basic food needs. The indicator focuses on the desired outcome of improved food access. Food access depends on the ability of households to obtain food from their own production, stocks, purchases, gathering, or food transfers from relatives, members of the community, the government, or donors. A household's access to food also depends on the resources available to individual household members and the steps they must take to obtain those resources, particularly exchange of other goods and services. The survey question for this indicator is, "Which were the months (in the past 12 months) in which you did not have enough food to meet your family's needs?".</p>
% of HHs reporting increase in production of one or more products	Farming HH member	No disaggregation	<p>"Production" is defined as the food produced from the vegetable garden. "Increase" is defined as at least a 20% increase from the baseline.</p>
Average annual income from sale of agricultural products	HH Head/ farming HH member	No disaggregation	<p>"Income" is defined as net income from agricultural products. This information will be collected semi-annually; and averaged annually.</p>
% of beneficiaries (farmers) using 3 or more sustainable/improved production practices.	HH Head/ farming HH member	No disaggregation	<p>The project will promote the following seven sustainable/ improved production practices: (use of) animal manure; compost; crop rotation; biological/organic pest control; mechanical pest control; integrated pest management; and treadle pump/drip irrigation/mobile pump. Those beneficiaries who practice at least 3 out of the 7 improved practices will be counted for this indicator.</p>

% of targeted PP HHs adopting improved marketing practices	HH Head/ farming HH member	No disaggregation	“Improved marketing practices” are defined based on three criteria: (presence of) business plan (crop season, improved variety and market demand); bulking products (bulking and selling collectively through group); and high-value marketplace. The farmer HHs who practice these three things will be considered as "adopting" improved marketing practices.
% of targeted HHs (PP+HPP) having access to quality inputs and technical service	HH Head/ farming HH member	No disaggregation	Note: new indicator; not in baseline or midterm.
% of targeted HHs (PP+HPP) having access to or participating in output markets	HH Head/ farming HH member	No disaggregation	Note: new indicator; not in baseline or midterm.
% of extremely poor HHs using distributed assets for increased production and income generation.	HH Head	No disaggregation	This measures the percentage of extremely poor HHs that have used the distributed assets for production during last six months.
<b>SO3 DRR: Households in targeted communities protect their lives and assets and quickly resume livelihood activities following natural disasters</b>			
% of HHs with a feasible plan to protect human life and productive assets during disaster	HH Head/Adult HH member	No disaggregation	A HH is considered to have a “feasible plan” when HH members have a plan for evacuating vulnerable HH members, visit the shelter center in normal times, identify a safe shelter center, have a plan for dry food, and have a plan to protect livestock and other valuable assets.
% of HHs able to resume livelihood activities within two weeks following a natural disaster.	HH Head/Adult HH member	No disaggregation	This indicator will be reported if any disaster takes place after the baseline survey. "Resume livelihood activities" is defined as when HH members start their normal livelihood activities – earning income, farming, doing agricultural activities, doing household chores, etc.
% of HHs that received location-specific cyclone warning signal with adequate lead time	HH Head/Adult HH member	No disaggregation	The definition of “adequate lead time” varies depending on signal level. The current government signal system is based on two ports: Mongla and Chittagong. Nobo Jibon is working with ADPC to develop a localized (union-level) early warning system. The project collects signal -specific early warning information will be collected during annual monitoring.

### ***Reporting of Results***

The analysis of presented in this report includes two types of cross-tabulations for all project indicators: by district and by household food security category (terciles of low, medium, and high food security). All indicators are broken down by these categories, either in tables within the report narrative or in Annex 6 (forthcoming). In addition to these breakdowns, some key indicators are also broken down by sex of household head, and by categories of household participation in project interventions.

Throughout this report, baseline values of selected program indicators shown in Table 1 are computed as the mean values of the overall sample. Mean values and 95% confidence intervals of all IPTT indicator variables at the total sample level are provided in Annex 1.

Data presented throughout the report is coded to indicate significant differences. The significance, which statistical tests produced, is referred to as the p-value (probability value). The p-value can be interpreted as the probability of a difference occurring by chance alone. If all other biases are eliminated or accounted for, then one can assume that when this p-value is small, the differences are due to a factor other than chance.

*	$p < 0.1$
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*\*Mean value is different between groups at the .10 significance level.*

All monetary indicators are converted from nominal values to inflation-adjusted values based on 2010 price index level, in order to permit direct comparability between baseline and endline values. The adjustment is based on the Bangladesh Consumer Price Index (CPI) reported by the World Bank.

## **2.2 Methods for Qualitative Study**

### ***A. Study Design and Objectives***

In order to obtain other qualitative information about beneficiary perceptions of program activities, change in practices, stakeholder coordination and linkages to services, three qualitative evaluators spent four days in the districts to conduct beneficiary focus groups. The team used the qualitative information to inform the interpretation of program impact and outcome data obtained from the quantitative data collection process.

### ***B. Study Sample***

The qualitative study sample was drawn from the villages selected for the quantitative portion of the evaluation. All three districts encompassing the program area, Barguna (1 village), Barisal (1 village), and Patukhali (2 villages), were included in the sample. Villages were purposively selected to include those that are considered at high risk to disaster (e.g. that received SO3 training), as well as, those that included community groups and committees targeted by Nobo Jibon SO1 and SO2 activities, as outlined below.

The qualitative team conducted 24 focus groups, as follows:

- MCHN – PLW (8-12) (two groups)
- MCHN – Adolescents (two groups)
- MCHN – VHC (two groups)
- MCHN – Fathers (two groups)
- Livelihoods – Extreme Poor (two groups)
- Livelihoods – Productive Poor (three groups)

- Livelihoods – Women (two groups)
- Disaster Management – Men (two groups)
- Disaster Management – VDMC (two groups)
- Disaster Management – Women (two groups)
- Disaster Management – Youth Volunteers (two groups)
- Disaster Management – Union DMC (one group)

Some focus groups were separated by sex and some were mixed. In total, the groups included 153 women, 68 men, 18 girls and 15 boys. Annex 1 contains focus group details.

### ***C. Instruments***

The qualitative team used topical outlines to guide the focus group discussions. For each strategic objective, the teams explored the following general topics:

- Participation (frequency of participation, m/f ratio, adolescents: how selected)
- Topics learned and relative importance
- Changes in practices (noting gender differences)
- Reasons for not changing practices (noting gender differences)
- Suggestions/recommendations (e.g., ways to enhance inclusiveness)
- Sustainability

Village committees were asked about the following topics:

- Structure of committee
- Responsibilities and activities
- Interactions with community
- Types of support received by NJ
- Participation of women in the committees
- Sustainability of the committees

### ***D. Data Collection***

The qualitative component of the survey was conducted by one international consultant and two local consultants with relevant specializations in food and livelihood security, health and nutrition, disaster risk reduction and adaptation, program management, commodity management, and gender and governance. The international consultant is from the United States and worked in tandem with one of the two local consultants when translation was required.

The team collected qualitative data from upazilas in each district as follows:

- Barguna: Amtali upazila (one union)

- Patuakhali: Dashmina and Galachipa upazilas (four unions)
- Barisal: Barisal Sadar upazila (one union)

In total, the qualitative team visited six villages in the areas listed above. They applied the instruments described in the previous section.

### *F. Estimation of Household Food Security Categories*

The evaluation team used factor analysis to construct a proxy indicator of household food security based on a composite of a number of measured household characteristics of household economic status and food security indicators. Factor analysis enables identification of unique factors that summarize several dimensions of the food security status of households. Results (provided in Annex 4) from the factor analysis were used to identify and compare three distinct levels of food security status among sample households. The computed values of the principal component (component 1) were first ranked and then divided into terciles (three groups with an equal number of cases). These categories represent three levels of food security status among sample households.

The elements included in the factor analysis were:

- Household size
- Per capita expenditures
- Per capita asset index
- Share of household expenditures spent on food
- Household Dietary Diversity Score (HDDS)
- Months of adequate household food provisions (MAHFP)
- Household Food Insecurity Access Scale (HFIAS) score
- Coping Strategies Index (CSI)

Table 3 presents data on these indicators of vulnerability, disaggregated according to food security status. By identifying the index scores of households in different food security categories, the Nobo Jibon endline survey provides a useful tool for measuring the impact of Nobo Jibon on highly food insecure and less food insecure households in the program area.

**Table 3: Food security variables at endline, by food security**

	Food Security Category			Total Sample
	Lowest	Middle	Highest	
Variables included in food security categorization	Mean value			
Household size	4.5	4.7	5.3	4.8

Per capita expenditures (TK/month)	1,425	1,460	2,308	1,728	
Per capita asset index	43.5	63.3	100.7	69	
Food share (%) of total expenditures	59.5	57.3	45.8	54.2	
Household Dietary Diversity Score (HDDS)	4.7	5.4	7	5.7	
Months of Adequate Household Food Provisions (MAHFP)	8.4	10.9	11.9	10.4	
Household Food Insecurity Access Scale (HFIAS)	47.2	10.2	0.8	19.4	
Coping Strategy Index	20.9	3.7	0.4	69.1	
	<i>n</i>	1,778	1,779	1,779	5,336

Across the entire sample, household size, per capita expenditures, per capita asset index, dietary diversity, and months of adequate household food provisions increase as food security status increased. Per capita expenditures ranged from a high of Tk 3,323 among the most food secure households to a low of 2,025 among the least food secure households. Households in the low food security category also spend the most on food as a share of total expenditures (60 percent) compared to households in the medium (57 percent) and high (46 percent) categories. Notable differences between categories were seen in HFIAS and CSI: the lowest food security households scored 47.2 on the HFIAS and 43.6 on the CSI, compared to 0.8 on the HFIAS and 100.4 on the CSI for the most food secure households.

### 2.3 Study Limitations and Issues Encountered

One potential limitation of the evaluation was the difference in evaluation design with respect to sampling between baseline and endline. At baseline, detailed household listings were unavailable; therefore, second-stage selection of households was conducted using the random walk method. At endline, a household listing exercise was conducted prior to the commencement of field work and households for the second-stage of sampling were chosen from among the household lists.

When possible, sample selection from household listings is preferable. There are drawbacks to using a random walk for household sample selection, as opposed to household listings, the biggest being the potential for selection bias.

Table 4 above includes general household characteristics that are expected to remain relatively constant over time, for both the baseline and endline samples. These characteristics include asset ownership, prevalence of farming as an income earning activity, and prevalence of other-income earning activities, such as wage labor, and rickshaw driving that might be indicative of lack of access to farming activities. Across the sample, several characteristics change significantly. More than two-thirds of households (68 percent) owned cultivable land, compared to 60 percent at baseline. Average farmland area increased 67 percent from 52 decimals at baseline to 87

decimals. In addition, the proportion of households with access to water bodies grew 26 percent to 81 percent of all households.

**Table 4: Selected household characteristics, baseline and endline survey rounds**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations	
				Baseline	Endline
% HH that own cultivable land	59.2	67.8	14.5 *	5,024	5,345
Average farmland area (decimals)	52.0	86.9	67.1 *	5,026	5,346
% HH with access to water bodies	64.1	80.5	25.6 *	5,022	5,345
Average # cows	0.9	1.1	22.2 *	5,026	5,346
Average # goats	0.3	0.3	0.0	5,026	5,346
% HH primary occupation: day labor	20.7	18.8	-9.2 *	5,025	5,337
% HH primary occupation: rickshaw puller/boatman	5.9	5.2	-11.9	5,025	5,337

If the random walk sample selection technique produced a biased sample, one might expect to see several of the household characteristics to be different for the sample at baseline compared to endline. This was, in fact, true. The percentage of households with access to farmland and the average size of agricultural land owned are considerably higher at endline relative to baseline. This is also true with respect to ownership of large livestock (cows/buffaloes), while ownership of smaller livestock (goats/sheep) was relatively unchanged. The percentage of households whose primary income was derived from wage labor or rickshaw driving declined slightly from baseline to endline. This is contrary to what one would expect to see if the baseline sample was biased towards wealthier households. However, it could just suggest that the baseline sample was biased towards poorer households. Another explanation for the differences observed in these household characteristics is that there was a generalized, upward trend in these variables between the two survey rounds, either the result of project activities or external factors. Unfortunately, without additional information to determine if the observed changes are due to selection bias or underlying structural changes of household conditions.

Another limitation of the QPE conducted for the Nobo Jibon project is that the study includes only a very small and limited qualitative component. This is because FFP made the decision to undertake a comprehensive qualitative evaluation of all three Title II projects in Bangladesh, and asked the awardees to conduct quantitative surveys only, to measure changes in project indicators. In the Scope of Work, Save the Children requested a small qualitative component, to serve as a means of triangulation and verification of the quantitative results. Because of the limited scope of the qualitative component, only a small number of interviews could be conducted with focus groups of project participants and with key informants. The limited scope of the qualitative component did not permit wider ranging interviews with other project stakeholders to get information about project implementation. As a result, the qualitative

component of this QPE is very narrowly directed toward collecting information from a small number of project beneficiaries about their perceptions of project interventions.

### **3. Endline Survey Results**

#### **Household Food Security and Vulnerability Status**

The overarching goal of Nobo Jibon is to reduce food insecurity and vulnerability in nine upazilas of the Barisal Division over five years. Critical to realizing this goal are improvements and increases in three areas: stunting in children 6-59 months, household food access, and household resilience, as measured by the CSI. Both baseline and endline surveys used anthropometric measures to assess the nutritional status of U5 children from sample households. This section reports the changes in those measures over the life of the program.

Stunting rates improved in all districts over the program period (Table 5). At baseline, all districts had high rates of moderate stunting in children age 6-59: 38 percent in Barguna, 43 percent in Patuakhali, and as high as 50 percent in Barisal. Over the program period, moderate stunting decreased from 44 percent to 35 percent across all sample households – a 20 percent overall reduction. The improvement was slightly more marked in Barguna and Patuakhali, which both saw moderate stunting decrease by 25 percent and 22 percent, respectively. Severe stunting rates, which ranged from a low of 10 percent in Barguna to a high of 18 percent in Barisal at baseline, also saw substantial improvement at endline, with a 22 percent reduction in the overall sample, and greater improvements in Barisal (29 percent reduction) and Barguna (28 percent reduction). Parallel to the baseline ranking, at endline Barisal remains the district with the highest rates of stunting (41 percent moderate, 13 percent severe), and Barguna the lowest, with 28 percent moderately stunted and 7 percent severely stunted.

The Household Food Insecurity Access Scale (HFIAS) is reported on a scale of 0 to 100; higher scores indicate higher food insecurity, so a reduction in score is the desired outcome (see Annex 3 for details on the computation). The survey found that the HFIAS value for the overall sample decreased by more than 30 percent, from 28.7 to 19.4. However, the magnitude of the endline-baseline difference varied substantially across regions, from a low 8 percent reduction in Patuakhali to markedly higher reductions in Barguna and Barisal (45 percent and 38 percent, respectively). The Coping Strategies Index CSI scores were also scaled from 0-100, with a lower score indicating higher food security, hence lower scores are desirable. The pattern seen for CSI values mirrored that of the HFIAS: greater reductions in Barguna and Barisal (50 percent and 48 percent, respectively), and a small and statistically insignificant reduction in Patuakhali.

**Table 5: Program goal indicators, by district**

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Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>% of moderately stunted (HAZ&lt;-2SD) children age 6-59 months</b>						
All households	43.9	35.3	-19.6	*	2,296	2,060
District						
Barisal	50.0	41.4	-17.2	*	802	854
Barguna	37.7	28.3	-24.9	*	614	520
Patuakhali	42.8	33.2	-22.4	*	879	685
<b>% of severely stunted (HAZ&lt;-3SD) children age 6-59 months</b>						
All households	12.9	10.0	-22.2	*	2,296	2,060
District						
Barisal	17.7	12.6	-28.6	*	802	854
Barguna	9.8	7.1	-27.6	*	614	520
Patuakhali	10.7	9.1	-15.1	*	879	685
<b>Household Food Insecurity Access Scale (HFIAS), mean value (0-100)</b>						
All households	28.7	19.4	-32.4	*	5,009	5,346
District						
Barisal	26.2	16.4	-37.3	*	1,636	2,031
Barguna	36.6	20.1	-44.9	*	1,563	1,614
Patuakhali	24.2	22.3	-7.9	*	1,810	1,701
<b>Coping Strategy Index (CSI), mean value (0-100)</b>						
All households	13.5	8.4	-37.8	*	4,969	5,346
District						
Barisal	12.0	6.3	-47.5	*	1,623	2,031
Barguna	17.8	8.9	-50.1	*	1,561	1,614
Patuakhali	10.9	10.3	-5.6		1,785	1,701

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Another way to analyze achievement of program goals is by food security category (Table 6). Reductions in moderate and severe stunting in children age 6-59 months were higher for medium and high food security categories. Medium food security households experienced the largest decrease in severe stunting from 14 percent to 10 percent, a 33 percent decrease. The only statistically significant decrease for stunting in the low food security category was for moderate stunting, a 16 percent reduction, compared to more than 20 percent for the other two categories.

This finding is logically consistent with the differences across food security categories for the scaled HFIAS and CSI scores. Both medium and high food security categories saw large improvements in HFIAS (60 percent and 62 percent decreases, respectively); the low food security category also saw an improvement but not as marked (a 19 percent change from baseline to endline). The changes in CSI across food security categories paint a similar picture, as

households at all levels had significantly lower CSI scores, meaning they were turning to fewer coping strategies at endline than at baseline. The magnitude of change was substantial: from a 28 percent decrease in households with the lowest food security, to a 66 percent decrease for the medium group. Notably, the lowest food security households have a substantially higher HFIAS score and CSI score than the other group. At endline, HFIAS score for the least food secure households is 19, compared to one for the most food secure. Likewise, households in the low category scored 21 on the CSI, while the high food security group scored 0.4.

**Table 6: Program goal indicators, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>% of moderately stunted (HAZ&lt;-2SD) children age 6-59 months</b>						
All households	43.6	35.4	-18.9	*	2,213	2,055
Food security category						
Low	47.8	40.3	-15.6	*	705	722
Medium	45.8	35.8	-21.9	*	782	651
High	37.3	29.5	-20.9	*	726	681
<b>% of severely stunted (HAZ&lt;-3SD) children age 6-59 months</b>						
All households	12.6	10.0	-20.6	*	2,213	2,055
Food security category						
Low	14.3	12.7	-11.5		705	722
Medium	14.4	9.6	-32.9	*	782	651
High	9.0	7.4	-17.8	*	726	681
<b>Household Food Insecurity Access Scale (HFIAS), mean value (0-100)</b>						
All households	28.7	19.4	-32.4	*	4,944	5,336
Food security category						
Low	58.6	47.2	-19.3	*	1,648	1,778
Medium	25.4	10.2	-59.9	*	1,648	1,779
High	2.2	0.8	-62.0	*	1,647	1,779
<b>Coping Strategy Index (CSI), mean value (0-100)</b>						
All households	13.4	8.4	-37.6	*	5,026	5,339
Food security category						
Low	28.7	20.9	-27.2	*	1,648	1,779
Medium	10.8	3.7	-65.5	*	1,648	1,779
High	0.8	0.4	-48.7	*	1,647	1,777

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Analyzing the changes in HFIAS and CSI by gender (Table 7), we see that male-headed households have larger improvements than female-headed ones: the mean HFIAS decreased by 33 percent in male-headed households versus 23 percent in female-headed households; similarly,

the mean CSI decreased by 39 percent (male-headed households) and 31 percent (female-headed households).

**Table 7: Program goal indicators, by sex of head of household**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Household Food Insecurity Access Scale (HFIAS), mean value (0-100)</b>						
All households	28.7	19.4	-32.4	*	5,009	5,339
Sex head of household						
Male	28.3	18.9	-33.2	*	4,705	5,001
Female	34.7	26.8	-22.9	*	304	339
<b>Coping Strategy Index (CSI), mean value (0-100)</b>						
All households	13.5	8.4	-37.8	*	4,969	5,339
Sex head of household						
Male	13.3	8.2	-38.4	*	4,666	5,001
Female	15.9	10.9	-31.4	*	303	339

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

## Household Income and Expenditures

The next three tables report the survey data on household income and expenditures, disaggregated by district (Table 8), food security category (Table 9), and sex of household head (Table 10).

Overall and adjusted for inflation,<sup>10</sup> the average monthly income per capita of sampled households increased by about 350 Tk (28 percent) over the life of the program (Table 8). The greatest relative gain across districts was in Barisal (1236 Tk to 2418 Tk, a 36 percent increase). Barguna and Patuakhali, meanwhile, improved per capita monthly income by 22 percent and 25 percent, respectively. Monthly expenditures per capita increased by about 200 Tk per month in the overall sample, however the increase was substantially greater in Barguna (27 percent) compared to Patuakhali (nine percent) and Barisal (seven percent). Barguna also exhibited the largest expenditures increase in absolute terms – about three times that of the other two districts.

The data suggest that households across the sample directed their increased income in a manner consistent with program goals: at endline, food as a percentage of overall spending was lower for

<sup>10</sup> A deflation factor was applied to the income and expense data based on inflation rates for 2009-2013 posted in the World Bank DataBank. The ideal span would be 2010-2014, however the rates for 2014 have not been posted as of this writing.

all districts by 13 percent on average. At baseline, at least 61 percent of expenditures in any district was for food; at endline this fell to as low as 50 percent, in Barguna. At the same time, Barguna had the greatest improvement in the per capita asset index: 43 percent versus 31 percent in Patuakhali and 24 percent in Barisal. These findings suggest that even though the increase in income in Barguna was the lowest of the three districts in terms of both absolute change and percentage change, compared to the other districts, in Barguna the increase had a stronger impact on households' ability to direct a larger proportion of expenditures to investments in household assets.

**Table 8: Household income and expenditures (in Tk), by district**

Indicator	Baseline	Endline	Endline (deflated)	Percent difference (Endline - Baseline)	Number of observations		
					Baseline	Endline	
<b>Monthly Income Per Capita</b>							
All households	1274	2344	1628	27.8	*	5,026	5,338
District							
Barisal	1236	2418	1679	35.9	*	1,649	2,019
Barguna	1247	2195	1524	22.3	*	1,565	1,610
Patuakhali	1332	2396	1664	24.9	*	1,812	1,709
<b>Monthly Expenditures Per Capita</b>							
All households	1520	2486	1727	13.6	*	5,026	5,338
District							
Barisal	1520	2336	1622	6.7	*	1,649	2,019
Barguna	1490	2729	1895	27.2	*	1,565	1,610
Patuakhali	1546	2436	1692	9.4	*	1,812	1,709
<b>Food Share (%) of Total Expenditures</b>							
All households	62.3	54.2		-13.0	*	5,014	5,342
District							
Barisal	63.6	58.6		-7.9	*	1,647	2,019
Barguna	62.4	50.2		-19.5	*	1,562	1,611
Patuakhali	60.9	52.6		-13.5	*	1,805	1,712
<b>Asset Index</b>							
All households	249.9	315.1		26.1	*	5,026	5,345
District							
Barisal	307.3	368.0		19.7	*	1,649	2,019
Barguna	218.9	289.6		32.3	*	1,565	1,614
Patuakhali	224.4	276.9		23.4	*	1,812	1,712
<b>Asset Index Per Capita</b>							
All households	51.8	69.0		33.2	*	5,026	5,338
District							
Barisal	60.2	74.9		24.4	*	1,649	2,019

Barguna	48.7	69.8	43.4	*	1,565	1,610
Patuakhali	46.8	61.3	30.9	*	1,812	1,709

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Similar gains were observed in all areas when disaggregated by food security group (Table 9). Increases in monthly income per capita ranged from 24 percent among the most food secure to 34 percent among medium food secure households. Monthly expenditures per capita were more varied: the least food secure households increased spending 27 percent, compared to increases of 10 percent among the most food secure and seven percent among medium food secure households. Notably, the households in the medium food security group were the only ones with monthly expenditures per capita that were lower than monthly income per capita.<sup>11</sup> The least food secure households saw the largest decrease in food share as a percentage of total expenditures (16 percent) but contributed the largest share of expenditures to food (60 percent) compared to the most food secure households, which spent the least (46 percent). Likewise, the households in the low food security category saw the largest gains in asset index per capita (51 percent increase). This group, however, remained considerably lower in index value per capita than the most food secure households (43.5 index value per capita compared to 100.7 index value per capita, respectively). See Annex 3 for a description of the asset index computation.

**Table 9: Household income and expenditures (in Tk), by food security category**

Indicator	Baseline	Endline	Endline (deflated)	Percent difference (Endline - Baseline)	Number of observations		
					Baseline	Endline	
<b>Monthly Income Per Capita</b>							
All households	1277	2345	1629	27.5	*	4,944	5,335
Food security category							
Low	897	1658	1152	28.4	*	1,648	1,787
Medium	1111	2137	1484	33.5	*	1,648	1,788
High	1824	3254	2260	23.9	*	1,647	1,760
<b>Monthly Expenditures Per Capita</b>							
All households	1528	2488	1728	13.1	*	4,944	5,335
Food security category							
Low	1122	2052	1425	27.0	*	1,648	1,787
Medium	1368	2102	1460	6.7	*	1,648	1,788
High	2093	3323	2308	10.2	*	1,647	1,760
<b>Food Share (%) of Total Expenditures</b>							
All households	62.2	54.2		-12.9	*	4,944	5,335
Food security category							
Low	70.5	59.4		-15.7	*	1,648	1,787

<sup>11</sup> Monthly expenditures per capita is used a proxy for income.

Medium	63.0	57.3	-9.1	*	1,648	1,788
High	53.2	45.7	-13.9	*	1,647	1,760
<b>Asset Index</b>						
All households	250.7	315.3	25.7	*	4,944	5,335
Food security category						
Low	130.0	191.8	47.6	*	1,648	1,787
Medium	209.3	276.2	32.0	*	1,648	1,788
High	413.0	480.3	16.3	*	1,647	1,760
<b>Asset Index Per Capita</b>						
All households	52.0	69.0	32.8	*	4,944	5,335
Food security category						
Low	28.9	43.5	50.7	*	1,648	1,787
Medium	44.4	63.3	42.7	*	1,648	1,788
High	82.7	100.7	21.7	*	1,647	1,760

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Considering the indicators by sex of household (Table 10), male-headed households generally saw more significant gains than female-headed-households. Monthly income per capita increased in male-headed households 29 percent, compared to 15 percent in female-headed households, though the latter reported higher income per capita (1746 Tk compared to 1620 Tk for male-headed). Female-headed households saw monthly expenditures per capita increase 30 percent, while male-headed households' expenditures grew 13 percent. Food share as percentage of total expenditures decreased 13 percent across all households – a desirable outcome –and the figure holds when analyzed by sex of household head (13 percent for both types). While the data show a 57 percent increase in asset index per capita in female-headed households (versus 32 percent for male-headed ones), this figure was not statistically significant.

**Table 10: Household income and expenditures (in Tk), by sex of head of household**

Indicator	Baseline	Endline	Endline (deflated)	Percent difference (Endline - Baseline)	Number of observations		
					Baseline	Endline	
<b>Monthly Income Per Capita</b>							
All households	1274	2344	1628	27.8	*	5,026	5,338
Sex head of household							
Male	1258	2332	1620	28.7	*	4,722	4,997
Female	1515	2514	1746	15.3	*	304	342
<b>Monthly Expenditures Per Capita</b>							
All households	1520	2486	1727	13.6	*	5,026	5,338
Sex head of household							
Male	1527	2475	1719	12.6	*	4,722	4,997
Female	1413	2645	1837	30.0	*	304	342
<b>Food Share (%) of Total Expenditures</b>							

All households	62.3	54.2	-13.0	*	5,014	5,335
Sex head of household						
Male	61.9	53.9	-13.0	*	4,711	4,994
Female	67.3	58.6	-13.0	*	303	341
<b>Asset Index</b>						
All households	249.9	315.2	26.1	*	5,026	5,338
Sex head of household						
Male	254.1	321.3	26.4	*	4,722	4,997
Female	183.9	226.2	23.0		304	342
<b>Asset Index Per Capita</b>						
All households	51.8	69.0	33.2	*	5,026	5,338
Sex head of household						
Male	51.9	68.3	31.7	*	4,722	4,997
Female	50.2	79.0	57.3		304	342

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

## SO1 – Maternal and Child Health and Nutrition (MCHN)

The MCHN component aims to contribute to improvements in antenatal care (ANC), infant feeding practices, and child healthcare related to immunization and treatment of diarrhea. This section reports the endline findings and compares them with the endline data, and analyzes the extent of changes in knowledge and practices in these health-seeking behaviors.

### *Anthropometric Indicators*

The anthropometric data provide an indication of the combined impacts of SO1 and SO2 nutritional interventions and program activities. The baseline and endline surveys measured children under two years (U2) and under five years (U5) to assess the three standard indices of physical growth: weight for age (WAZ, or underweight), weight for height (WHZ, or wasting), and height for age (HAZ, or stunting). Stunting is a program goal-level indicator and was discussed at the beginning of this section (see Household Food Security and Vulnerability Status). Underweight and wasting are described below:

**Weight for age (underweight):** This index identifies whether a child is underweight for her/his age. It reflects both chronic and acute malnutrition, and is a useful indicator in assessing changes in the magnitude of malnutrition over time. However, it is not useful in distinguishing between stunting and wasting. (A child can be underweight for his/her age because he/she is stunted or wasted, or both stunted and wasted.)

**Weight for height (wasting):** This index identifies whether a child has low weight for her/his height, and thereby helps identify children suffering from current or acute malnutrition or

wasting. Weight for height is appropriate for examining short-term effects such as those from seasonal changes in food supply or short-term nutritional stresses brought about by illness.

Table 11 reports, by food security category, the percentage of children in the U2 and U5 age groups in the categories of *moderate* underweight (below -2 standard deviations from the median weight for age per 2006 World Health Organization growth standards) and *moderate* wasting (below -2 standard deviations from the median weight for height). In parallel fashion, Table 12 reports survey data for the U2 and U5 age groups by food security category, for the categories of *severe* underweight (below -3 standard deviations from the median weight for age) and *severe* wasting (below -3 standard deviations from the median weight for height).

The percentage of moderate underweight U2s and U5s in the overall sample decreased by 39 percent and 31 percent, respectively (Table 11), over program life, with small but significant variation across districts in the magnitude of the change. The range in percent moderate underweight varied somewhat across food security categories, from 15 percent in the high food security category to 24 percent for low in U2, and from 22 percent in the high food security category to 32 percent for low in U5s.

Reductions in overall moderate wasting prevalence were far greater for U5s (31-32 percent reduction) than for U2s (9-10 percent). Comparing moderate wasting prevalence in terms of food security categories, significant changes were detected only in U5s (Table 11). The medium food security category saw the greatest improvement (45 percent reduction in U5 moderate wasting), compared to the low and high categories (25 percent and 23 percent, respectively).

**Table 11: Moderate child malnutrition indicators, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Children under 2 years (0-23 months)</b>						
<b>% of children 0-23 underweight (WAZ &lt;-2SD)</b>						
All households	32.2	19.5	-39.4	*	770	807
Food security category						
Low	38.1	24.3	-36.1	*	258	251
Medium	31.8	20.5	-35.5	*	253	262
High	26.7	14.5	-45.8	*	260	294
<b>% of children 6-23 wasted (WHZ&lt;-2SD)</b>						
All households	15.4	13.8	-10.2		760	599
Food security category						
Low	18.2	15.4	-15.3		256	192
Medium	16.5	14.2	-13.6		248	193
High	11.4	11.9	4.2		257	214
<b>Children under 5 years (0-59 months)</b>						
<b>% of children 0-59 underweight (WAZ&lt;-2SD)</b>						

All households	39.3	27.3	-30.5	*	2,223	2,055
Food security category						
Low	42.4	32.0	-24.6	*	707	722
Medium	41.3	27.8	-32.6	*	790	652
High	34.2	21.9	-36.0	*	727	680
<b>% of children 6-59 wasted (WHZ&lt;-2SD)</b>						
All households	16.2	11.0	-32.2	*	2,213	1,846
Food security category						
Low	16.8	12.5	-25.4	*	705	663
Medium	18.3	10.1	-45.2	*	784	583
High	13.3	10.2	-23.3	*	724	600

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Moving to the “severe” level of these two malnutrition indicators (Table 12), the only significant changes are in underweight prevalence. No significant changes were found in severe wasting prevalence in the food-security-category-wise comparison, with one exception: a statistically significant 67 percent reduction (improvement) in severe wasting among U5s in the medium food security category – however the change was very small, from three percent to one percent. Severe underweight prevalence, on the other hand, saw a significant reduction by 40-41 percent in the overall sample of U2s and 47-48 percent in the U5s.

**Table 12: Severe child malnutrition indicators, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Children under 2 years (0-23 months)</b>						
<b>% of children 0-23 underweight (WAZ &lt;-3SD)</b>						
All households	7.6	4.5	-39.9	*	770	807
Food security category						
Low	8.9	8.1	-8.8		258	251
Medium	8.5	4.3	-49.3	*	253	262
High	5.3	1.7	-68.4	*	260	294
<b>% of children 6-23 wasted (WHZ&lt;-3SD)</b>						
All households	3.1	3.0	-3.6		760	599
Food security category						
Low	3.2	3.1	-2.8		256	192
Medium	4.5	2.7	-41.4		248	193
High	1.6	3.2	96.3		257	214
<b>Children under 5 years (0-59 months)</b>						
<b>% of children 0-59 underweight (WAZ&lt;-3SD)</b>						
All households	9.8	5.2	-47.4	*	2,223	2,055
Food security category						

Low	10.8	7.3	-32.5	*	707	722
Medium	11.7	4.3	-63.1	*	790	652
High	6.8	3.7	-45.5	*	727	680
<b>% of children 6-59 wasted (WHZ&lt;-3SD)</b>						
All households	2.1	1.4	-32.7		2,213	1,846
Food security category						
Low	2.1	1.5	-30.7		705	663
Medium	2.7	0.9	-67.4	*	784	583
High	1.4	1.9	30.8		724	600

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

### *Childhood Illness, Child Feeding Practices and Antenatal Care*

This section describes results of several indicators related to child and maternal health. A brief discussion on child illness measures is presented first, followed by several measures of child feeding and health of PLW.

Across all sample households, by district and by food security category, childhood illnesses (diarrhea, fever, cough/cold) tended to decrease, though significance varied. Diarrhea incidence decreased the most in U5s, particularly in low and medium food security households. Patuakhali and medium food security households also experienced significant declines. Likewise, households in the low and medium food security categories saw decreases in children with fever in the two weeks preceding the survey. Cough/cold among U5 children is more mixed, with a significant increase among the most food secure households and decrease among medium food secure households.

The percentage of children who sought treatment improved significantly for fever and cough/cold, but not for diarrhea. Between two-thirds and three-quarters of households sought treatment for any given disease. Regarding source of treatment, pharmacy was most common for all illnesses, a change from baseline when households gave a slight preference to village doctors for treating fevers and cough/cold. In addition, MBBS doctors jumped to the third most common source of treatment for all illnesses, though less than one-sixth of households reported using this for treatment. No other source of treatment was reported by more than seven percent of all households. Full data on childhood illness and sources of treatment can be seen in Annex 6.

Table 13 displays information on two breastfeeding practices disaggregated by food security category: exclusive breastfeeding of children under six months and infants and toddlers who were put to the breast within one hour of birth. Of note overall are increases in children who were put to breast within one hour of birth (42 percent increase).

Medium food security households showed increases in breastfeeding practices from baseline to endline, with a 38 percent increase in exclusive breastfeeding under six months and a 77 percent increase in putting children to the breast within one hour. At endline, households in the medium category were also the most likely to use each of the practices. Meanwhile, the least food secure households were least likely to breastfeed children exclusively under six months, but they exhibited a 67 percent increase in putting children to the breast within one hour.

**Table 13: Breastfeeding practices, by food security category<sup>12</sup>**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations	
				Baseline	Endline
<b>Children under 6 month exclusively breastfed</b>					
All households	38.6	44.9	16.5	276	320
Food security category					
Low	40.4	39.1	-3.2	75	104
Medium	37.7	52.0	37.6 *	104	94
High	38.0	44.5	17.1	97	122
<b>Infants and toddlers who were put to the breast within one hour of birth</b>					
All households	29.0	41.1	41.9 *	1,126	967
Food security category					
Low	25.1	41.8	66.7 *	359	300
Medium	27.5	48.5	76.4 *	382	294
High	34.1	34.8	2.0	385	373

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Data on three measures of child feeding and care giving practices are shown in Table 14. First, infants and toddlers six-to-23-months-old who receive a minimally acceptable diet (apart from breast milk); second, infants and toddlers older than six months who received iron rich/ iron fortified foods during the previous day; and third, households consuming adequately iodized salt. Significant increases were seen among all households overall in every category.

Households at every food security level showed large increases in the percentage of children who received a minimally acceptable diet. The percentage of least food secure household grew from two percent to 16 percent, a 920 percent increase, while the percentage of medium and high food security households tripled or more to 17 percent and 32 percent, respectively. Two-thirds of all households had infants older than six months who received iron rich/iron fortified foods in the previous day. Households in both the low and medium categories saw increases of about one-third (31 percent and 39 percent, respectively). Similarly, all three food security categories saw

<sup>12</sup> At the time of design of the project, the indicator for EBF was defined by FFP to be for children 0-6 months. This definition was subsequently changed to be for children under 6 months (0-5 months).

significant increases in the percentage of households consuming adequately iodized salt. The most food secure households are most likely to use iodized salt (95 percent), while low food security households are least likely (73 percent).

**Table 14: Child feeding and care giving practices, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Infants/toddlers 6-23 months who receive a minimally acceptable diet (apart from breast milk)</b>						
All households	5.8	22.5	290.1	*	784	687
Food security category						
Low	1.6	16.1	920.2	*	261	209
Medium	5.0	17.2	246.4	*	261	214
High	10.7	31.9	197.2	*	263	264
<b>Infants/toddlers older than 6 months who received iron rich/iron fortified foods during the previous day</b>						
All households	52.1	64.6	24.1	*	784	677
Food security category						
Low	44.8	58.9	31.4	*	261	207
Medium	48.9	67.9	38.8	*	261	212
High	62.5	66.6	6.6		263	258
<b>Households consuming adequately iodized salt (20-40ppm)</b>						
All households	76.6	84.6	10.4	*	4,944	5,336
Food security category						
Low	62.6	73.1	16.7	*	1,648	1,778
Medium	78.0	85.2	9.2	*	1,648	1,779
High	89.2	95.4	7.0	*	1,647	1,779

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Table 15 shows several indicators used to measure nutrient consumption of pregnant and lactating women (PLW). All households and all food security categories experienced substantial increases in consumption of food rich in iron, consumption of food rich in vitamin A, and use of iron or iron folate supplements in the last seven days.

The most marked changes came in the consumption of foods rich in iron and consumption of foods rich in vitamin A. In the former category, the overall increase of 184 percent reflects a change from 32 percent at baseline to 91 percent at endline. The least food secure households were the least likely to consume iron-rich foods (85 percent). In the latter category, substantial increases include the overall change from 22 percent of households to 60 percent (166 percent increase). Again, low food security households showed the largest change increasing by 227 percent to almost half of households.

Vitamin A supplementation among mothers of U2s increased overall by 45 percent. The most food secure households experienced a 55 percent increase, compared to 47 percent for the medium food security households, and 29 percent for the least food secure households. Significant increases in use of iron or iron folate supplements is also shown in Table 15, though the overall prevalence was just 12 percent of households.

**Table 15: Nutrient consumption among PLW, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Percentage of PLW who:</b>						
<b>Consume food rich in iron</b>						
All households	31.9	90.5	183.9	*	420	517
Food security category						
Low	24.0	85.3	254.8	*	124	168
Medium	35.6	92.5	160.1	*	162	165
High	34.7	93.5	169.8	*	134	184
<b>Consume food rich in vitamin A</b>						
All households	22.4	59.6	165.7	*	420	517
Food security category						
Low	14.9	48.9	227.4	*	124	168
Medium	22.0	55.8	153.2	*	162	165
High	29.8	72.8	144.0	*	134	184
<b>Consume food rich in calcium</b>						
All households	12.3	12.4	1.1		420	517
Food security category						
Low	8.5	6.1	-27.8		124	168
Medium	10.2	5.9	-42.8		162	165
High	18.3	24.1	31.7		134	184
<b>Have taken iron or iron folate supplements in the last 7 days</b>						
All households	2.2	11.8	448.6	*	420	517
Food security category						
Low	0.8	8.6	1041.5	*	124	168
Medium	1.8	10.7	497.0	*	162	165
High	3.9	15.7	305.0	*	134	184
<b>% of mothers of children aged 6-23 months who received high-dose Vitamin A supplement within 8 weeks postpartum (6 weeks if not exclusively breastfeeding) in last pregnancy</b>						
All households	26.3	38.2	45.4	*	696	710
Food security category						
Low	26.5	34.2	29.1	*	236	225
Medium	23.7	34.8	47.0	*	229	220

High	28.7	44.5	55.0 *	230	265
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Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Recognizing the importance of adequate antenatal care (ANC) to health and wellbeing of both infants and mothers, Nobo Jibon sought to support greater access to appropriate medical care among PLW. Table 16 shows the percent of pregnant women or mothers of children under two-years-old who attended at least four antenatal care sessions. Overall, one-third of respondents reported attending ANC sessions at endline, a 176 percent increase from baseline. Each food security category exhibited similar results, with slightly more households in the high category attending (35 percent) than households in the medium and low categories (33 percent and 30 percent, respectively). Compared to baseline, this represents double the percentage of households among the most food secure households and more than triple that among the other two categories.

**Table 16: Attendance at antenatal care sessions, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations	
				Baseline	Endline
<b>% of pregnant women or mothers of children under 2 attending at least 4 ANC sessions</b>					
All households	11.9	32.9	175.8 *	1,125	1,093
Food security category					
Low	8.5	30.1	256.4 *	365	336
Medium	9.8	32.8	233.5 *	397	349
High	17.7	35.3	99.0 *	362	409

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Vitamin A supplementation and deworming services are also part of Nobo Jibon’s plan to improve diet and reduce illness. While the increase in the percentage of children who received Vitamin A supplementation among all households was minimal (Table 17), both low food security and medium food security households experience significant changes. Notably, these changes were significant in different directions: the least food secure households experience a 22 percent *decrease* in Vitamin A supplementation, and households in the medium category saw a 36 percent increase. All households saw positive increases in the percent of children 12-23 months-old who received deworming within the last six months. Across the entire sample, one-third of children in the age group received deworming, a 74 percent increase. The most food secure households increased the most (97 percent) compared to the other food security categories, and those households were most likely to have dewormed children (41 percent).

**Table 17: Percentage of children 12-23 months who received Vitamin A supplementation, deworming treatment within last 6 months, by food security category**

Indicator	Baseline	Endline	Percent difference	Number of observations
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		<b>(Endline - Baseline)</b>			Baseline	Endline
<b>% of children that received Vitamin-A supplementation</b>						
All households	43.4	45.4	4.6		513	415
Food security category						
Low	47.3	37.0	-21.8	*	168	127
Medium	37.7	51.4	36.1	*	162	133
High	44.8	47.1	5.2		183	155
<b>% of children 12-23 months who received deworming w/in last 6 months</b>						
All households	18.9	32.8	73.8	*	513	419
Food security category						
Low	16.7	24.0	44.1		166	127
Medium	18.8	31.3	66.5	*	162	133
High	20.9	41.0	96.6	*	186	159

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

### ***Water, Sanitation and Hygiene (WASH)***

The following tables provide information on WASH indicators including hygiene, latrines, and quality of drinking water.

The caregiver hygiene practices measured in the survey and shown in Table 18 include personal hygiene behaviors, food hygiene behaviors, water hygiene behaviors, and environmental hygiene behaviors. Across all these practices, surveyed households showed statistically significant increases from baseline to endline. Caregivers in low food security households were least likely to use each practice, though the percentage increased significantly for all behaviors except food hygiene. Likewise, caregivers in high food security households were most likely to demonstrate practices in all but one of the behaviors.

Personal hygiene behaviors increased significantly, but by the least overall of the four measured behaviors (22 percent). The largest increase in this area was among high food security households, from 39 percent to 50 percent, a 29 percent increase. Low food security households followed, with a 26 percent increase in households demonstrating the behavior. Food hygiene behaviors increased more than 30 percent among all surveyed households. Again, high food security households showed the largest increase from 24 percent to 36 percent, a 50 percent increase. Relative to baseline, a greater percentage of medium food security and low food security households also adopted the behavior (20 percent increase and 14 percent increase, respectively), though the latter improvement was not statistically significant.

The percentage of caregivers demonstrating proper water hygiene behaviors more than doubled overall from 44 percent to 91 percent of households. Water hygiene behaviors were the most commonly practiced behavior among households at both baseline and endline and the only area

practiced by more than 40 percent of households. Low food security households led the way in this behavior with a 128 percent increase from baseline to endline. High food security households also increased more than 100 percent, while medium food security households improved by 98 percent. Conversely, environmental hygiene behaviors were the least common at both baseline and endline (16 percent and 30 percent, respectively). The overall increase, though, was nearly double, at 91 percent. All categories of households exhibited increases in the behavior. While low food security households were least likely to use the behaviors (17 percent), this group showed the largest increase (148 percent). The most food secure household, on the other hand, were most likely to use the behavior (46 percent), but increased the least (62 percent).

**Table 18: Caregiver hygiene practices, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>% of caregivers demonstrating proper personal hygiene behaviors</b>						
All households	31.3	38.1	21.8	*	2,341	2,140
Food security category						
Low	21.9	27.6	25.9	*	729	727
Medium	32.6	36.9	13.1	*	831	685
High	38.5	49.7	29.0	*	782	729
<b>% of caregivers demonstrating proper food hygiene behaviors</b>						
All households	20.4	26.6	30.4	*	2,341	2,054
Food security category						
Low	16.4	18.8	14.2		729	686
Medium	20.3	24.3	20.0	*	831	657
High	24.1	36.1	49.8	*	782	711
<b>% of caregivers demonstrating proper water hygiene behaviors</b>						
All households	43.5	91.4	110.0	*	2,341	2,152
Food security category						
Low	39.4	89.7	127.8	*	729	733
Medium	46.3	91.4	97.3	*	831	684
High	44.5	93.1	109.5	*	782	736
<b>% of caregivers demonstrating proper environmental hygiene behaviors</b>						
All households	15.5	29.6	90.8	*	2,341	2,187
Food security category						
Low	6.8	16.8	148.4	*	729	743
Medium	11.0	25.4	131.6	*	831	694
High	28.5	46.2	62.0	*	782	750

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

**Qualitative Information (SOI)**

PLW, husbands of PLW, and adolescents all reported positive experiences from Nobo Jibon activities. Through the program, PLW met monthly to learn and discuss several topics related to pregnancy, childbirth, and child feeding, as well as hygiene and immunization. Husbands were invited to attend these courtyard meetings, but they were not obligated; generally, every husband attended at least part of one session, though few husbands were regular attendees. Both men and women found the meetings valuable, reporting understanding of several topics related to maternal and child health. Growth monitoring and promotion (GMP), in particular, was well received. The training and counseling sessions led to changes in the approach of husband, including greater awareness of their role as father and responsibility to support their wife. Husbands also reported greater awareness of the importance of hygiene and sanitation around the home.

The greatest barriers to behavior change among PLW included the distance and cost of clinic visits and also occasional lack of family support. Husbands reported poverty and economic insolvency as obstacles to changing practices, despite valuing the training sessions and trying to support their wives. Men and women recommended continuing counseling sessions and food rations. Involvement of the VDC and VHC is also important. According to PLW, sustainability depends on motivating involvement without food rations as an incentive, strong connection to VHC and the National Nutrition Network, and continued GMP.

Promotion of MCHN and gender learning also included adolescents who ranged in age from 13 years old to post-secondary school age. Groups met outside of regular school hours and discussed a wide range of topics including community and the environment, personal hygiene, water and sanitation, health and nutrition, and gender inequality. This final category included issues such as educational inequality, dowry, early marriage, violence against women, and mobility outside the home. Both boys and girls believed that the information discussed was important but primarily of value to girls, as “direct beneficiaries of change.” All group members mentioned improved awareness of social gender-related issues and greater confidence in addressing such topics in the community. Lack of cooperation from parents and community leaders, especially regarding gender issues, was the biggest obstacle to change among youth. Adolescents recommended continuing group activities with greater sensitization of the larger community to the topics being discussed and with more formal linkages to the VDC, VHC, and VDMC.

## **SO2 – Market-based Production and Income Generation**

SO2 seeks to enhance household productivity and income in order to improve food access for poor households. Performance measures include those defined for each Intermediate Result and comprehensive indicators to estimate market-based production and income generation: number of income sources per household, annual income from the sale of agricultural products, Household Dietary Diversity Score (HDDS), and months of adequate household food provisions

(MAHFP). The next two tables report the survey data disaggregated first by food security category (Table 19), then by sex of household head (Table 20).

The data show minimal differences in the number of income sources from baseline to endline; at endline, households still had between two and three income sources regardless of food security category or sex of household head. However, notable gains were seen over program life in the value of agricultural sales, especially for low and middle food security terciles, where sales value increased, in real terms, by almost 1/3 (from average 3942 Tk to 5089 Tk in the lowest tercile and from 7410 Tk to 9871 Tk in the middle tercile). While male-headed households reported significant gains (10,808 Tk to 12,139 Tk), agricultural product sales in female-headed households were relatively unchanged (the -9.8% difference between baseline and endline is not statistically significant). As in the baseline, the agricultural sales income of the wealthiest tercile of households was substantially higher than that of the poorest households: at baseline, average agricultural income of the poorest tercile was just 19 percent of that of the wealthiest (3952 Tk compared to 20216 Tk), and at endline, this gap had narrowed only slightly, to 25 percent (5089 Tk compared to 20098 Tk).

Dietary diversity, as measured by the HDDS, saw positive but minimal change, its average value increasing by only one or less than one (on a scale of 0-12) over program life. The minor exception is in the high food security category, where the average HDDS increased from 5.8 to 7.0. As expected, the baseline and endline data both show that the more food-insecure the household, the lower the HDDS. The average overall HDDS is 5.7. As in the baseline, there was little difference in average HDDS of men (5.7) and women (5.4) at endline. Over program life, the average number of months of food provisioning increased by about one month for households with low and middle food security, and stayed about the same for those with higher food security.

**Table 19: Economic and food access indicators, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Number of income sources</b>						
All households	2.2	2.6	17.1	*	4,944	5,335
Food security category						
Low	2.0	2.5	24.2	*	1,648	1,787
Medium	2.2	2.5	12.4	*	1,648	1,788
High	2.4	2.8	15.9	*	1,647	1,760
<b>Average value of agricultural product sales (Taka)</b>						
All households	10521	11646	10.7	*	4,944	5,333
Food security category						
Low	3942	5089	29.1	*	1,648	1,785

Medium	7410	9871	33.2	*	1,648	1,787
High	20216	20098	-0.6		1,647	1,760
<b>Household Dietary Diversity Score (HDDS)</b>						
All households	4.7	5.7	20.7	*	4,944	5,336
Food security category						
Low	3.8	4.7	24.2	*	1,648	1,778
Medium	4.5	5.4	18.0	*	1,648	1,779
High	5.8	7.0	20.4	*	1,647	1,779
<b>Months of Adequate Household Food Provisions (MAHFP)</b>						
All households	9.4	10.4	10.2	*	4,944	5,336
Food security category						
Low	7.1	8.4	17.9	*	1,648	1,778
Medium	9.6	10.9	13.8	*	1,648	1,779
High	11.6	11.9	2.5	*	1,647	1,779

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*). The value of agricultural product sales are reported as deflated, real values.

**Table 20: Economic and food access indicators, by sex of head of household**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Number of income sources</b>						
All households	2.2	2.6	17.3	*	5,026	5,338
Sex head of household						
Male	2.2	2.6	17.5	*	4,722	4,997
Female	2.0	2.3	14.8	*	304	342
<b>Average value of agricultural product sales (Taka)</b>						
All households	10448	11642	11.4	*	5,026	5,334
Sex head of household						
Male	10808	12139	12.3	*	4,722	4,993
Female	4850	4377	-9.8		304	342
<b>Household Dietary Diversity Score (HDDS)</b>						
All households	4.7	5.7	20.8	*	5,026	5,339
Sex head of household						
Male	4.7	5.7	20.7	*	4,722	5,001
Female	4.4	5.4	22.7	*	304	339
<b>Months of Adequate Household Food Provisions (MAHFP)</b>						
All households	9.4	10.4	10.2	*	5,026	5,339
Sex head of household						
Male	9.5	10.4	10.2	*	4,722	5,001
Female	8.6	9.5	10.3	*	304	339

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*).The

value of agricultural product sales are reported as deflated, real values.

### *Agricultural Production and Marketing Practices*

The endline survey included a range of questions related to knowledge of agricultural production and marketing practices, access to quality inputs, capital, and markets; access to natural resources and/or productive assets; and – as a proxy indicator of improved household productivity and income – questions about dietary diversity. Results are presented in this section.

The survey sought information about use of improved agricultural techniques. Similar to baseline measurements, few households use three or more improved agricultural practices (Table 21). While the overall increase among sampled households was significant (42 percent), this reflects seven percent of all households, with little variation between food security categories.

Table 22 shows that, by far, traditional agricultural techniques such as fertilizer and chemical pest control were the most common (81 percent and 68 percent, respectively). Changes in these techniques, while significant, were small. Changes in usage of other techniques varied in magnitude and direction. Composting and animal manure were both used by about one-third of households (33 percent and 30 percent, respectively), though composting decreased 11 percent while animal manure increase four percent. Biological pest control and crop rotation were used by 11 percent and 10 percent of households, respectively, and both saw marked increases (70 percent and 160 percent, respectively).

**Table 21: Use of improved agricultural techniques, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>% HH adopting 3 or more improved practices</b>						
All households	4.9	6.9	42.2	*	2,011	3,065
Food security category						
Low	5.9	6.8	14.9		394	806
Medium	3.8	5.8	51.1	*	661	1,027
High	5.1	7.9	54.0	*	956	1,232

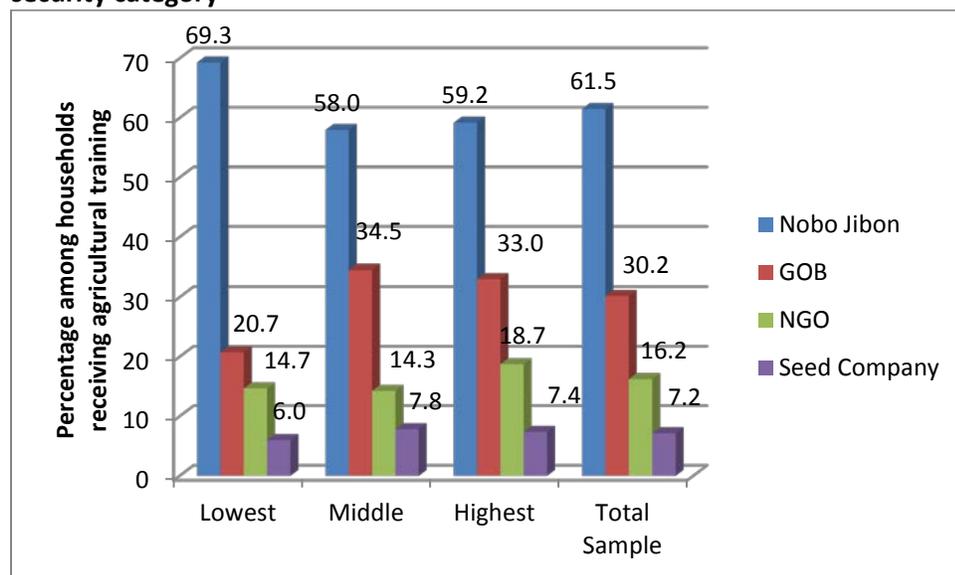
Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

**Table 22: Type of improved agricultural technique used, by food security category**

% household reporting using technique (endline)				
Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	
Fertilizer	83.2	81.2	-2.4	*
Chemical pest control	65.1	67.8	4.1	*
Compost	36.5	32.5	-11.0	*
Animal manure	28.5	29.6	3.9	*
Biological pest control	6.2	10.5	68.8	*
Crop rotation	3.9	10.3	161.4	*
Integrated pest management	12.4	10.1	-18.8	*
Mechanical pest control	1.9	3.5	86.1	*
Improved irrigation	3.0	2.5	-17.3	
N	2011	3065		

Among all sample households, thirteen percent reported they have received any agricultural training (Figure 1). Less than one-quarter of households (22 percent) engaged in agricultural production in previous year received training. Of those households, the most common source of training by far was Nobo Jibon (62 percent). This is also true among each food security group, with greater popularity among the least food secure group (69 percent) than the medium and high groups (58 percent and 59 percent, respectively). Government training was next most popular overall, though medium (35 percent) and high (33 percent) food security households took advantage of this source more than low food security households (21 percent). After government training, NGOs and seed companies were the next most popular sources of training overall and among each food security group.

**Figure 1: Source of agricultural training reported by households at endline, by food security category**



N= household reporting receipt of agricultural training (lowest = 176, middle = 210, highest = 182).

Households were far more likely to sell agricultural produce to a local market (79 percent) than any other option (Table 23), equal to baseline measurements. More than one-quarter of households also sold to traders (28 percent) or to neighbors or relatives (27 percent). Sales to either an itinerant buyer or to NGOs, cooperatives or sales companies accounted for less than three percent of households.

**Table 23: Types of buyers for agricultural product**

% household reporting using buyers (endline)			
Indicator	Baseline	Endline	Percent difference (Endline - Baseline)
Local market	78.6	78.6	0.0
Traders	23.9	28.3	18.5 *
Neighbors/relatives	18.2	27.2	49.6 *
Local broker	8.3	8.3	-0.1
Itinerant buyer	1.5	2.5	67.9 *
Other (NGO, collection point, sales company)	0.5	2.2	307.7 *
N	1177	1819	

Table 24 shows changes in marketing practice by food security category. Significant gains were reported in households adopting improved marketing practices and bulking products for sale, though these are both still remarkably small proportions of the population, with just two percent

of all households reporting either measure. Most notably, both low and medium food security households reported some involvement in these activities, after exhibiting no involvement at baseline.

**Table 24: Use of marketing practices, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>% HH bulking products for sale</b>						
All households	0.4	1.8	313.1	*	1,177	1,821
Food security category						
Low	0.0	2.1	N/A		196	386
Medium	0.0	2.3	N/A		352	593
High	0.8	1.3	64.0	*	629	843
<b>% HH adopting improved marketing practices</b>						
All households	0.4	1.9	324.7	*	1,177	1,821
Food security category						
Low	0.0	2.1	N/A		196	386
Medium	0.0	2.3	N/A		352	593
High	0.8	1.5	77.3	*	629	843

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Table 25 shows the source of agricultural inputs for program households. Companies (85 percent) and neighbors or relatives (71 percent) were the most popular sources, by far. Both of these represent large increases, growing from 0.2 percent for companies and 17 percent for neighbors or relatives. NGOs also became a much more prominent source of inputs, increasing from just 2 percent at baseline to 33 percent. The only notable decrease was among local markets, which were reporting by four-fifths of households (79 percent) at baseline, but less than one-third (30 percent) at endline. Other sources used include the government, coops and farmer groups, trained input retailers, and itinerant merchants.

**Table 25: Source of agricultural inputs, by food security category**

<b>% household reporting purchase or receipt of inputs (endline)</b>						
Indicator	Baseline	Endline	Percent difference (Endline - Baseline)			
Companies	0.2	85.1	34,354.2	*		
Neighbor/relative/individual	17.1	71.2	315.6	*		
NGOs	2.4	33.2	1,289.2	*		
Local Markets	79.4	30.1	-62.1	*		

GOB	7.9	11.3	42.7	*
Coops/farmer groups	1.8	11.0	516.7	*
Trained input retailer	7.1	10.2	44.7	*
Itinerant merchant	0.5	9.5	1,804.5	*
VDC	0.3	3.1	1,136.5	*
Other	4.8	2.1	-55.9	*
N	1605	2504		

While more than two-thirds of households have agricultural land, access varies widely across food security categories (Table 26). All groups saw a significant increase from baseline, but the most food secure households were most likely to have land (80 percent) compared to the households in the middle and low food secure categories (68 percent and 56 percent, respectively).

A similar trend follows for average land area. The least food secure households reported 69.8 decimals of land (a 59 percent increase), while the medium and high food security households had 89 decimals and 129 decimals, respectively. These trends also continue with average value of agricultural product sales. Overall, the average value rose 60 percent. Low and medium food security households experienced the largest improvements (86 percent and 92 percent, respectively). At 29,000 taka (43 percent increase), the most food secure households' average sales was double that of medium food security households and nearly four times greater than the least food secure households.

Use of khas land and water bodies for agricultural production dropped significantly overall (25 percent) and among each food security group. High food secure households were least likely to use khas land and water bodies (38 percent) and also reported the largest decrease of any group (34 percent). Use among medium food secure households also decreased nearly one-third (31 percent). The least food secure households reported the greatest percentage of households using khas land and water bodies (55 percent), despite also experience a nine percent decrease.

**Table 26: Summary statistics for agriculture, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations		
				Baseline	Endline	
<b>% HH with agricultural land</b>						
All households	59.3	68.0	14.5	*	4,943	5,336
Food security category						
Low	47.7	55.7	16.8	*	1,648	1,778
Medium	55.6	68.1	22.6	*	1,647	1,779
High	74.8	80.1	7.0	*	1,647	1,779
<b>Average land area (decimals)</b>						
All households	88.1	99.5	12.9	*	2,930	3,610

Food security category						
Low	43.9	69.8	59.0	*	783	982
Medium	70.2	88.9	26.6	*	915	1,208
High	129.6	129.1	-0.4		1,232	1,419
<b>Average value of agricultural product sales (Tk)</b>						
All households	10,521	11,646	10.7	*	4,944	16,770
Food security category						
Low	3,942	5,089	29.1	*	1,648	1,785
Medium	7,410	9,871	33.2	*	1,648	1,787
High	20,216	20,098	-0.6		1,647	1,760
<b>% of households using khas land/water bodies for production of crops, livestock, and fish</b>						
All households	61.8	46.7	-24.5	*	4,944	5,336
Food security category						
Low	59.7	54.5	-8.7	*	1,648	1,778
Medium	68.6	47.6	-30.5	*	1,648	1,779
High	57.3	38.0	-33.7	*	1,647	1,779

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*).  
Agricultural product sales are reported as deflated, real values.

Household agricultural production is shown in Table 27, disaggregated by food security category. Significant increases were observed overall and in each individual category shown, among all three food security groups.

Nearly 90 percent of all households (89 percent) engaged in some form of production (crops, livestock or fish), an increase of 17 percent from baseline. The largest increase was among the least food secure households (25 percent), with 86 percent reporting production. In addition, 44 percent of households reported an increase in production, up from 39 percent at baseline. This included more than half (53 percent) of the most food secure households, 43 percent of medium food security households, and 35 percent of the least food secure households that experienced increases in production.

Similar to baseline, livestock production was the most common area, with 83 percent of households engaging, an increase of more than one-third (34 percent), and little variation among food security groups. The next most common form of production was crops (57 percent). Less than half (45 percent) of the least food secure households produced crops, but this group experienced the largest growth of any group (90 percent). Meanwhile, crops were produced by 70 percent of high food security households (the most of any group), a 19 percent increase (the smallest of any group). In addition, all households saw an increase in agricultural production, and significantly more households in each food security category reported an increase compared to baseline. Fish production was the least popular form of agriculture (30 percent), but still increased 34 percent. All groups saw significant increases in fish production, with a notable 84 percent increase among the least food secure households. Further, nearly one-quarter of all

households (23 percent) reported an increase in fish production, compared to 15 percent at baseline, a 48 percent increase.

**Table 27: Household production, by food security category**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>% HH with agricultural production last year</b>						
All households	40.7	57.4	41.2	*	4,944	5,336
Food security category						
Low	23.9	45.3	89.6	*	1,648	1,778
Medium	40.1	57.7	44.0	*	1,648	1,779
High	58.0	69.3	19.3	*	1,647	1,779
<b>% reporting increased agricultural production</b>						
All households	40.0	47.9	19.7	*	2,011	3,065
Food security category						
Low	36.5	40.4	10.6	*	394	806
Medium	38.1	46.6	22.5	*	661	1,027
High	42.8	53.9	25.9	*	956	1,232
<b>% HH with livestock</b>						
All households	61.7	82.5	33.8	*	4,944	5,336
Food security category						
Low	60.7	80.7	32.9	*	1,648	1,778
Medium	60.1	82.7	37.6	*	1,648	1,779
High	64.1	84.1	31.2	*	1,647	1,779
<b>% reporting increased livestock production</b>						
All households	27.1	21.8	-19.5	*	3,048	4,403
Food security category						
Low	23.1	19.3	-16.6	*	1,001	1,435
Medium	28.8	21.5	-25.4	*	991	1,472
High	29.4	24.7	-16.1	*	1,056	1,496
<b>% HH with fish production</b>						
All households	22.8	30.4	33.5	*	4,944	5,336
Food security category						
Low	10.6	19.5	84.4	*	1,648	1,778
Medium	20.1	28.1	40.1	*	1,648	1,779
High	37.8	43.6	15.6	*	1,647	1,779
<b>% reporting increased fish production</b>						
All households	15.3	22.6	47.7	*	1,127	1,624
Food security category						
Low	17.1	18.8	9.9	*	174	347
Medium	14.1	21.3	51.4	*	331	500

High	15.5	25.2	62.7	*	622	776
<b>% HH engaged in at least one category (crops, livestock, fish)</b>						
All households	75.9	88.6	16.7	*	4,944	5,336
Food security category						
Low	68.6	85.8	25.0	*	1,648	1,778
Medium	74.5	88.8	19.2	*	1,648	1,779
High	84.6	91.2	7.9	*	1,647	1,779
<b>% reporting increased production in any category</b>						
All households	39.1	43.6	11.4	*	3,752	4,728
Food security category						
Low	31.0	34.8	12.3	*	1,131	1,525
Medium	39.1	42.7	9.1	*	1,228	1,580
High	45.6	52.7	15.4	*	1,393	1,623

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

### *Qualitative Information (SO2)*

Program population was divided into three groups for this objective: 1) extreme poor (EP), who had limited experience in agriculture and access to resources and were all or mostly women; 2) homestead production poor (HPP), comprised of all women; and 3) productive poor (PP), the majority of who were men and also larger-scale farmers than those in the other groups.

The two groups made up of women, HPP and EP, reported improvements in household food consumption as well as some aspects of women's empowerment. In the HPP group, households consumed greater amounts of fish and vegetables, while EP households regularly consumed two or three meals every day. Increased income among both groups led to better household financial security and in women's decision-making power regarding the additional funds. EP groups, in particular mentioned using the income for children's education expenses. Further, EP beneficiaries greater support from their husbands and other men, while HPP noticed increased interest and participation of men and children in homestead gardening. Access to capital and cash for expansion was the largest obstacles for these groups, and both HPP and EP group discussed the need for financial assistance to invest and expand operations. An additional recommendation was to expand training opportunities and activities and the include training for men. Participants suggested that inclusion of male family members would also improve project sustainability.

Most PP participants were male and all were established farmers who met household consumption needs. This group focused on improving value chain linkages and improving their farm business. The PP beneficiaries discussed changing their mindset regarding to understand modern and appropriate techniques. The female participants in the group noted their increased role in production and marketing of fish and vegetables. While this group reported gaining skills and knowledge, they still felt a need for support and guidance from the program and were

hesitant to use resources for adopting new technologies. As with the other groups, PP members recommended further training, as well as program support for adopting technologies and practices. Regarding sustainability, the PP group said that continuing the program for two or three more years would greater improve their ability to expand and diversify to a point where they would not require external assistance.

### SO3 – Disaster Risk Reduction

Through SO3, Nobo Jibon sought to provide greater protection for children and their families through contingency planning and improved emergency response. Both baseline and endline surveys included questions related to behaviors during past disasters, natural disaster preparedness, and ability to resume livelihood activities in the wake of recent disasters. Table 28 presents the results.

Notably, Table 28 shows that, among all survey households and each district, significantly *fewer* households had a plan to protect members, livestock, or assets in the event of a disaster compared to baseline (19 percent decrease). Barguna district decreased the most, falling from more than half of households with a plan to 42 percent of households, a 25 percent decrease. Less than one-quarter of households (22 percent) in Barisal district reported having a plan, a 17 percent decrease and the lowest total of any district.

Few households reported minimal asset loss in the last disaster (four percent), though every district experienced significant, albeit mixed, changes. The endline totals reflect significant increases in Barisal and Barguna and a significant decrease in Patuakhali. Households in Barisal were most likely to experience minimal loss (seven percent), while just two percent of households in the other districts reported this. No significant change was seen in the percentage of households with loss of life during the last disaster. More notably, four out of five households (80 percent) were able to resume livelihood activities within two weeks following a natural disaster, up from 74 percent at baseline. Both Barisal and Barguna districts reported significant gains in this area (eight percent and 17 percent, respectively).

**Table 28: Household preparedness and impact of recent disaster, percentage by district**

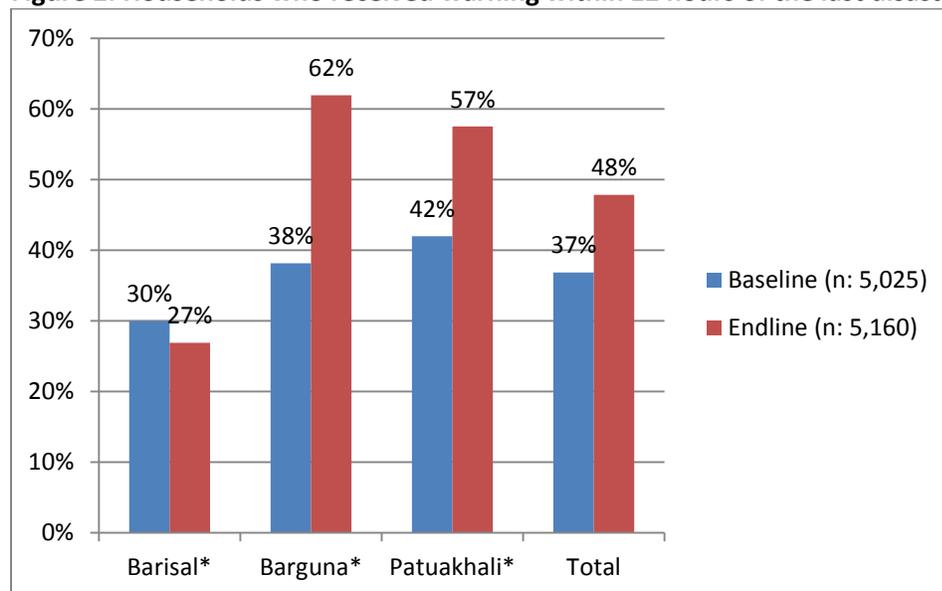
Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Households with a plan to protect members, livestock, or assets in the event of a disaster</b>						
All households	45.8	37.1	-19.2	*	5,026	5,345
District						
Barisal	26.3	21.8	-17.1	*	1,649	2,019
Barguna	56.1	41.9	-25.3	*	1,565	1,614
Patuakhali	54.8	50.5	-7.9	*	1,812	1,712
<b>Households with loss of life during last disaster</b>						

All households	0.6	0.5	-15.8		5,026	5,160
District						
Barisal	0.4	0.2	-43.5		1,649	1,860
Barguna	1.3	1.0	-23.4		1,565	1,607
Patuakhali	0.3	0.5	54.4		1,812	1,693
<b>Minimal asset loss in last disaster</b>						
All households	3.8	3.8	0.0		5,026	4,415
District						
Barisal	4.9	7.2	46.5	*	1,649	1,370
Barguna	0.5	2.3	333.3	*	1,565	1,460
Patuakhali	5.6	2.2	-60.4	*	1,812	1,584
<b>Able to resume livelihood activities within 2 weeks following a natural disaster</b>						
All households	73.8	80.0	8.4	*	5,026	5,160
District						
Barisal	75.2	81.5	8.4	*	1,649	1,860
Barguna	72.5	84.5	16.5	*	1,565	1,607
Patuakhali	73.8	74.2	0.6		1,812	1,693

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Nearly half of all households (48 percent) received warning within 12 hours of the last disaster up from 37 percent at baseline (Figure 2). Barguna district experienced the largest increase from 38 percent of households to 62 percent. A significant increase was also observed in Patuakhali, while 27 percent of Barisal households received warning, down from 30 percent.

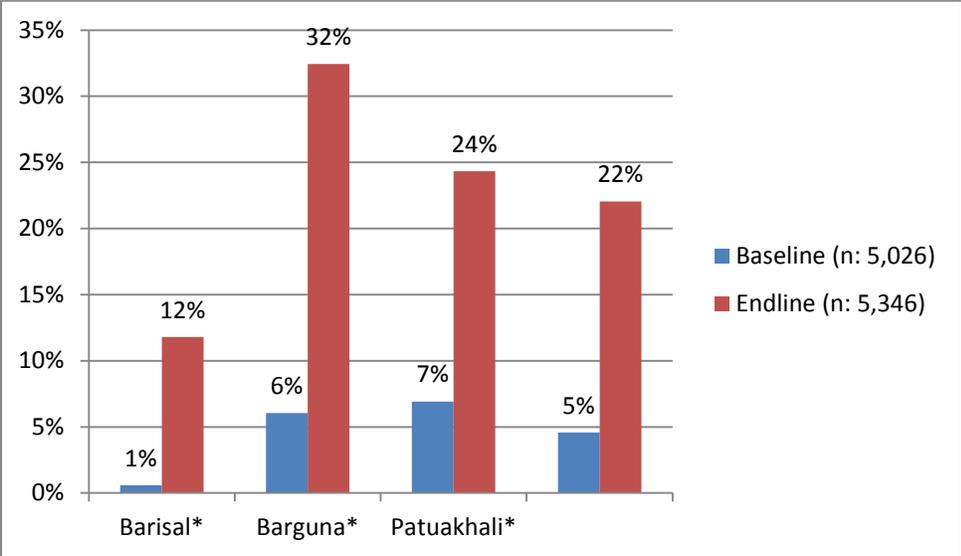
**Figure 2: Households who received warning within 12 hours of the last disaster**



Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

The proportion of households that received training in disaster preparedness increased markedly, overall, as shown in Figure 3. At endline, 22 percent of households had received training compared to five percent at baseline. Similarly large gains were seen in each district. The largest increase in trained households was in Barguna district, where 32 percent reported training (six percent at baseline). Likewise, Patuakhali improved from seven percent to 24 percent, and Barisal increased from one percent to 12 percent.

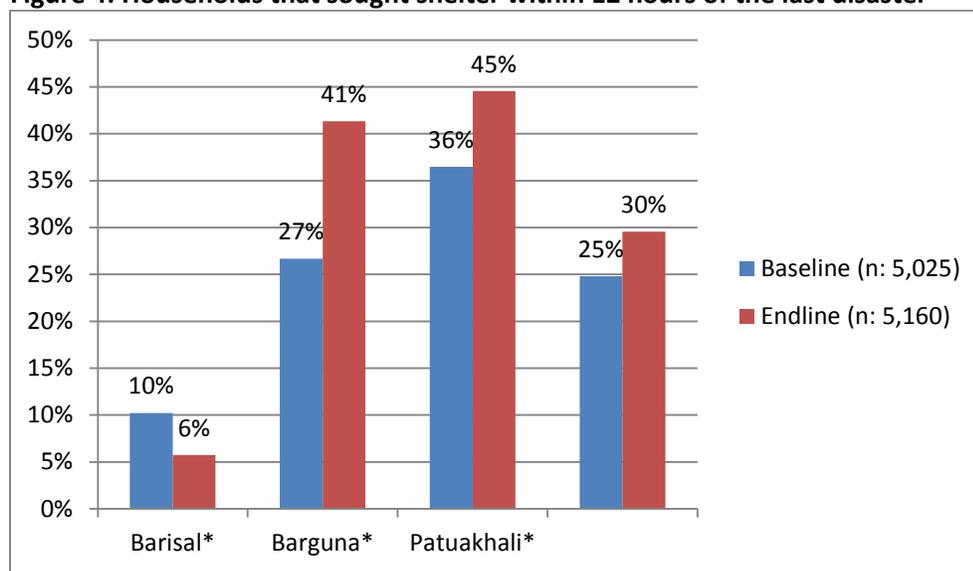
**Figure 3: Households who received disaster preparedness training, by district**



Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Disaster response also improved among all households, rising from 25 percent to 30 percent (Figure 4). This improvement is reflected in both Barguna and Patuakhali districts, which reported 41 percent and 45 percent of households, respectively, that sought shelter (27 percent and 36 percent, respectively, at baseline). Barisal, in contrast reported a small but significant decrease from 10 percent to six percent of households.

**Figure 4: Households that sought shelter within 12 hours of the last disaster**



Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

### ***Qualitative Information (SO3)***

Activities in this SO were split between youth volunteers and adults. After receiving DRR training, 25-member youth committees with equal numbers of boys and girls organized courtyard sessions and trainings for community members. Youth volunteers reported using their knowledge, without incentive, to actively engage the community in skill-building around all aspects of disaster management. This group offered two recommendations: first, stronger linkages to the union disaster management committee (UDMC) and, second, additional training and equipment, including a first aid kit.

Separate groups were formed for men and women, who received a DRR orientation and participated in courtyard sessions held by the youth. Adults stated that the topics covered in the trainings were useful and every household has a written contingency plan. Participants were better prepared for a disaster and followed the information in their plans. Some families preferred to stay with friends or neighbors rather than at a cyclone shelter, either because not enough shelters were available or because they feared gender or socio-cultural discrimination. Adults recommended building more shelters and improving infrastructure, as well as continued public and private support and improved gender equity and women's empowerment.

### **Project Participation**

In order to assess the extent to which project interventions contributed to changes in outcome and impact indicators, comparisons of these higher level indicators are made across households that reported participating in different combinations of project interventions, focusing on participation in SO1 and SO2 interventions. The following tables provide information on

moderate and severe child malnutrition, HFIAS, CSI, HDDS, and MAHFP disaggregated by program participation.

When disaggregated by program participation, program goal indicators show limited significance (Table 29). The table compares household that received no program assistance to households that received SO1 programming only, SO2 programming only, or a combination of SO1 and SO2 programming.

From baseline to endline, all households showed improvement in moderate and severe stunting among children 6-59 months (28 percent decrease and 30 percent decrease, respectively). The only significant improvement within program participation categories is a decrease in moderately stunted children in households that received both SO1 and SO2. No significant results were observed among severely stunted children when compared across program participation.

Likewise, improvements were reported among all households in food insecurity and coping strategies. Overall, survey households scored lower on the HFIAS (19.4) than at baseline (28.7), a 32 percent decrease. Households that received either only SO2 or both SO1 and SO2 saw significant decreases (four percent and 26 percent, respectively) compared to non-program households. Similarly, across the survey sample a 38 percent drop was seen in the CSI from 13.5 to 8.4. Again, significant decreases were reported among households that received only SO2 (six percent decrease) or both SO1 and SO2 (29 percent decrease).

**Table 29: Key program goal indicators, by program participation**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>% of moderately stunted (HAZ&lt;-2SD) children age 6-59 months</b>						
All households	43.9	31.8	-27.7	+	2,296	2,060
Program participation						
Did not participate SO1 or SO2		25.7	-41.5			365
Participated SO1 only		32.2	-26.8			1,146
Participated SO2 only		31.7	-27.8			32
Participated SO1 & SO2		35.3	-19.8	*		517
<b>Household Food Insecurity Access Scale (HFIAS)</b>						
All households	28.7	19.4	-32.4	+	5,009	5,346
Program participation						
Did not participate SO1 or SO2		17.9	-37.6			2,377
Participated SO1 only		18.8	-34.7			1,677
Participated SO2 only		27.5	-4.3	*		351
Participated SO1 & SO2		21.4	-25.5	*		941

<b>Coping Strategy Index</b>						
All households	13.5	8.4	-37.8	+		4,969 5,346
Program participation						
Did not participate SO1 or SO2		7.4	-44.7			2,377
Participated SO1 only		8.1	-39.7			1,677
Participated SO2 only		12.7	-5.8	*		351
Participated SO1 & SO2		9.6	-28.9	*		941

Note: Plus sign (+) for "all households" indicate endline-baseline difference is statistically significant at the 10%. Stars (\*) for program participation indicate difference is statistically significant compared to "did not receive SO1 or SO2" at endline.

Table 30 shows SO2 impact indicators (HDDS and MAHFP) by program participation. Both of these measures improved across all sample households, with very little variation among program participation categories. HDDS rose from 4.7 to 5.7, a 21 percent increase. When disaggregated, households that received only SO2 experience a significant increase (16 percent) compared to those that did not receive SO1 or SO2. MAHFP increase 10 percent overall from 9.4 months to 10.4 months. Improvements were reported among households that received only SO2 (five percent) or both SO1 and SO2 (nine percent).

**Table 30: SO2 impact indicators, by program participation**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Household Dietary Diversity Score (HDDS)</b>						
All households	4.7	5.7	20.8	+	5,026	5,346
Program participation						
Did not receive SO1 or SO2		5.7	20.9			2,377
Received SO1 only		5.7	21.9			1,677
Received SO2 only		5.4	15.5	*		351
Received SO1 & SO2		5.7	20.6			941
<b>Months of Adequate Household Food Provisions (MAHFP)</b>						
All households	9.4	10.4	10.2	+	5,026	5,346
Program participation						
Did not receive SO1 or SO2		10.5	11.4			2,377
Received SO1 only		10.4	10.5			1,677
Received SO2 only		9.9	5.1	*		351
Received SO1 & SO2		10.2	8.5	*		941

Note: Plus sign (+) for "all households" indicate endline-baseline difference is statistically significant at the 10%. Stars (\*) for program participation indicate difference is statistically significant compared to "did not receive SO1 or SO2" at endline.

Data on three childhood feeding practices disaggregated by participation in SO1 are shown in Table 31. Among all survey households, significant gains are seen in U2 children who receive a minimally acceptable diet (290 percent increase) and in children put to breast within one hour of birth (42 percent increase). Of note, the endline value of households that participated in SO1 and those that did not participate in SO1 for both these indicators was little or none: 23 percent of households that participated fed a minimally acceptable diet (compared to 20 percent of non-participants), and 41 percent of both participants and non-participants put children to the breast within one hour. No significant results were seen regarding exclusive breastfeeding of children under six months old. Because many of these measures were not significant across participants and non-participants, it may be concluded that either program spill over resulted in an increase in non-participant childhood feeding practices across the community or that messaging from other programs, including those under the government, may have worked in conjunction with interventions in place under SO1.

**Table 31: Childhood feeding practices, by program participation in SO1**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations	
				Baseline	Endline
<b>Infants/toddlers 6-23 months who receive a minimally acceptable diet (apart from breast milk)</b>					
All households	5.8	22.6	289.7 +	793	688
Program participation					
Participated SO1		23.3			551
Did not participate SO1		19.5			137
<b>Children under 6 month exclusively breastfed</b>					
All households	38.4	44.9	16.9	282	320
Program participation					
Participated SO1		44.4			227
Did not participate SO1		46.3			93
<b>Infants and toddlers who were put to the breast within one hour of birth</b>					
All households	28.9	41.1	42.2 +	1,142	968
Program participation					
Participated SO1		41.1			968
Did not participate SO1		41.1			222

Note: Plus sign (+) for "all households" indicate endline-baseline difference is statistically significant at the 10%. Stars (\*) for program participation indicate difference is statistically significant compared to "did not receive SO1 or SO2" at endline.

When comparing across program participation for SO2 activities for improved agricultural techniques, the data shows in Table 32 that there is a significant difference between participants and non-participants across both measures. The percent of households adopting improved marketing practices were higher for SO2 participants at 2.5 percent compared to non-participants

at 1.6 percent. This represented a 56.3 percent difference between these two groups. For the percent of household adopting three or more improved agricultural practices, there was a 61.0 percent increase from non-participants to participants.

**Table 32: Use of improved agricultural techniques, by program participation in SO2**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations		
				Baseline	Endline	
<b>% HH adopting improved marketing practices</b>						
All households	0.4	1.9	324.7	+	1,184	1,825
Program participation						
Participated SO2		2.5		*		509
Did not participate SO2		1.6				1,317
<b>% HH adopting 3 or more improved agricultural practices</b>						
All households	4.9	6.9	42.2	+	2,025	3,071
Program participation						
Participated SO2		9.5		*		811
Did not participate SO2		5.9				2,260

Note: Plus sign (+) for "all households" indicate endline-baseline difference is statistically significant at the 10%. Stars (\*) for program participation indicate difference is statistically significant compared to "did not participate SO2" at endline.

When stratifying the agricultural practices by technique in Table 33, the adoption of animal manure, crop rotation, and fertilizer saw a significant increase from non-participant to participants. Participants, at endline were 22.4 percent more likely to use animal manure, 50.0 percent more likely to use crop rotation, and 3.9 percent more likely to use fertilizers. However, the data also shows that non-participants were significantly more likely to use improved irrigation techniques at a 48.3 percent difference. This could be due to other outside programs occurring simultaneously to interventions introduced to the same communities.

**Table 33: Use of improved agricultural techniques, by technique and program participation (endline)**

Indicator	Endline	Percent difference (Participant-Non-participant)	Number of observations	
<b>% HH adopting improved agricultural techniques (endline)</b>				
<b>Animal manure</b>				
Participated SO2	33.9	22.4	*	811
Did not participate SO2	27.7			2,260
<b>Compost</b>				
Participated SO2	34.5	8.8		811

Did not participate SO2	31.7			2,260
<b>Crop rotation</b>				
Participated SO2	13.8	50.0	*	811
Did not participate SO2	9.2			2,260
<b>Fertilizer</b>				
Participated SO2	83.6	3.9	*	811
Did not participate SO2	80.5			2,260
<b>Biological pest control</b>				
Participated SO2	10.0	-2.9		811
Did not participate SO2	10.3			2,260
<b>Mechanical pest control</b>				
Participated SO2	3.2	-11.1		811
Did not participate SO2	3.6			2,260
<b>Chemical pest control</b>				
Participated SO2	69.8	4.0		811
Did not participate SO2	67.1			2,260
<b>Integrated pest management</b>				
Participated SO2	11.6	18.4		811
Did not participate SO2	9.8			2,260
<b>Improved irrigation</b>				
Participated SO2	1.5	-48.3	*	811
Did not participate SO2	2.9			2,260

Note: Stars (\*) for program participation indicate difference is statistically significant compared to "did not participate SO2" at endline.

Two indicators for disaster preparedness and response are shown in Table 34. Overall, the proportion of households with a disaster plan dropped from 46 percent to 37 percent, a 19 percent decrease. A minimal decrease was seen among households that participated in SO3, as 43 percent of these had a disaster plan compared to 29 percent of those that did not participate in SO3. Four-fifths of households (80 percent) were able to resume livelihoods activities within two weeks of a natural disaster, an eight percent increase. Interestingly, those households that did *not* participate in SO3 improved more than those that did (82 percent versus 79 percent, respectively). The difference is small but significant among participating households.

**Table 34: Household preparedness and impact of recent disaster, by program participation**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations	
				Baseline	Endline
<b>%HH with a plan to protect members, livestock, or assets in the event of a disaster</b>					
All households	45.8	37.1	-19.2 +	5,026	5,345

Program participation						
Participated SO3	42.7			*		3,188
Did not participate SO3	28.7					2,157
<b>% HH able to resume livelihood activities within 2 weeks following a natural disaster</b>						
All households	73.8	80.0	8.4	+	5,026	5,160
Program participation						
Participated SO3		78.9		*		3,093
Did not participate SO3		81.8				2,067

Note: Plus sign (+) for "all households" indicate endline-baseline difference is statistically significant at the 10%. Stars (\*) for program participation indicate difference is statistically significant compared to "did not participate SO3" at endline.

Data shown from Table 35 compares program participation across each strategic objective to the three food security categories (low, medium, and high) of participants to non-participants. Under all three strategic objectives, those in the lowest food security category had the greatest participation at 50.7 percent for SO1, 27.1 percent for SO2, and 63.3 percent for SO3. Of note, SO2 had a lower number of participants than those in SO1 and SO3. When comparing low food security participants to those in both the medium and high categories, there was a significant difference in the participation percentages across each strategic objective. It appears that participant with low food security were targeted in program interventions.

**Table 35: Percent SO participation, by food security category**

Indicator	Program participation		
	SO1	SO2	SO3
All households	48.6	24.1	59.7
Food security category			
Low	50.7	27.1	63.3
Medium	47.1 *	23.4 *	57.8 *
High	47.8 *	21.7 *	57.8 *

Note: Stars (\*) for program participation across food security categories indicate difference is statistically significant when compared to low food security at endline.

## Vulnerable Groups

### *Women's Decision Making and Empowerment*

Nobo Jibon was designed to address two main causes of food insecurity in the program area: i) erratic and low-paying income earning opportunities, especially for asset-poor households, and ii) social exclusion and low status of women and children. Nobo Jibon thus aimed to strengthen

the enabling environment for income generation and improved household economies, and to promote women’s engagement in household decisions.

To assess progress in these indicators, both surveys asked women who earned cash by working on a regular basis outside the home about the source of their income. Additionally, female adult respondents who worked on a regular basis were asked to rate their level of participation in five common household decisions. Women were considered to have a voice in a decision if they could make it alone or jointly with their husband.

Table 36 reports on the types of income-earning activities women engage in and on the types of household decisions they report making, disaggregated by food security category. Data were collected only for the households with women who report earning income. Raising poultry is by far the most common enterprise, with four-fifths (80 percent) of all households with income-earning women engaged in poultry activities. Participation in all other activity types was very limited – under 10 percent for all activities listed on the survey. The one exception to this is the lowest food security tercile, where about 15 percent worked for daily wages.

In terms of decision-making, at baseline, a solid majority of income-earning women – both sample-wide and within each food security category – reported being able to make decisions either alone or with her husband, for all decision types listed on the survey. This tendency was even stronger at endline, with three-quarters or more of income-earning women reporting decision-making authority for all decision types. The most marked change in this respect was for decisions on children’s health expenditures, which increased from 77 percent of the overall sample to 87 percent, with larger increases for the low and medium food security groups. The survey data and methodology do not allow us to definitively attribute these changes to program efforts.

The women’s economic empowerment score is the sum of scores for individual decisions. If the response indicated that a woman made a decision alone, or jointly with her husband, the score value is one. If the response indicated that the decision was made by her husband, somebody else, or her husband and somebody else, the score value is zero. The women’s economic empowerment score increased slightly, but significantly, from baseline to endline, from 3.7 to 4.2, out of a maximum score of 5.0.

**Table 36: Women's income earning activities and decision making, by food security category**

Indicator	Low	Middle	High	Total
N	1778	1779	1779	5336
Percent of all HH with a woman who earns income	38.8	30.9	29.9	33.2
<b>% women's participation in income-earning activities (endline)</b>				

N	690	549	532	1771
Poultry	74.7	85.9	80.6	80.0
Daily wage earner	14.5	5.1	2.1	7.8
Agri/Farmer	6.7	7.4	6.0	6.7
Handicrafts/Handloom	8.2	4.3	4.8	6.0
Other	6.9	3.9	3.8	5.0
Services	1.0	2.4	7.7	3.5
Work in other household	6.9	1.3	0.0	3.1
Business	1.4	1.7	1.5	1.5
Private tutor	1.0	1.0	1.9	1.3
<b>% women making household decisions (endline)</b>				
N	690	549	532	1771
Family visits	77.3	73.5	79.7	76.8
Expenditures on children's health	88.3	84.2	86.6	86.5
How to spend women's income	80.9	78.9	88.2	82.5
Major household purchases	78.1	71.7	78.7	73.7
Purchases of daily household needs	80.5	76.4	82.9	76.3
<b>Women's economic empowerment (mean, endline)</b>				
Women's economic empowerment score	4.2	4.0	4.3	4.2

Women were further analyzed by their level of empowerment. Women who scored 5.0 across the sum score for individual decision-making were considered *more empowered*, whereas women with scores less than 5.0 were considered *less empowered*. It was found that women were significantly more empowered at endline (67.5 percent) than women at the baseline (56.3 percent). Although the trend of empowerment has gone up, it is not clear if this was related to participation in program activities especially when compared across program participation in SO1 and SO2 interventions. Women eligible to participate in SO1 courtyard sessions (PLW and mothers with children under two years) were significantly less so empowered at endline than those women who did not participate in these interventions. From focus group discussions, issues related to women empowerment were not emphasized by respondents as a key topics covered in these sessions; rather there was more focus on pregnancy and child care practices. Women's empowerment issues under SO1 were more so highlighted with the program's adolescent groups; topics included gender inequality, early marriage, mobility, and violence against women. Since adolescents were not included in the survey design, data was not available to gauge their level empowerment due to program participation in SO1 interventions. For SO2, despite having more empowerment and income generation-focused interventions, participants showed no significant difference when compared to non-participants. The results are presented in Table 37.

**Table 37: Women's decision making and empowerment, by intervention and program participation**

Indicators	Baseline	Endline	Percent	p-
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			difference	value
<b>Women's decision making score (mean, baseline, endline)</b>				
N	1519	1774		
Women's decision making score a/	3.7	4.2	11.3	+
<b>Women's empowerment (endline)</b>				
% women <i>more empowered</i>	56.3	67.5	19.9	+
% women <i>more empowered</i> , by participation in SO1 interventions b/				
Participant	-	64.9		
Non-participant	-	70.2	-7.5	
% women <i>more empowered</i> , by participation in SO2 interventions b/				
Participant	-	67.9		
Non-participant	-	67.4	0.7	*

Note: Plus sign (+) for "all households" indicate endline-baseline difference is statistically significant at the 10%. Stars (\*) for program participation indicate difference is statistically significant compared to "did not receive SO1 or SO2" at endline.

a/ Percent difference and p-value are based on the mean difference between the endline and baseline measurements.

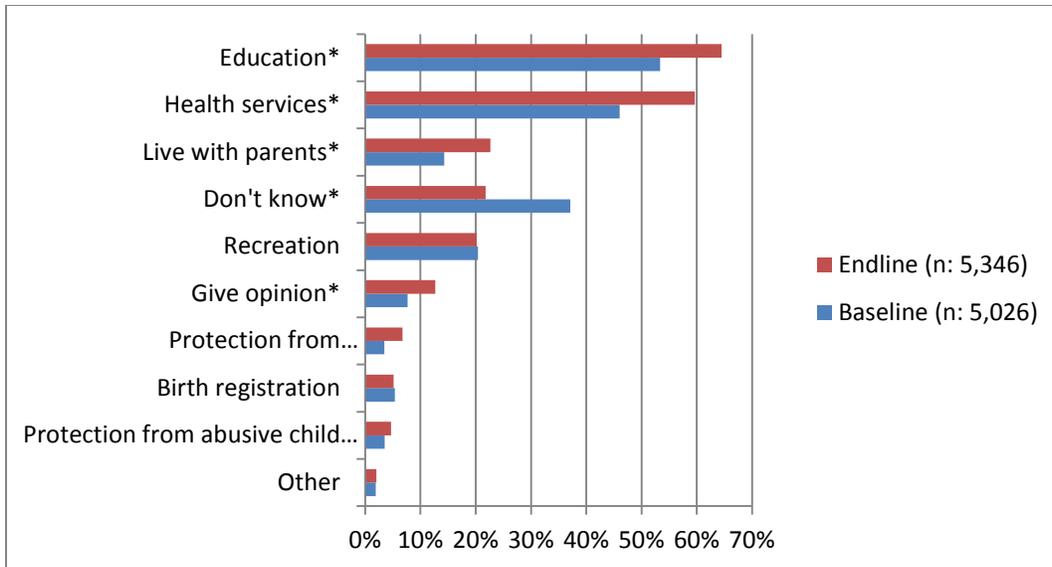
b/ Percent difference and p-value are based on the difference between non-participants and participants in program specific interventions

### ***Child Rights and Protection***

Village Development Committees (VDC) are a central aspect of Nobo Jibon. They aid in consciousness-raising about legal rights, campaign and network to protect human rights, and mitigate domestic conflicts. One of the aspects through which the effect of VDC's role was measured is household awareness and beliefs about child protection issues. Figure X displays the results.

Figure 5 shows increases in parents' understanding of child rights. More than half of households reported an awareness of children's rights to education and health services. Significant increases were also seen in acknowledgement of rights to live with parents and to give an opinion, though less the one-quarter of households reported this. In addition, the percentage of parents who did not know any rights of children decreased from more than one-third to less than one-quarter.

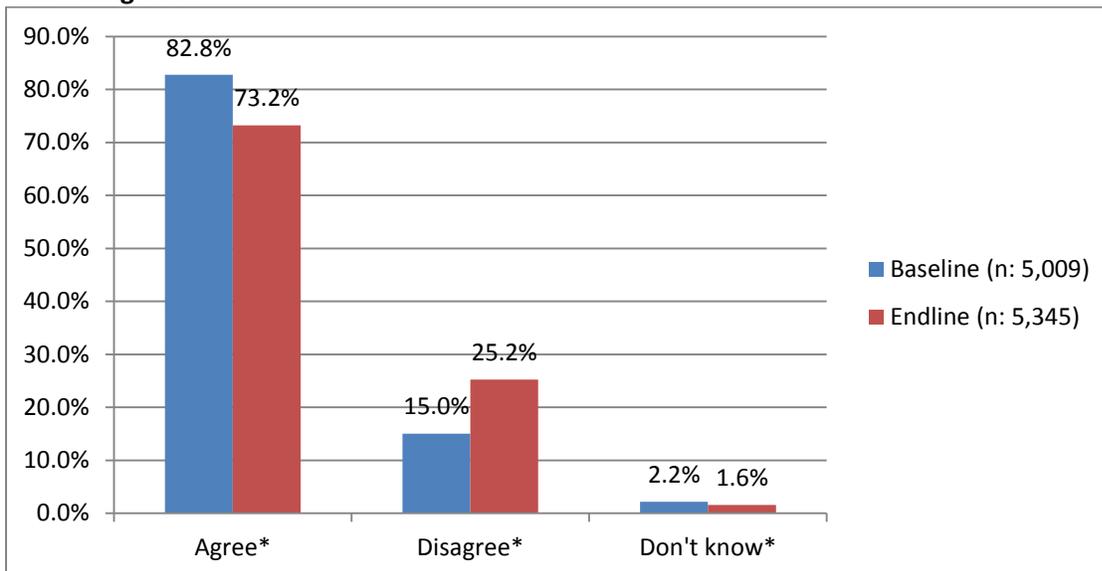
**Figure 5: Reported rights of children acknowledged by parents**



Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Figure 6 presents interesting findings to the question of whether parents believe that hitting children when they have done something bad is wrong. At endline, fewer parents agree that this is wrong (73 percent compared to 83 percent at baseline), and more parents disagree with the idea (25 percent versus 15 percent). Both differences were significant, suggesting that more parents believe it is OK to hit a child when they have done something bad.

**Figure 6: Percentage of responses to the question: "Is it wrong to hit children whenever they do something bad?"**

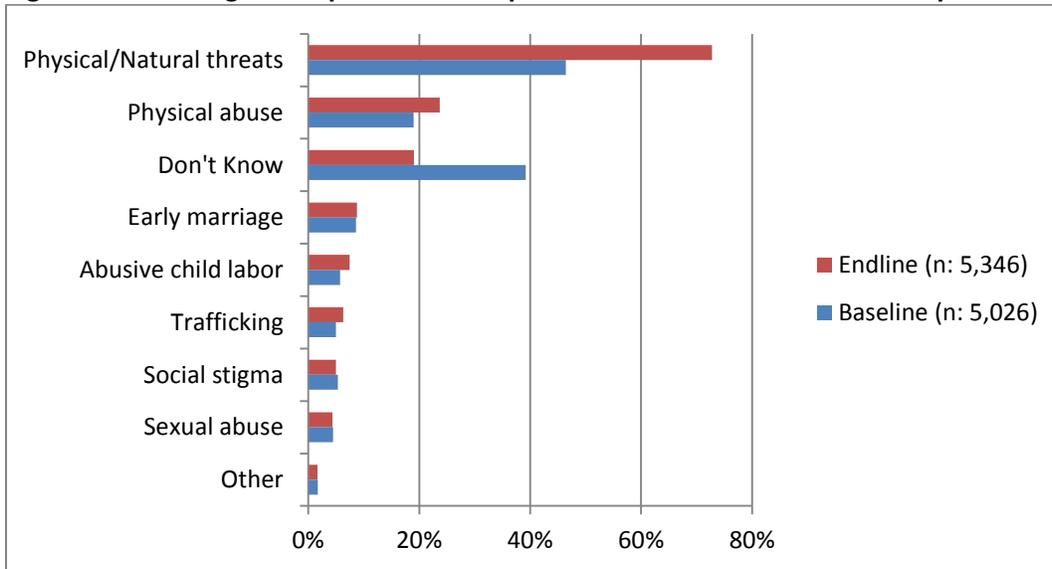


Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

Figure 7 shows several conditions and whether parents believe children should be protected from these. Nearly three-quarters of parents understood that children have the right to be protected

from physical natural threats at endline, compared to less than half of parents at baseline. Acknowledgement of protection from physical abuse also increase slightly, though remained at less than one-quarter of parents. Less than 20 percent of parents reported that they did not know any condition from which children need protection, down from almost 40 percent at baseline. Other areas where little or no change was reported include early marriage, abusive child labor, trafficking, social stigma, and sexual abuse.

**Figure 7: Percentage of responses to the question: "What children should be protected from?"**



Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

#### 4. Summary

The purpose of the final QPE survey is to measure changes in project impact and outcome indicators over the life of the Nobo Jibon project, in order to assess the extent to which project objectives have been achieved, measure the overall impacts on populations in the project areas, assess the assumed causal pathways linking project activities to outcomes and impacts, and determine how interventions contributed to achieving project goals.

Comparison of baseline with endline values demonstrates that the Nobo Jibon project surpassed targets for all SO1 and SO2 impact indicators measuring household nutrition and food security status. In particular, the endline values for all anthropometric indicators, HFIAS, CSI, HDDS, MAHFP exceeded the target values for these indicators. The results for the SO3 impact indicators are less favorable; the percent of households with plans to protect lives and assets during a disaster actually decreased by almost 20 percent from baseline to endline. However, the other SO3 impact indicators either remained constant or improved slightly from baseline to endline.

In addition, substantial improvements in project outcome indicators were recorded, with improvements in indicators measuring knowledge and adoption of recommended practices increased, although generally the targeted values were not achieved for many of the outcome indicators. The percent of households reporting adoption of recommended IYCF practices and other child care practices, child caregiver practices, diets and treatments of PLWs all increased from baseline to endline survey rounds. These changes in practices are consistent with the dramatic improvements in the SO1 and SO2 outcome indicators and suggest that the assumed causal relationships between outcome and impact indicators built into the design of the Nobo Jibon project are valid. The results also suggest that the targets set for the outcome indicators were perhaps overly ambitious, since the impact level goals were achieved even though the target values of the outcome indicators generally were not met.

Looking at differences in outcomes in relation to participation in project activities, the extent to which changes in outcomes can be attributed directly to project interventions is generally not clear cut, and changes vary across the three SOs. In SO1, while there is generally a large increase in adoption of recommended practices from baseline to endline, there is little difference in adoption between households that participated in SO1 activities and those that did not participate at endline. These results point to a general adoption of improved behaviors, that may be a result of efforts of interventions of government programs or those of other organizations, or that the messages promoted by Nobo Jibon were effectively transmitted to individuals in the project area who did not participate directly in project interventions.

In the case of SO2, the relationship between participation and adoption of practices is a bit stronger. A higher proportion of SO2 participants adopted improved agricultural production and marketing practices. However, the overall proportion of sampled households that adopted these improved practices was quite small, even in the endline round.

Results from the endline survey also provide information about the extent to which project interventions were targeted toward more food insecure households. Examination of participation in the project interventions by food security category shows that the most food-insecure households participated more in all types of project interventions (SO1, SO2 and SO3) than households in the higher food security categories. The relative proportions of project participation across the food security categories, however, are not very pronounced for either SO1 or SO2, suggesting that there is no strong targeting toward food-insecure households for these intervention areas. This result is consistent with the overall programming strategies for these two SOs; SO1 support is available to all pregnant women and mothers of young children regardless of their food security status, while interventions under SO3 are intended to benefit all households within a supported community.

The results of participation by food security status under SO2 provide some evidence of targeting, as a higher proportion of households in the lowest food security category participated

in SO2 activities than those in higher categories. Again, this is consistent with the project strategy, in which these interventions are generally targeted toward more food-insecure populations. However, the project also directed some types of support to (more food-secure) larger farmers, as a means to enhance marketing opportunities and demand for agricultural labor for all households within communities.

One important thrust of the programming strategy of Nobo Jibon has been to reduce the exclusion of women and other vulnerable groups (especially children) from economic and social opportunities and to enhance the economic empowerment of women. According to information collected from women who had access to money income, their economic empowerment, as measured by decision-making authority over income and economic activities, has increased from baseline to endline, although this change is not associated with participation in project activities. One important finding from the qualitative research is that the project interventions with youth seem to have a strong and long-term impact on empowering girls and women. Important implications from this finding are that i) programming strategies directed toward youth may have strong impacts on enhancing empowerment of women, and ii) indicators of empowerment should be measured on youth.

## Annex 1: Focus Group Discussions

F = Female; M = Male; G = Girls; B = Boys

Interviewers: Golam Kabir, Mark Langworthy, Masud Rana

District	Upazila	Union	Village	Focus Group Type	#	Date (2014)	Interviewer
Barguna	Amtali	Gulishakali	Khekuyani	MCHN – PLW (8-12)	12F	11/01	GK
Barguna	Amtali	Gulishakali	Khekuyani	MCHN - Adolescents	9G, 5B	11/01	ML, MR
Barguna	Amtali	Gulishakali	Khekuyani	Livelihoods – EP	6F, 1M	11/01	ML, MR
Barguna	Amtali	Gulishakali	Khekuyani	Livelihoods – PP	7F	11/01	GK
Barguna	Amtali	Gulishakali	Khekuyani	Disaster Management – Men	6M	11/01	GK
Barguna	Amtali	Gulishakali	Khekuyani	Disaster Management – VDMC	4F, 4M	11/01	ML, MR
Patuakhali	Dashmina	Dashmina Sadar	Dashmina West	MCHN – Fathers	12M	11/02	GK
Patuakhali	Dashmina	Dashmina Sadar	Dashmina West	MCHN – VHC	10F	11/02	ML, MR
Patuakhali	Dashmina	Dashmina Sadar	Dashmina West	Livelihoods – EP	12F	11/02	GK
Patuakhali	Dashmina	Dashmina Sadar	Dashmina West	Livelihoods – PP	14M	11/02	ML, MR
Patuakhali	Dashmina	Dashmina Sadar	Dashmina West	Disaster Management – Women	12F	11/02	GK
Patuakhali	Dashmina	Dashmina Sadar	Dashmina West	Disaster Management – Youth Volunteers	11 5F 6M	11/02	ML, MR
Patuakhali	Galachipa	Rotondi Taltoli	Borochooddokani	MCHN – PLW (8-12)	11F	11/03	ML, MR
Patuakhali	Galachipa	Grammordhon	Panpotty	MCHN – Adolescents	2G, 4B	11/03	GK
Patuakhali	Galachipa	Rotondi Taltoli	Borochooddokani	Livelihoods – Women	17F, 2M	11/03	ML, MR
Patuakhali	Galachipa	Bokulbaria	Guabaria	Livelihoods – PP	1F, 4M	11/03	GK
Patuakhali	Galachipa	Rotondi Taltoli	Borochooddokani	Disaster Management – VDMC	2F, 5M	11/03	ML, MR
Patuakhali	Galachipa	Rotondi Taltoli	Borochooddokani	Disaster Management – Men	9M	11/03	GK
Barisal	Barisal Sadar	Chandramohon	Veduria	MCHN – Fathers	8F	11/04	ML, MR
Barisal	Barisal Sadar	Chandramohon	Veduria	MCHN – VHC	11F	11/04	GK
Barisal	Barisal Sadar	Chandramohon	Veduria	Livelihoods – Women	15F	11/04	GK
Barisal	Barisal Sadar	Chandramohon	Veduria	Disaster Management – Union DMC	5M 1F	11/04	ML, MR

<b>District</b>	<b>Upazila</b>	<b>Union</b>	<b>Village</b>	<b>Focus Group Type</b>	<b>#</b>	<b>Date (2014)</b>	<b>Interviewer</b>
Barisal	Barisal Sadar	Chandramohon	Veduria	Disaster Management – Women	19F	11/04	ML, MR
Barisal	Barisal Sadar	Chandramohon	Veduria	Disaster Management – Youth Volunteers	7G, 5B	11/04	GK

## Annex 2: Mean Values and Confidence Intervals for Indicator Performance Tracking Table (IPTT) Indicators

Indicator	Indicator Type	Baseline <sup>3</sup>	Endline	95% C.I. (Endline)	LOA Target
<b>Goal: Reduced food insecurity and vulnerability for 191,000 households (direct beneficiaries) in nine Upazilas of Barisal Division in southern Bangladesh over five years</b>					
Percentage of stunted (HAZ<-2) children aged 6-59 months <sup>1</sup>	<- 2SD	43.90%	35.30%	33.3 - 38.2%	39.50%
	<- 3SD	12.90%	10.00%	8.3-11.7%	11.00%
Average HH Food Insecurity Access Scale score	Impact	28.70%	19.40%	18.3 - 20.5%	25.80%
Average HH coping strategy index	Impact	13.50%	8.40%	7.8 - 8.9%	12.20%
<b>SO1 MCHN: Improved health and nutritional status of children U5 and PLW</b>					
Percentage of underweight (WAZ<-2) children aged 0-59 months <sup>1</sup>	<- 2SD	39.40%	27.30%	25.4 - 29.9%	35.50%

	<- 3SD		9.90%	5.20%	4.0 - 5.8%	8.40%
Percentage of underweight (WAZ<-2) children aged 0-23 months <sup>1</sup>	<- 2SD	Outcome	31.90%	19.50%	15.9 - 21.7%	28.70%
	<- 3SD		7.60%	4.50%	2.9 - 5.7%	6.50%
Percentage of wasted (WHZ<-2) children aged 6-59 months <sup>1</sup>	<- 2SD	Impact	15.90%	11.00%	14.4 - 17.4%	14.30%
	<- 3SD		2.00%	1.40%	1.5-2.6%	1.70%
Percentage of wasted (WHZ<-2) children aged 6-23 months <sup>1</sup>	<- 2SD	Outcome	15.10%	13.80%	10.0-16.2%	13.60%
	<- 3SD		3.00%	3.00%	1.5-4.2%	2.30%
% of children between 0 and 59 months with diarrhea during last two weeks		Impact	10.40%	7.30%	6.4 - 8.7%	9.40%

% of children between 0 and 23 months with diarrhea during last two weeks	Outcome	11.00%	9.80%	8.1 - 12.2%	7.00%
<b>IR 1.1.: PLW and care-givers of children U5 practice improved MCHN and environmental health behaviors</b>					
% of infants 0-5 months of age who are fed exclusively with breast milk <sup>2</sup>	Outcome	38.40%	44.90%	39.0 - 50.9%	65.00%
% of children 6-23 months of age who receive a minimum acceptable diet (apart from breastmilk) <sup>2</sup>	Outcome	5.80%	22.50%	19.1 - 26.1%	30.00%
% of caregivers demonstrating proper personal hygiene behaviors	Outcome	30.90%	38.10%	34.9 - 41.0%	50.00%
% of beneficiary caregivers demonstrating food hygiene behaviors	Outcome	20.20%	26.60%	23.9 - 29.2%	50.00%
% of PLW who consume food rich in iron	Outcome	31.50%	90.50%	87.9 - 93.2%	50.00%
% of PLW who consume food rich in Vitamin A	Outcome	22.30%	59.60%	55.2 - 64.0%	60.00%
% of PLW who consume food rich in Calcium	Outcome	12.20%	12.40%	8.8 - 16.0%	40.00%

% of PLW taking iron or iron folate supplements in the last 7 days	Outcome	2.10%	11.80%	8.5 - 15.1%	50.00%
% of caregivers demonstrating proper water hygiene behaviors	Outcome	43.50%	91.40%	39.3 - 47.7%	60.00%
% of beneficiary caregivers demonstrating environmental hygiene behaviors	Outcome	15.50%	29.60%	13.4 -17.5%	30.00%
% of children 6-23 months of age who received an iron rich food or iron fortified food that is specially designed for infants and young children the previous day <sup>2</sup>	Outcome	51.60%	64.60%	47.9 - 55.4%	N/A
% of beneficiary children born in the past 24 months who were put to the breast within one hour of birth <sup>2</sup>	Outcome	28.90%	41.10%	25.7 - 32.2%	N/A
% of households consuming adequately iodized salt (20-40ppm)	Outcome	76.50%	84.60%	74.2 - 78.8%	N/A

% beneficiary caregivers who practice appropriate sick child feedings methods <sup>4</sup>	Outcome	94.20%	97.10%	94.4 - 99.7%	n/a
<b>IR 1.2.: Households have improved access to integrated health, family planning and nutrition services</b>					
% of children 12-23 months who received Vitamin-A supplementation in the past 6 months	Outcome	42.30%	45.40%	37.4 - 47.3%	85.00%
% of mothers of children aged 6-23 months who received high-dose Vitamin A supplement within 8 weeks postpartum (6 weeks if not exclusively breastfeeding) in last pregnancy	Outcome	21.00%	38.20%	17.5 - 24.4%	40.00%
% of mothers attended ANC session at least 4 times during last pregnancy	Outcome	11.80%	32.90%	9.1% - 14.5%	50.00%

% of beneficiary children 12-24 months receiving antehelminth (deworming) medication in previous 6 months	Outcome	18.80%	32.80%	15.1 - 22.5%	30.00%
<b>IR 1.3. : Equity increased within households and communities</b>					
% of beneficiary women whose husband attends ANC/PNC with her <sup>5</sup>	Outcome	48.60%	40.40%	36.4 - 44.4%	75.00%
<b>SO2 Market-based Production and Income Generation: Poor and extremely poor households have increased production and income</b>					
Average HH dietary diversity score (HDDS)	Impact	4.7	5.7	5.6 - 5.7	5.5
Average HH dietary diversity score (HDDS)	Outcome	4.7	5.7	5.6 - 5.7	5.5
Average number of months of adequate household food provisioning (MAHFP)	Impact	9.4	10.4	10.3 -10.5	11
% of HHs reporting increase in production of one or more products	Outcome	38.80%	43.60%	41.5% - 45.7%	75.00%
Average annual income from sale of agricultural products	Outcome	10,521	11,646	10,720 - 12,584	12,950
Average number of income sources per HH	Outcome	2.2	2.6	2.5 - 2.6	3.0

<b>IR 2.1.: Poor households apply improved knowledge and skills for production and marketing</b>					
% of beneficiaries (farmers) using 3 or more sustainable/improved production practices.	Outcome	4.80%	6.90%	3.8 - 5.9%	50.00%
% of targeted HHs adopting improved marketing practices	Outcome	0.40%	1.90%	1.1% - 2.6%	65.00%
<b>IR 2.2.: Poor households access quality inputs, capital and markets</b>					
% of HHs bulking products for sale	Outcome	0.40%	1.80%	1.1% - 2.5%	40.00%
<b>IR 2.3.: Extremely poor households access land, water bodies, and/or productive assets</b>					
Number of extremely poor HHs using khas land/water bodies for production of crops, livestock, and fish	Output	59.70%	46.70%	44.0% - 49.9%	200.00
<b>SO3 DRR: Households in targeted communities protect their lives and assets and quickly resume livelihood activities following natural disasters</b>					
% of HHs with a feasible plan to protect human life and productive assets during disaster	Impact	45.90%	37.10%	35.0% - 39.1%	75.00%
% of HHs with no loss of life in the targeted communities in the event of a disaster.	Impact	99.40%	99.50%	99.2% - 99.7%	TBD

% of HHs with no or minimal asset loss in targeted communities in the event of disaster.	Impact	3.80%	3.80%	2.9% -4.7%	TBD
%of HHs able to resume livelihood activities within 2 weeks following a natural disaster.	Impact	73.80%	80.00%	78.2% - 81.9%	TBD
<b>IR 3.1.: Communities manage functional emergency preparedness and response plans</b>					
% of targeted HH members trained on disaster preparedness	Output	4.60%	22.00%	19.8 - 24.3%	50.00%
<b>IR 3.4.: Communities receive and respond to early warning for floods and cyclones</b>					
% of HHs that sought shelter in a timely manner during last disaster.	Outcome	24.80%	29.60%	27.2% - 32.0%	50.00%
% of HHs that received location specific cyclone warning signal with adequate lead time	Output	36.90%	47.90%	45.7% - 50.0%	75.00%

## Annex 3: Procedures for Computing Household Economic and Food Security Status Indicators

### 1. Asset Index

This index is computed by multiplying the number of each type of household asset by the index value for that particular asset type. Index values of household assets used for construction of the asset index are presented in Table A 1. A higher value of the asset index indicates that households have been able to accumulate assets over time. Households are able to accumulate assets if income is greater than the necessary expenditures to meet household subsistence requirements. Assets also provide households with a cushion to adjust to shortfalls in incomes, or sudden increases in necessary expenditures. Thus, households with a higher asset index are less vulnerable than households with lower asset index values.

<b>Asset</b>	<b>Index value</b>
Almirah	50
Table/chair/bench	10
Watch/clock	30
Cot/bed	20
Working radio	30
Working TV	100
Bicycle	100
Motorcycle	800
Phone	50
Rickshaw/van	300

### 2. Household Dietary Diversity Score (HDDS)

This indicator is computed by summing the number of different food categories reported eaten by the household in day prior to the interview. This indicator was measured as recommended by FANTA, using the following 12 food groups: cereals, tubers, legumes, dairy, meat, fish, oils, sugar, fruits, eggs, vegetables, and others. The HDDS provides a measure of a particular household's food access. A higher HDDS represents a more diverse diet, which is empirically highly correlated with a household's income level and access to food.<sup>13</sup>

### 3. Months of Adequate Household Food Provisioning (MAHFP)

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<sup>13</sup> Swindale, Anne, and Paula Bilinsky. *Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide (v.2)*. Washington, D.C.: Food and Nutrition Technical Assistance Project, Academy for Educational Development, 2006.

This indicator reflects a household's ability to obtain food from their own production, stocks, purchases, gathering, or through food transfers from relatives, members of the community, the government or donors. As a household manages its resources over the course of a year, the ability to meet its food needs may vary due to any number of factors such as inadequate crop production by the household due to poor soils or lack of labor, loss or decrease in income sources such as employment, social obligations or natural disaster. Measuring the MAHFP has the advantage of capturing the combined effects of a range of interventions and strategies, such as improved agricultural production, storage and interventions that increase the household's purchasing power.<sup>14</sup>

#### **4. Household Food Insecurity Access Scale (HFIAS)**

This indicator has been developed by FANTA, and is based on household access to food and responses to shortages in access to food over a 30-day recall period. This indicator is based on the household's: i) perceptions of uncertainty over food access in the past 30 days; ii) perceptions of insufficiency in quantity and quality of food over the past 30 days; iii) reported reductions in food intake; and iv) reported consequences of reductions in food intake. A higher value of this index indicates a higher degree of food insecurity. In tabulating the HFIAS score, a HFIAS score variable is calculated for each household by summing the codes for each frequency-of-occurrence question. The maximum score for a household is 27 (the household response to all nine frequency-of-occurrence questions was "often", coded with response code of 3); the minimum score is 0 (the household responded "no" to all occurrence questions, frequency-of-occurrence questions were skipped by the interviewer, and subsequently coded as 0 by the data analyst.) The higher the score, the more food insecurity (access) the household experienced. The lower the score, the less food insecurity (access) a household experienced. 15

#### **5. Coping Strategy Index (CSI)**

The coping strategy index is computed on the basis of a series of questions asked to respondents about how frequently they utilize a list of 12 possible strategies.<sup>16</sup> The twelve strategies are the following:

- 1) Limit portion size at meal times
- 2) Reduce number of meals eaten per day?
- 3) Borrow food or rely on help from friends or relatives?

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<sup>14</sup> Bilinsky, Paula, Anne Swindale. 2007. *Months of Adequate Household Food Provisioning (MAHFP) for Measurement of Household Food Access: Indicator Guide*. FANTA. June 2007.

<sup>15</sup> Coates, Jennifer, Anne Swindale, and Paula Balinsky. *Household food insecurity access scale (HFIAS) for measurement of food access: Indicator guide*. FANTA, August 2007.

<sup>16</sup> Maxwell, Daniel, Richard Caldwell and Mark Langworthy. "Measuring food insecurity: Can an indicator based on localized coping behaviors be used to compare across contexts?" *Food Policy*, Volume 33, Issue 6, December 2008

- 4) Rely on less expensive or less preferred foods?
- 5) Purchase/borrow food on credit?
- 6) Gather unusual types or amounts of wild food / hunt?
- 7) Have household members eat at relatives or neighbors?
- 8) Reduce adult consumption so children can eat?
- 9) Rely on casual labor for food?
- 10) Abnormal migration for work
- 11) Skip entire day without eating
- 12) Consume seed stock to be saved for next season

The frequency of adoption of each category is coded according to the following categories:

- 0 = never
- 1 = seldom
- 2 = sometimes
- 3 = often
- 4 = daily

The coded frequency response for each strategy is then weighted by the severity weight of each strategy. Average severity weights across several coping strategies conducted in countries around the world<sup>17</sup> are then applied to each coping strategy, using the following formula:

$$CSI = \sum(\text{frequency category}_i * \text{severity weight}_i) \quad i=1 \text{ to } 12$$

The severity weights are as follows:

Strategy	Severity weight
Limit portion size at meal times	2.3
Reduce number of meals eaten per day?	2.7
Borrow food or rely on help from friends or relatives?	2.5
Rely on less expensive or less preferred foods?	1.8
Purchase/borrow food on credit?	2.9
Gather unusual types or amounts of wild food / hunt?	2.9
Have household members eat at relatives or neighbors?	3.3
Reduce adult consumption so children can eat?	2.6
Rely on casual labor for food?	3.4
Abnormal migration for work	3.4
Skip entire day without eating	4.6
Consume seed stock to be saved for next season	3.6

## 6. Personal hygiene behavior

Personal hygiene practices are based on the following appropriate hand washing behaviors

- Appropriate times to wash hands:**
1. Before food preparation
  2. Before eating
  3. Before feeding children
  4. After defecation
  5. After cleaning babies bottoms
- Appropriate washing practices**
6. Use water
  7. Use soap or ash
  8. Wash both hands
  9. Rubs hands at least 3 times
  10. Dries hands by air or with clean cloth

“Proper personal hygiene behavior” is defined as following at least 8 out of these 10 practices (80%). Note that this is consistent with the definition used in the Jibon o Jibika baseline and end-line surveys.

## 7. Food hygiene behaviors

“Proper food hygiene behaviors” is defined as applying all three of the following practices: washing hands before food preparation, and washing hands before eating, washing hands before feeding children .

## 8. Water hygiene behaviors

“Proper water hygiene behaviors ” is defined as all applying all three of the following three practices: water stored at home, drinking water stored in separate containers, and water is kept covered.

## 9. Environmental hygiene behaviors

“Proper environmental hygiene behaviors” is defined as applying at least five of the six following practices:

- Use hygienic latrine (ring slab/offset latrine with water seal, covered open pit latrine, or septic latrine)
- Latrine is functioning
- Latrine shows signs of use
- Latrine (pan and slab) is clean
- Area surrounding latrine is clean
- Infants’ feces disposed of in latrines

## 10. Minimally acceptable diet

A ‘minimum acceptable diet apart from breastmilk’ is calculated as follows:

Breastfed children 6–23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day

**and**

Non-breastfed children 6–23 months of age who received at least one milk feeding and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day.

This calculation differs slightly from that described in the World Health Organization’s guidelines for assessing and measuring infant and young child feeding practices (2008), which states non-breastfed children 6–23 months of age should receive at least *two* milk feedings and have at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day.

Minimum dietary diversity is defined as receiving four or more of the following foods:

Rice, bread, porridge, other foods made from grain
Tubers: white potatoes, white yams, other foods from roots
Foods from beans, nuts, lentils
Milk or milk products
Liver, kidney, heart, fish, dried fish, seafood, any meat (chicken, beef, goat, duck, etc.)
Eggs
Pumpkin, carrots, orange sweet potatoes, dark green leafy vegetables, Ripe mangoes, ripe papayas, ripe jackfruits
Any other fruits or vegetables

## **11. Economic empowerment index**

The scores for economic empowerment are calculated by taking the mean sum of scores for individual decisions. If the response indicated that a woman made a decision alone, or jointly with her husband, the score value is one. If the response indicated that the decision was made by her husband, somebody else, or her husband and somebody else, the score value is zero. The maximum score is five.

## Annex 4: Results of Factor Analysis on Food Security Variables

WEIGHT  
OFF.

FACTOR

```

/VARIABLE HHsize assetindex_pc exp_month_pc food_share HDDS MAHFP HFIAS_index
csi_index
/MISSING LISTWISE
/ANALYSIS HHsize assetindex_pc exp_month_pc food_share HDDS
MAHFP HFIAS_index csi_index
/PRINT INITIAL EXTRACTION
/PLOT EIGEN
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/ROTATION NOROTATE
/SAVE REG(ALL)
/METHOD=CORRELATION .

```

### Factor Analysis

Communalities		
	Initial	Extraction
HHsize	1.000	.720
assetindex_pc	1.000	.371
exp_month_pc	1.000	.698
food_share	1.000	.664
HDDS	1.000	.396
MAHFP	1.000	.617
HFIAS_index	1.000	.888
csi_index	1.000	.833

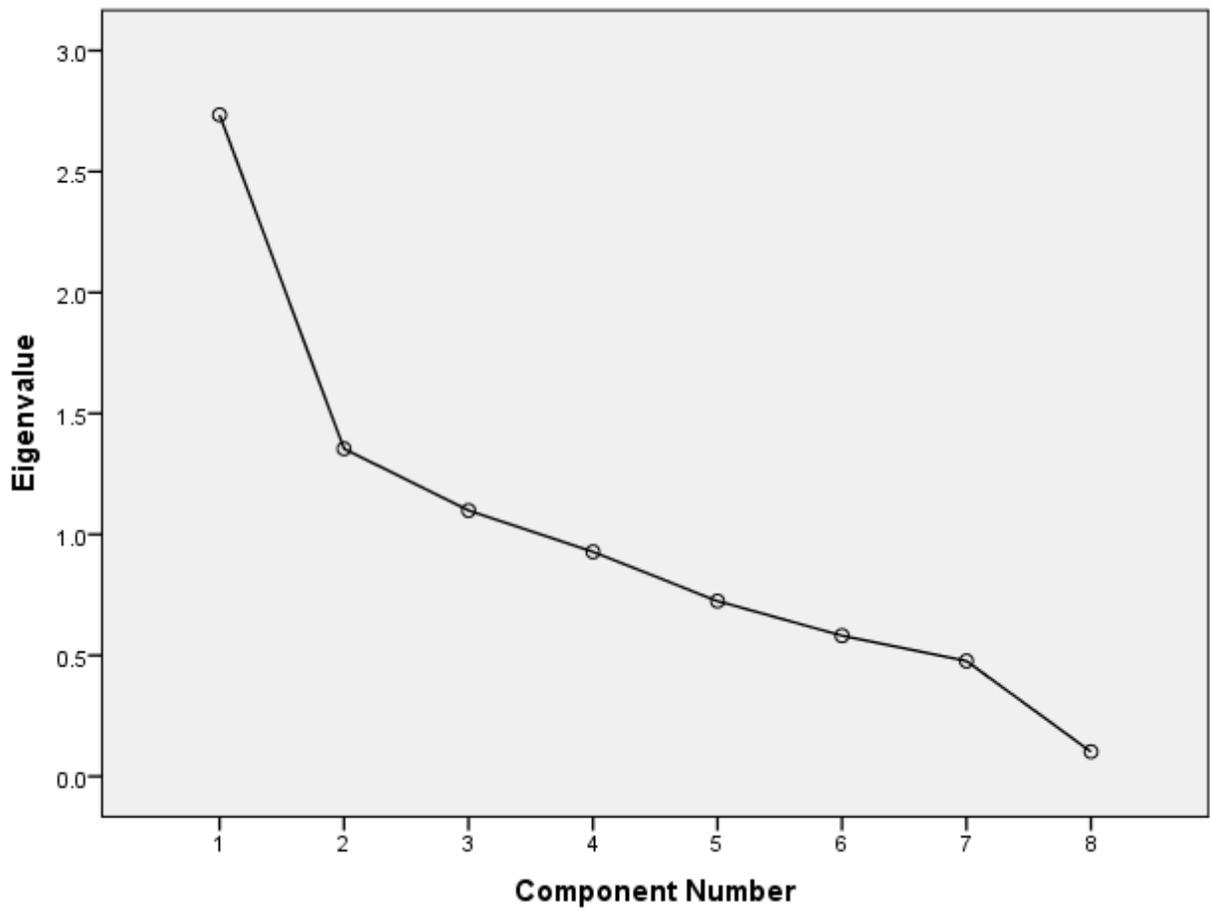
Extraction Method: Principal Component  
Analysis.

### Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.734	34.179	34.179	2.734	34.179	34.179
2	1.354	16.925	51.105	1.354	16.925	51.105
3	1.099	13.738	64.843	1.099	13.738	64.843
4	.928	11.602	76.445			
5	.724	9.054	85.499			
6	.582	7.270	92.769			
7	.477	5.958	98.728			
8	.102	1.272	100.000			

Extraction Method: Principal Component Analysis.

### Scree Plot



**Component Matrix<sup>a</sup>**

	Component		
	1	2	3
HHsize	-.186	-.184	.807
assetindex_pc	-.204	.287	-.497
exp_month_pc	-.251	.797	-.010
food_share	.302	-.695	-.298
HDDS	-.560	.099	.270
MAHFP	-.765	-.163	-.072
HFIAS_index	.911	.206	.124
csi_index	.880	.201	.136

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

**Annex 5: Nobo Jibon Baseline Survey Household Questionnaire**

**Nobo Jibon**  
**Baseline Survey Questionnaire**  
**(Quantitative Survey of Households)**

Questionnaire for Randomly Selected Households

**TANGO International**  
**and**  
**Save the Children-USA**



## 1. Household Members (household head or spouse)

Please tell the name of persons who usually live in your household (A household is a person or group of persons that usually lives and eat together and family members who lives outside visit the HH at least in every six months), starting with the head of the household.

Table1: Household Members

Line	Is (NAME) male or female?	How old is? (NAME) IF AGE LESS THAN 1 YEAR WRITE '00'	If aged 10 years or more: Educational Status	If aged 10 years or more: Professions
101	102	103	104	105
01	M 1    F 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
02	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
03	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
04	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
05	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
06	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
07	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
08	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
09	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
10	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
11	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
12	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
13	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
14	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
15	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
16	1    2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

(Interviewer: Please note the **line number** of children <5)

Are there any more household members (Yes/no)

If yes, how many more members? \_\_\_\_\_-

### CODE LIST: Profession and Education

#### Profession

01 = Do not work  
 02 = Household work  
 03 = Service  
 04 = Business  
 05 = Agriculture/ Farming  
 06 = Poultry  
 07 = Fish farming  
 08 = Daily wage earner  
 09 = Teacher

10 = Private Tutor  
 11 = Rickshaw/Van/Boat man/Driver  
 12 = Carpenter  
 13 = Weaver  
 14 = Cattle rearing  
 15 = Fisherman  
 16 = Tailor  
 17 = Others (Specify)

#### Education

01 = Illiterate  
 02= Can sign  
 03= Primary  
 04= Under SSC  
 05= SSC/Dhakhil  
 06= HSC/Alim  
 07= Bahelor/Fazil  
 08= Masters/Kamil  
 09= Others



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	Pensions (all types) Begging Rental income Professional (doctor, lawyer) Help from relative Money lending Other	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (Tk.) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox">(Tk.)  <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox">(Tk.) </input></input></input></input></input>	
206	What is your HHs monthly expenditure? (Approximately)	House rent... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"><input type="checkbox"/>(Tk.)  Food ..... <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox">(Tk.)  Utilities (electricity, gas, water,  telephone)  .....<input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"><input type="checkbox"/>(Tk.)  <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/>  <input type="checkbox"/><input type="checkbox">(Tk.)  Education ...<input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox">(Tk.)  Transport....<input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox">(Tk.)  Medical .....<input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox">(Tk.)  Loan repayment<input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox">(Tk.)  Others..... <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox">(Tk.) </input></input></input></input></input></input></input></input></input>	
207	Does your household have access to khash land	Yes ..... 1 No ..... 2	→209
208	What is Khash land used for ?	Living house Garden Cultivable land Forest Rent out Other	
209	Does your household have access to water bodies	Yes ..... 1 No ..... 2	→301
210	What are water bodies used for?	Fish Rent out Other	

### 3. Agriculture (household head)

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
301	Does your household own cultivable land(including homestead land)?	Yes ..... 1 No ..... 2	2 →316
302	How much cultivable land does your household own (including homestead land)?	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> (Exact in decimals)	
303	Did you have any agricultural production in the last year (including gardening)?	Yes ..... 1 No ..... 2	2→316
304	How did agricultural production change last year compared to the year before?	Increased ..... 1 Stayed the same ..... 2 Decreased ..... 3 Mixed..... 4 Don't know ..... 5	1- →305 2- →307 3- →306 4→307 5→307
305	Reasons for increase  (Multiple response)	More land farmed ..... 1 Better growing conditions ... 2 Better seed ..... 3 More inputs used (fertilizer, etc) ..... 4 Improved irrigation..... 5 Response to higher prices .... 6 Improved knowledge and skills..... 7 Support from NGOs ..... 8 Improved pest management. 9 other ..... 10	Skip →307
306	Reasons for decrease  (Multiple response)	Less land farmed..... 1 Bad growing conditions..... 2 Poorer seed ..... 3 Fewer inputs available..... 4 Response to lower price..... 5 Less irrigation ..... 6 Natural disaster ..... 7 Death/illness of family member(s)..... 8 pests ..... 9	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		other ..... 10	
307	Did your household sell any agricultural crops in the last year?	Yes ..... 1 No ..... 2	2→ 313
308	If yes, what was value of sales?	<input type="text"/> (Tk.)	
309	How has the value of agricultural sales of your household changed in the last 3 years?	Increased ..... 1 Stayed the same ..... 2 Decreased ..... 3 Don't know ..... 4	1→310 2→312 3→311 4→312
310	Reasons for increased sales  (Multiple response)	Less consumption by household..... 1 Greater area farmed ..... 2 Improved irrigation..... 3 Better seed varieties..... 4 Higher market prices ..... 5 Better market access ..... 6 Sale through farmers group . 7 Improved/lower cost transportation..... 8 Improved knowledge and skills..... 9 Improved pest management.... 10	Skip →312
311	Reasons for decreased sales  (Multiple response)	More consumption by household..... 1 Decreased area farmed ..... 2 Flood..... 3 Drought..... 4 Lower market prices ..... 5 Less access in the market .... 6 Unavailability/high cost transport..... 7 Lack of irrigation..... 8 Lack/high price of quality seed ..... 9 Pests..... 10 other..... 11	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
312	<p>To whom did you sell agricultural products in the last year? (Multiple response)</p>	<p>Neighbor/relatives/individuals ..... 1 Local market ..... 2 Trader ..... 3 Itinerant buyers ..... 4 Cooperative/farmer group .... 5 Local Broker ..... 6 NGOs ..... 7 Company ..... 8 Collection point ..... 9 Other ..... 10</p>	
313	<p>Which of the following agricultural practices do you apply on your farm/garden?  (Multiple response)</p>	<p>Animal manure ..... 1 Compost ..... 2 Crop rotation ..... 3 Chemical fertilizer ..... 4 Biological/organic pest control ..... 5 Mechanical pest control ..... 6 Chemical pest control ..... 7 Integrated pest management ..... 8 Treadle pump/drip irrig/mobile pump ..... 9</p>	
314	<p>Have you received agricultural inputs from any of the following?  Multiple response</p>	<p>Local Market ..... 1 Itinerant Merchants ..... 2 NGOs ..... 3 GOB ..... 4 Companies ..... 5 Cooperative/farmer group .... 6 Village Development Committee ..... 7 Neighbor/relatives/individuals ..... 8 Trained input retailers ..... 9 Other ..... 10 None ..... 11</p>	
315	<p>Have you received any training or technical support related to agriculture/gardening from any of the following?</p>	<p>GoB office (BADC, BARI).. 1 NGO ..... 2 Seed company ..... 3 Others (specify) ..... 4</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	(Multiple response)	No training..... 5	
316	Did you have any livestock production in the last year?	Yes ..... 1 No ..... 2	2→321
317	How many of each of the following types of animals do you currently have? 1. Cows/buffalos 2. Goats/sheep 3. Chickens/ducks 4. Geese 5. Pigeon	Number <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
318	How did livestock production change last year compared to the year before?	Increased ..... 1 Stayed the same ..... 2 Decreased ..... 3 Mixed..... 4 Don't know ..... 5	1→319 2→321 3→320 4→321 5→321
319	Reasons for increase	Acquired more animals ..... 1 Improved breeds ..... 2 Better feed ..... 3 Less disease ..... 4 Response to better price..... 5 Improved knowledge ..... 6 Support from NGOs ..... 7 Vaccination..... 8 Other ..... 9	Skip →321
320	Reasons for decrease	Death/disease of animals .... 1 Animal stolen/lost..... 2 Loss of land ..... 3 Response to lower prices..... 4 Disaster ..... 5 Lack/high cost of feeds..... 6 Lack of vaccine..... 7 Other ..... 8	
321	Did you have any Fish production in the last year?	Yes ..... 1 No ..... 2	2→401
322	How did Fish production change last year compared to the year before?	Increased ..... 1 Stayed the same ..... 2 Decreased ..... 3	1→323 2→401 3→324

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		Mixed..... 4 Don't know ..... 5	4→401 5→401
323	Reasons for increase	Better varieties of fingerlings 1 Lower cost fingerlings ..... 2 Improved knowledge ..... 3 Response to higher price ..... 4 Improved access to market ... 5 Support from NGOs ..... 6 Improved access/lower cost of feed ..... 7 Increased access to water bodies..... 8 Less disease ..... 9 More fingerlings ..... 10 other..... 11	Skip →401
324	Reasons for decrease	Less Access/Higher cost fingerlings..... 1 Response to lower price..... 2 Less access/higher cost of feed ..... 3 Less access to water bodies .. 4 More disease ..... 5 Natural disaster ..... 6 Lower quality fingerlings ..... 7 Other ..... 8	

#### 4. Natural Disaster Preparedness (household head

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
401	What was the most recent type of natural disaster experienced in this area?	Cyclone ..... 1 Flood ..... 2 Earthquake ..... 3 River erosion ..... 4 Other (specify) ..... 5 No disaster ..... 5	5 → 416
402	How long after the disaster did return to your home and start normal life?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> days	
403	Did anyone in your HH die in last disaster (SIDR)?	Yes ..... 1 No ..... 2	
404	Did you lose any of the following? [Multiple response]	House Livestock Documents Productive assets Household items Cash/jewelries	
405	Did you receive any early warning signal/message before the last natural disaster (you had in your area)?	Yes ..... 1 No ..... 2	2 → 408
406	How long before the disaster did you receive the warning signal message?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> hours	
407	Who gave the early/signal message? [Multiple response]	CPP volunteers ..... 1 Radio ..... 2 Television ..... 3 Union parishad ..... 4 NGOs ..... 5 Mosque miking ..... 6 Neighbor/relatives ..... 7 Other (Specify) ..... 8	
408	Did you move to another place to take shelter before the last natural disaster?	Yes ..... 1 No ..... 2	1 → 410
409	If no, why not?	No shelter No space available in the shelter Shelter not functional Did not receive messages No transport	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		Did not want To protect home/assets Live in protected house Others	
410	Where did you move to take shelter before the last natural disaster?  <b>(Bold type indicates disaster-proof shelters)</b>	<b>'Pacca' House (cement) .....</b> 1 'Kacha' house ..... 2 <b>Cyclone or flood shelter .....</b> 3 Union parishad building..... 4 School/institution building..... 5 Boat ..... 6 Highways/ Embankment ..... 7 Raised hillock..... 8 Mosque/Temple/Church ..... 9 Other (SPECIFY) ..... 10	
411	How long before the disaster did you move to the shelter? (if during the disaster, enter 0 hours)	<input type="text"/> <input type="text"/> <input type="text"/> hours	
412	How far and long did it take you to go to the shelter centre for disaster?	How far ..... km <input type="text"/> <input type="text"/> Long .... Hrs. <input type="text"/> <input type="text"/> Mins. <input type="text"/> <input type="text"/>	
413	After the last natural disaster, did you receive any assistance?	Yes ..... 1 No..... 2	2→416
414	What did you receive?  (Multiple response)	Food ..... 1 Water..... 2 Clothing..... 3 Housing..... 4 Money ..... 5 Medicine ..... 6 HH utensils..... 7 Others ..... 8	
415	When did you receive food and water?	Just after the cyclone..... 1 After 1 days..... 2 After 2 days..... 3 After 3 days..... 4 More than 3 days..... 5	
416	Are you aware of any members of the community trained to help you during disaster?	Yes ..... 1 No..... 2	2→418
417	Who are they?	CPP volunteers..... 1 Union parishad	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	(Multiple response)	chairman/member ..... 2 NGOs ..... 3 Teacher..... 4 Students..... 5 Village leaders ..... 6 Village Development Committee..... 7 Union volunteers ..... 8 Other (specify) ..... 9	
418	Have you or any member of your HH received any disaster preparedness training?	Yes ..... 1 No..... 2	2→420
419	Who provided the training?	CPP volunteers..... 1 Union parishad chairman/member ..... 2 NGOs ..... 3 Teacher..... 4 Students..... 5 Village leaders ..... 6 Village Development Committee..... 7 Other (specify) ..... 8	
420	What do you plan to with your household members in the event of a disaster (cyclone/flood)?	Don't know ..... 1 Evacuation of vulnerable HH members ..... 2 Visit shelter centers in normal time ..... 3 Identify safe shelter center .... 4 Plan for dry food ..... 5 other ..... 6 No plan ..... 7	
421	What do you plan to do with your livestock if a disaster strikes?	Don't know ..... 1 Identify safe shelter for livestock ..... 2 Arrange feed for disaster..... 3 Assign a person responsible... 4 other ..... 5 No plan..... 6	
422	How do you plan to protect your HH valuables/assets in case of disaster?	Don't know ..... 1 Arrangements to store assets	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		safely ..... 2 Assign a person responsible... 3 other ..... 4 No plan ..... 5	

**5. Food Security (wife, caregiver)**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES
501	<p>I would like to ask you about the types of foods that you or anyone else in your household ate yesterday during the day and at night:</p> <p>Any:</p> <ol style="list-style-type: none"> <li>1. Cereals (rice, noodles, bread)</li> <li>2. Roots/Tubers (cassava, potatoes, sweet potatoes, plantains)</li> <li>3. Legumes/Pulses (beans, peas, groundnuts, cashews)</li> <li>4. Dairy products (milk, yogurt, cheese)</li> <li>5. Meat (beef, offal, Poultry, mutton)</li> <li>6. Fish/seafood</li> <li>7. Oils, fats, butter, Ghee</li> <li>8. Sugar/honey</li> <li>9. Fruits</li> <li>10. Eggs</li> <li>11. Vegetables</li> <li>12. Others</li> </ol>	<p>Cereals ..... <input type="checkbox"/></p> <p>Roots/Tubers ..... <input type="checkbox"/></p> <p>Legumes/Pulses ..... <input type="checkbox"/></p> <p>Dairy products ..... <input type="checkbox"/></p> <p>Meat/poultry/offal ..... <input type="checkbox"/></p> <p>Fish/Sea food ..... <input type="checkbox"/></p> <p>Oils/fat ..... <input type="checkbox"/></p> <p>Sugar/honey ..... <input type="checkbox"/></p> <p>Fruits ..... <input type="checkbox"/></p> <p>Eggs ..... <input type="checkbox"/></p> <p>Vegetables ..... <input type="checkbox"/></p> <p>Others ..... <input type="checkbox"/></p>
502	<p>What type of salt does your HH consume regularly?</p>	<p>Packet salt (observe) ..... 1</p> <p>Loose ..... 2</p>
503	<p>In the past 12 months, were there months in which you did not have enough food to meet your family's needs?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p>
504	<p>If yes, which were the months (in the past 12 months) in which you did not have enough food to meet your family's needs?</p> <p>[Multiple response]</p>	<p>January ..... 1</p> <p>February ..... 2</p> <p>March ..... 3</p> <p>April ..... 4</p> <p>May ..... 5</p> <p>June ..... 6</p> <p>July ..... 7</p> <p>August ..... 8</p> <p>September ..... 9</p> <p>October ..... 10</p> <p>November ..... 11</p> <p>December ..... 12</p>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES
505	In the past four weeks did you worry that your household would not have enough food?	Rarely (once or twice in past 4 weeks)..... 1 Sometimes (3-10 times in past 4 weeks)..... 2 Often (> 10 times in past 4 weeks)..... 3 Never ..... 4
506	In the past 4 weeks were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	Rarely (once or twice in past 4 weeks)..... 1 Sometimes (3-10 times in past 4 weeks)..... 2 Often (> 10 times in past 4 weeks)..... 3 Never ..... 4
507	In the past 4 weeks did you or any household member have to eat a limited variety of foods due to a lack of resources?	Rarely (once or twice in past 4 weeks)..... 1 Sometimes (3-10 times in past 4 weeks)..... 2 Often (> 10 times in past 4 weeks)..... 3 Never ..... 4
508	In the past 4 weeks did you or any household member have to eat some foods that you really did not want to eat because of lack or resources to obtain other kinds of food?	Rarely (once or twice in past 4 weeks)..... 1 Sometimes (3-10 times in past 4 weeks)..... 2 Often (> 10 times in past 4 weeks)..... 3 Never ..... 4
509	In the past 4 weeks did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	Rarely (once or twice in past 4 weeks)..... 1 Sometimes (3-10 times in past 4 weeks)..... 2 Often (> 10 times in past 4 weeks)..... 3 Never ..... 4
510	In the past 4 weeks did you or any household member have to eat fewer meals in a day because there was not enough food?	Rarely (once or twice in past 4 weeks)..... 1 Sometimes (3-10 times in past 4 weeks)..... 2



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES			
	relatives?	5			
	Rely on less expensive or less preferred foods?	1	2	3	4
	Purchase/borrow food on credit?	5			
	Gather unusual types or amounts of wild food / hunt?	1	2	3	4
	Have household members eat at relatives or neighbors?	1	2	3	4
	Reduce adult consumption so children can eat?	1	2	3	4
	Rely on casual labor for food?	5			
	Abnormal migration for work	1	2	3	4
	Skip entire day without eating	5			
	Consume seed stock to be saved for next season	1	2	3	4
		5			
		1	2	3	4
		5			
		1	2	3	4
		5			
		1	2	3	4
		5			

### 6. Safe Water, Sanitation, and Hygiene practices [Ask caregiver of children]

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	What are the main sources of water for drinking for your household?	Deep tube well ..... 1 Shallow tube well ..... 8 Pond sand filter ..... 2 Rainwater harvesting system 3 Rainwater ..... 4 Pond ..... 5 River/canal ..... 6 Traditional well..... 7 Others (Specify)..... 9	1,8→602  2-7,9 →604
602	Has the tube well you use been tested to see if its water has arsenic? [avoid of water source not tubewell, skip to water storage	Tested..... 1 Not tested ..... 2 Don't know ..... 3	2,3→604
603	Is the tube well marked red or green? (Observe)	Green..... 1 Red ..... 2 Not marked ..... 3	
604	Do you store water in your home?	Yes ..... 1 No ..... 2	2→607
605	Do you collect and store drinking water in separate container?	Yes ..... 1 No ..... 2	2→607
606	Is the water kept covered? (observe)	Yes ..... 1 No ..... 2	
607	What type of latrine does your household use?  ( <b>Bold type indicates hygienic types</b> )	<b>Ring-slab/offset latrine (water seal)</b> ..... 1 <b>Pit latrine (covered)</b> ..... 2 Ring-slab/offset latrine (water seal broken) ..... 3 Pit latrine (uncovered) ..... 4 <b>Septic latrine</b> ..... 5 Hanging/open latrine ..... 6 No toilet facility ..... 7	6,7→615
608	Is it your own latrine?  <b>Interviewer: Observe the latrine</b>	Yes ..... 1 No ..... 2	
609	Do you use this latrine?	Yes ..... 1 No ..... 2	
610	When family members are at home, where do	Male:                      Female:	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES		SKIP
	your family members > age 5 go to defecate?	Latrine..... 1	Latrine ..... 1	
		Outside..... 2	Outside ..... 2	
611	Where do you dispose of your children's feces?	Latrine..... 1	Latrine ..... 1	
		Outside..... 2	Outside ..... 2	
		Not applicable ..... 3		
612	<b>Interviewer: Observe the following instruction</b> 2.1.2 Is the latrine functioning? 2.1.2 Does the latrine show the sign of use? 2.1.2 Is the latrine (pan & slab) itself clean? 2.1.2 Is the surrounding area of the latrine clean?			
		Latrine functioning ..... 1 ... 2		
		Shows the sign of use ..... 1 ... 2		
		Latrine itself clean ..... 1 ... 2		
		Surrounding area is clean 1 ... 2		
613	When do you wash your hands?  <i>(Multiple response possible. DO NOT read the choices but probe and mark all that)</i>	Yes No Before food preparation .. 1 Before eating..... 1 Before feeding children .. 1 ..... 2 After defecation..... 1 ..... 2 After cleaning babies bottoms ..... 1 ..... 2 Others..... 1 ..... 2 (specify)		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
614	<p>Can you show me how you wash your hands?</p> <p><b>(Go to hand washing site and observe hand washing technique that is demonstrated)</b></p> <p><b>(Multiple responses)</b></p>	<p>Yes No</p> <p>Uses water..... 1 ..... 2</p> <p>Soap/cleaning agent ..... 1 ..... 2</p> <p>Ash..... 1 ..... 2</p> <p>Washes both hands ..... 1 ..... 2</p> <p>Rubs hands at least 3 times</p> <p>Dries hands by air ..... 1 ..... 2</p> <p>Dries hands with a clean cloth ..... 1 ..... 2</p> <p>Others (specify) ..... 1 ..... 2</p> <p>Refused to demonstrate .. 1 ..... 2</p>	

**7. Mothers/caregivers of children under 5 years:**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	Do you have any children under 24 months or are you currently pregnant?	<p>Yes ..... 1</p> <p>No..... 2</p>	
702	How old are you? (mother/care-giver of U5 in HH)	Age (in completed years) <input type="text"/> <input type="text"/>	
703	Did you ever attend school/madrassa?	<p>Yes ..... 1</p> <p>No..... 2</p>	2→706
704	Was it a primary school, madrasa, secondary school or higher that you attended last?	<p>Primary ..... 1</p> <p>Madrasa ..... 2</p> <p>Secondary School..... 3</p> <p>College/University ..... 4</p> <p>Others ..... 5</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		(Specify)	
705	What was the highest class you passed?	Class .....	
706	Are you now married, widowed, divorced, or separated?	Never married..... 1 Currently married ..... 2 Widowed ..... 3 Divorced ..... 4 Separated ..... 5 Deserted..... 6	
707	Aside from doing normal household work, do you do any other work on a regular basis for which you are paid in cash or in kind or in both?	Yes ..... 1 No..... 2	2→710
708	What do you do for your earning? (Multiple response)	Handicrafts/Handloom .. 1 Agri/Farmer ..... 2 Work in other household3 Services ..... 4 Business ..... 5 Poultry ..... 6 Daily wage earner ..... 7 Private tutor ..... 8 Others (Specify) ..... 9 No income earnings..... 10	
709	How much do you generally earn a month from the activities you do?	Monthly earning <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (Tk.)	
710	Who usually makes decisions about how to spend the cash income you earn?	Husband .....1 Wife.....2 Husband and wife jointly .....3 Somebody else .....4 Husband and somebody else jointly 5	
711	Who usually	Husband .....1	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	makes decisions about making major household purchases?	Wife.....2 Husband and wife jointly .....3 Somebody else .....4 Husband and somebody else jointly 5	
712	Who usually makes decisions about purchases for daily household needs?	Husband .....1 Wife.....2 Husband and wife jointly .....3 Somebody else .....4 Husband and somebody else jointly 5	
713	Who usually makes decisions about visits to your family or relatives?	Husband .....1 Wife.....2 Husband and wife jointly .....3 Somebody else .....4 Husband and somebody else jointly 5	
714	Who usually makes decisions about your children's health care?	Husband .....1 Wife.....2 Husband and wife jointly .....3 Somebody else .....4 Husband and somebody else jointly 5	
715	Are you currently pregnant? (Avoid if 701=2, skip to 800)	Currently pregnant .....1 Not currently pregnant .....2 Don't know .....3	2,3→712
716	How many months have you been pregnant for?	Month(s)..... <input type="text"/> <input type="text"/>	
717	Did you have any antenatal check-ups during your <b>(current/ last)</b> pregnancy?	Yes .....1 No.....2	2→717
718	How many check-ups did you have during your <b>(current/last)</b> pregnancy?	Number of visits..... <input type="text"/> <input type="text"/>	
719	Do you have an	Yes, Seen.....1	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	antenatal card for your <b>(current/last)</b> pregnancy? IF Yes: May I see it please?	Yes, Not Seen.....2 No Card .....3	
720	<b>Interviewer:</b> <b>Verify Number of Antenatal Visits</b>  Is the number of documented visits in the card different than the stated number of visits in Q204	Same as stated .....1 Different than stated.....2 Note number of documented visits..... <input type="checkbox"/> <input type="checkbox"/>	
721	Where did you receive ANC services?	Hospital/Medical college .....1 Upazila Health Complex .....2 Satellite/EPI outreach centre 3 MCWC .....4 FWC .....5 FWV .....6 FWA .....7 NGO Static clinic .....8 NGO Satellite clinic .....9 NGO Field worker .....10 NGO Hospital .....11 VHC (village health committee CHV .....12 Clinic/Hospital .....13 MBBS Doctor .....14 Village doctor .....15 Homeopathic doctor .....16 Pharmacy.....17 <b>Other Sector:</b> Friend/Relative .....18 Neighbor .....19 Others (Specify) .....20	
722	Did your husband	Yes .....1	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	accompany you on any of your visits	No.....2	
723	Did you receive Vita-A after delivery of the child? (Interviewer: shows her the Vit-A capsule)	Yes .....1 No.....2	2→719
724	After how many days of the delivery you received Vit-A?	..... <input type="checkbox"/> <input type="checkbox"/> Days	
725	Do you have a child of age <6 months?	Yes .....1 No.....2	



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
727	Have you taken Iron/Iron folate in the last 7 days? (Interviewer: show her the iron/iron folate tablet or capsule)	Yes .....1 No.....2	

### 8. Individual Child Related Questions

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
800	Do you have any children under 5?	Yes .....1 No .....2	2→901
801	Name of the youngest child		
802	Sex of the youngest child	<input type="checkbox"/> Male=1, Female=2	
803	Age of the youngest child	<input type="checkbox"/> <input type="checkbox"/> Months	
804	Did you ever breastfeed (NAME)? <i>[avoid if U5 child code &gt;1 and age &gt;6 months, skip to 815]</i>	Yes .....1 No .....2	2→812
805	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS.	HOURS..... 1 <input type="checkbox"/> <input type="checkbox"/>	
806	Did you give (NAME) the colostrum (the first milk which is yellow sticky fluid secreted the few days after delivery)?	Yes .....1 No .....2 Don't know .....3	
807	Did you give anything to (NAME) before the first breast milk?	Yes .....1 No .....2 Don't know .....3	
808	Did you give anything to (NAME) after starting breastfeeding? (Within 24 hours after starting breastfeeding) (Up to 3 responses allowed)	No .....1 Milk (goat/cow/powder) .....2 Baby formula .....3 Water/sugar water/honey .....4 medicine .....5	
809	Was (NAME) breastfed yesterday during the day or night?	Yes .....1 No .....2 Don't know .....3	
810	Did (NAME) have any of the following liquids yesterday during the day or night?	Plain water .....1 Sugar water .....1	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP															
	(Up to 5 responses allowed)	Infant formula..... 1 Tinned, powdered, fresh animal milk..... 1 Juice, juice drink, green coconut ..... 1 yogurt..... 1 ORS ..... 1																
811	At any time yesterday or last night, was (NAME) given any liquid or solid food with breastfeeding?	Yes ..... 1 No ..... 2																
812	How many times yesterday or last night, was (NAME) given any of the following: (up to 10 responses allowed) <ol style="list-style-type: none"> <li>1. rice, bread, porridge, other foods made from grain</li> <li>2. Pumpkin, carrots, orange sweet potatoes</li> <li>3. White potatoes, white yams, other foods from roots</li> <li>4. Dark green leafy vegetables</li> <li>5. Ripe mangoes, ripe papayas, ripe jackfruits</li> <li>6. any other fruits or vegetables</li> <li>7. liver/kidney/heart</li> <li>8. any meat (chicken, beef, goat, duck, etc.)</li> <li>9. Eggs</li> <li>10. Fish, dried fish, seafood</li> <li>11. foods from beans, nuts, lentils</li> <li>12. milk or milk products</li> <li>13. oils, fats, butter, ghee</li> <li>14. sugary foods such as chocolates, candies, pastries, cakes, biscuits</li> <li>15. other</li> <li>16. nothing</li> </ol>	Number of Times <table style="margin-left: auto; margin-right: auto;"> <tr><td><input type="checkbox"/></td></tr> </table>	<input type="checkbox"/>															
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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
813	Yesterday during the day or night, how many times did (NAME) eat solid, semi-solid, or soft foods (foods other than liquids) at home or outside the home? (don't know =99)	<input type="checkbox"/> <input type="checkbox"/>	
814	Yesterday during the day or night did (NAME) drink anything from a bottle with a nipple?	Yes ..... 1 No ..... 2 Don't know ..... 3	
815	Yesterday during the day or night did (NAME) consume any food to which you added a nutrient powder (sprinkles/Monimix)?	Yes ..... 1 No ..... 2 Don't know ..... 3	
816	Did (NAME) receive a BCG vaccination against tuberculosis, that is, an injection in the left shoulder that caused a scar?	YES..... 1 NO ..... 2 DON'T KNOW ..... 3	
817	Did (NAME) receive a polio vaccine that is, drops in the mouth?	YES..... 1 NO ..... 2 DON'T KNOW ..... 8	2,3→819
818	How many times did (NAME) receive polio vaccine: From clinic? From NID?	TIMES FROM CLINIC .... <input type="checkbox"/> TIMES FROM NID..... <input type="checkbox"/>	
819	Did (NAME) receive a DPT vaccination, that is, an injection given in the thigh or buttocks, sometimes at the same time as polio drops?	YES..... 1 NO ..... 2 DON'T KNOW ..... 8	2,3→821
820	How many times?	NUMBER OF TIMES ..... <input type="checkbox"/>	
821	An injection to prevent measles after 9 months of age?	YES..... 1 NO ..... 2 DON'T KNOW ..... 8 Not Applicable..... 8	
822	Has (NAME) received a vitamin A capsule like this in the last 6 months? <i>[avoid if age not 12-23 months, skip to diarrhea]</i> <b>Interviewer: Show Vitamin A Capsule</b>	Yes ..... 1 No ..... 2 Don't know ..... 3	
823	Has (NAME) received antehelminth	Yes ..... 1	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	(Deworming) within the last 6 months? <i>[avoid if age not 12-23 months, skip to xxx]</i>	No ..... 2 Don't know .....3	
824	Has (NAME) suffered from fever in the last 15 days?	Yes ..... 1 No ..... 2	2 →821
825	Did you seek advice/treatment for the fever of (NAME)?	Yes ..... 1 No ..... 2	2 → 821
826	Where did you first seek treatment/advice for the fever of (NAME)?	Hospital/Medical college ..... 1 Upazila Health Complex ..... 2 Satellite/EPI outreach centre 3 MCWC ..... 4 FWC ..... 5 FWV ..... 6 FWA ..... 7 Static clinic ..... 8 Satellite clinic ..... 9 Field worker ..... 10 Hospital..... 11 CHV ..... 12 Clinic/Hospital..... 13 MBBS Doctor ..... 14 Village doctor ..... 15 Homeopathic doctor ..... 16 Pharmacy ..... 17 Friend/Relative ..... 18 Neighbor ..... 19 Others (Specify) ..... 20	
827	Has (NAME) suffered from cough/cold in the last 15 days?	Yes ..... 1 No ..... 2	2 →824
828	Did you seek advice/treatment for the cough/cold of (NAME)?	Yes ..... 1 No ..... 2	2→824
829	Where did you first seek treatment/advice for the cough/cold of (NAME)?	<b>Public Sector:</b> Hospital/Medical college ..... 1 Upazila Health Complex ..... 2 Satellite/EPI outreach centre 3 MCWC ..... 4 FWC ..... 5 FWV ..... 6 FWA ..... 7	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		<b>NGO Sector:</b> Static clinic ..... 8 Satellite clinic ..... 9 Field worker ..... 10 Hospital..... 11 CHV ..... 12 <b>Private medical sector:</b> Clinic/Hospital..... 13 MBBS Doctor ..... 14 Village doctor ..... 15 Homeopathic doctor ..... 16 Pharmacy ..... 17 <b>Other Sector:</b> Friend/Relative ..... 18 Neighbor ..... 19 Others (Specify) ..... 20	
830	Has (NAME) had diarrhea (having loose stool more than 2 times a day) in the last 2 weeks?	Yes ..... 1 No ..... 2 Don't know ..... 3	2,3 →END
831	Was (NAME) given the same amount to drink as before the diarrhea, or more, or less?	Same ..... 1 More ..... 2 Less ..... 3 Don't know ..... 4	
832	Was (NAME) given the same amount of food to eat as before the diarrhea, or more, or less?	Same ..... 1 More ..... 2 Less ..... 3 Don't know ..... 4	
833	Did you continue to breastfeed (NAME) during diarrhea? (avoid if 810 is no, skip to next question)	Continued ..... 1 Did not continue ..... 2	
834	Did you seek advice or treatment for the diarrhea of (NAME) from any source?	Yes ..... 1 No ..... 2	2→830
835	Where did you first seek treatment/advice for the diarrhea of (NAME)?	<b>Public Sector:</b> Hospital/Medical college ..... 1 Upazila Health Complex ..... 2 Satellite/EPI outreach centre ..... 3 MCWC ..... 4 FWC ..... 5	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		FWV ..... 6 FWA ..... 7 <b>NGO Sector:</b> Static clinic ..... 8 Satellite clinic ..... 9 Field worker ..... 10 Hospital..... 11 CHV..... 12 <b>Private medical sector:</b> Clinic/Hospital..... 13 MBBS Doctor ..... 14 Village doctor ..... 15 Homeopathic doctor ..... 16 Pharmacy ..... 17 <b>Other Sector:</b> Friend/Relative ..... 18 Neighbor ..... 19 Others (Specify) ..... 20	
836	Did you give any of the following liquids/drinks to (NAME) for diarrhea in the last 15 days?  (Multiple response)	Fluid form ORS pkt ..... 1 Homemade sugar-water solution ..... 2 salt-water solution (laban gur) ..... 3 Zink syrup..... 4 Zink tablet Fluid from special saline (rice) ..... 6 Nothing ..... 7	

### 9. Child rights and protection Questions

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
901	Do you know what are the rights of children in Bangladesh?	non-discrimination (ethnic groups, disabled) ..... 1 to live with parents..... 2 to give opinion ..... 3 to education ..... 4 to health services ..... 5 to birth registration..... 6	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
		to recreation..... 7 to protection from abusive child labor ..... 8 to protection from physical/social abuse..... 9 other ..... 10 don't know	
902	Do you agree or disagree with the following statement: It is wrong to hit children whenever they do something bad	agree ..... 1 disagree ..... 2 don't know ..... 3	
903	What are the things that you believe children should be protected from?	Physical abuse ..... 1 Social stigma ..... 2 Trafficking ..... 3 Abusive child labor ..... 4 Early marriage..... 5 Sexual abuse..... 6 Physical/natural threats ..... 7 Other..... 8 Don't know ..... 9	

**9. Anthropometric Measurement: (separate form)**

SAMPLE IDENTIFICATION		
1001	DISTRICT	<input type="checkbox"/>
1004	MOUZA VILLAGE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1005	TEAM CODE	<input type="checkbox"/> <input type="checkbox"/>
1006	ANTHRO INTERVIEWER CODE	<input type="checkbox"/>
1007	HOUSEHOLD INTERVIEWER CODE	<input type="checkbox"/>
1008	HH CODE (FROM HH INTERVIEW)	<input type="checkbox"/> <input type="checkbox"/>
1009	Interview date(month)	<input type="checkbox"/> October=1, November=2
1010	Interview date(day of month)	<input type="checkbox"/> <input type="checkbox"/>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1011	Child Code (1=Youngest, 2=next to youngest, 3=next oldest)	<input type="checkbox"/>	
1012	Child sex	male ..... 1 female ..... 2	
1013	Child birth date (YEAR)	2005 ..... 1 2006 ..... 2 2007 ..... 3 2008 ..... 4 2009 ..... 5 2010 ..... 6 Don't know ..... 7	
1014	Child birth date (MONTH)	Jan=1; Feb=2; Mar=3; Apr=4; May=5; Jun=6; Jul=7; Aug=8; Sep=9; Oct=10; Nov=11; Dec=12	
1015	Child birth date (DAY)	<input type="checkbox"/> <input type="checkbox"/>	
1016	Child age in months (less than 1 month = 0)	<input type="checkbox"/> <input type="checkbox"/>	
1017	Child weight	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/> kg	
1018	Child length/height	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/> <input type="checkbox"/> CM	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1019	Was length/height of child measured lying down or standing up?	LYING..... 1 STANDING..... 2	
1020	Result	CHILD MEASURED..... 1 CHILD SICK..... 2 CHILD NOT PRESENT ..... 3 CHILD REFUSED ..... 4 MOTHER REFUSED ..... 5 OTHER..... 6	
1021	Any more children U5?	Yes..... 1 No ..... 2	

## Annex 6: Additional Quantitative Data

### SO1 Tables

**Table 38: Moderate child malnutrition indicators, by district**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Children under 2 years (0-23 months)</b>						
<b>% of children 0-23 under weight (WAZ &lt;-2SD)</b>						
All households	31.9	19.5	-38.9	*	790	808
District						
Barisal	30.7	21.1	-31.1	*	274	340
Barguna	29.0	16.3	-43.8	*	223	198
Patuakhali	35.2	19.7	-43.9	*	293	269
<b>% of children 6-23 wasted (WHZ&lt;-2SD)</b>						
All households	15.1	13.8	-8.8		780	600
District						
Barisal	13.6	11.1	-18.2		269	254
Barguna	14.8	16.7	12.6		221	154
Patuakhali	16.7	14.9	-10.7		290	192
<b>Children under 5 years (0-59 months)</b>						
<b>% of children 0-59 underweight (WAZ&lt;-2SD)</b>						
All households	39.4	27.3	-30.7	*	2,306	2,060
District						
Barisal	40.1	27.8	-30.7	*	808	854
Barguna	37.4	25.8	-31.2	*	615	521
Patuakhali	40.1	27.8	-30.6	*	883	685
<b>% of children 6-59 wasted (WHZ&lt;-2SD)</b>						
All households	15.9	11.0	-31.0	*	2,296	1,851
District						
Barisal	15.0	8.0	-46.7	*	803	768
Barguna	15.3	13.3	-12.9		613	477
Patuakhali	17.1	12.8	-24.8	*	879	606

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

**Table 39: Severe child malnutrition indicators, by district**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations	
				Baseline	Endline

<b>Children under 2 years (0-23 months)</b>						
<b>% of children 0-23 under weight (WAZ &lt;-3SD)</b>						
All households	7.6	4.5	-40.5	*	790	808
District						
Barisal	6.5	5.2	-19.7		274	340
Barguna	5.0	4.8	-5.3		223	198
Patuakhali	10.6	3.5	-67.1	*	293	269
<b>% of children 6-23 wasted (WHZ&lt;-3SD)</b>						
All households	3.0	3.0	-1.2		780	600
District						
Barisal	1.1	2.7	143.2		269	254
Barguna	2.5	2.9	14.1		221	154
Patuakhali	5.2	3.5	-33.2		290	192
<b>Children under 5 years (0-59 months)</b>						
<b>% of children 0-59 underweight (WAZ&lt;-3SD)</b>						
All households	9.9	5.2	-47.7	*	2,306	2,060
District						
Barisal	11.4	5.4	-52.3	*	808	854
Barguna	7.9	5.0	-36.9	*	615	521
Patuakhali	9.8	4.9	-49.8	*	883	685
<b>% of children 6-59 wasted (WHZ&lt;-3SD)</b>						
All households	2.0	1.4	-30.4		2,296	1,851
District						
Barisal	1.5	1.2	-17.7		803	768
Barguna	2.0	1.3	-33.5		613	477
Patuakhali	2.6	1.7	-32.4		879	606

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

**Table 40: Moderate and severe child malnutrition indicators, by program participation**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations	
				Baseline	Endline
<b>% of moderately underweight (WAZ&lt;-2SD) children age 0-59 months</b>					
All households	39.4	27.3	-30.7	2,306	2,060
Program participation					
Did not participate SO1 or SO2		22.9	-42.0		364
Participated SO1 only		27.3	-30.6		1,146
Participated SO2 only		31.4	-20.4		32
Participated SO1 & SO2		30.0	-23.8		518

<b>% of severely underweight (WAZ&lt;-3SD) children age 0-59 months</b>						
All households	9.9	5.2	-47.7	+	2,306	2,060
Program participation						
Did not participate SO1 or SO2		3.7	-62.6			364
Participated SO1 only		5.8	-40.8			1,146
Participated SO2 only		13.8	39.6	*		32
Participated SO1 & SO2		4.2	-57.9			518
<b>% of moderately wasted (WHZ&lt;-2SD) children age 6-59 months</b>						
All households	15.9	11.0	-31.0	+	2,296	1,851
Program participation						
Did not participate SO1 or SO2		10.6	-33.4			307
Participated SO1 only		11.7	-26.5			1,036
Participated SO2 only		7.6	-52.1			28
Participated SO1 & SO2		9.9	-37.9			480
<b>% of severely wasted (WHZ&lt;-3SD) children age 6-59 months</b>						
All households	2.0	1.4	-30.4		2,296	1,851
Program participation						
Did not participate SO1 or SO2		0.6	-69.9			307
Participated SO1 only		1.9	-8.0			1,036
Participated SO2 only		4.7	130.6			28
Participated SO1 & SO2		0.8	-62.8			480

Note: Plus sign (+) for "all households" indicate endline-baseline difference is statistically significant at the 10%. Stars (\*) for program participation indicate difference is statistically significant compared to "did not receive SO1 or SO2" at endline.

**Table 41: Breastfeeding practices, by district**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)	Number of observations	
				Baseline	Endline
<b>Children under 6 month exclusively breastfed (%)</b>					
All households	38.4	44.9	16.9	282	320
District					
Barisal	29.1	39.3	35.2	133	151
Barguna	51.7	43.0	-16.8	54	75
Patuakhali	43.8	55.5	26.7	95	94
<b>Children under 7 month exclusively breastfed (%)</b>					
All households	34.2	42.5	24.3	323	348
District					
Barisal	26.7	38.0	42.2	145	163

Barguna	47.0	40.6	-13.5		62	84
Patuakhali	36.7	51.3	39.9		117	101
<b>Infants and toddlers who were put to the breast within one hour of birth (%)</b>						
All households	28.9	41.1	42.1	*	1,142	968
District						
Barisal	23.3	35.7	53.5	*	417	435
Barguna	26.5	52.3	97.6	*	297	241
Patuakhali	36.1	39.7	10.1		428	292

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

**Table 42: Main source of drinking water, by district**

<b>(endline, % of households)</b>				
Indicator	Barisal	Barguna	Patuakhali	Total
Deep tube well	90.5	75.9	96.2	87.9
Shallow tube well	8.5	8.8	3.4	7.0
Pond	0.1	7.4	0.1	2.3
Pond sand filter	0.0	5.9	0.1	1.8
River/canal	1.0	0.1	0.2	0.5
Rainwater	0.0	0.9	0.0	0.3
Rainwater harvesting system	0.0	0.7	0.0	0.2
Other	0.0	0.3	0.1	0.1
N	2031	1614	1701	5346

**Table 43: Safety of tube well, by district**

Indicator	Barisal	Barguna	Patuakhali	Total
<b>Mean of HH who use well as primary source of drinking water</b>				
Tube well tested for				
arsenic	61.1	47.1	41.9	50.9
Not tested	13.7	20.9	26.3	19.8
Don't know	25.2	32.0	31.9	29.2
N	2010	1369	1694	5073
<b>Status of testing: Mean of HH where well was tested</b>				
Green	42.5	30.5	55.8	43.2
Red	0.9	1.9	1.8	1.4
Not marked	56.6	67.6	42.4	55.4
N	1228	645	709	2583

**Table 44: Type of latrine, by district**

<b>(endline, % of households)</b>				
<b>Indicator</b>	<b>Barisal</b>	<b>Barguna</b>	<b>Patuakhali</b>	<b>Total</b>
Ring-slab/offset latrine (water seal broken)	45.7	44.8	42.9	44.5
Ring-slab/offset latrine (water seal)	31.7	30.4	31.4	31.2
Hanging/open latrine	2.8	9.0	10.3	7.0
Pit latrine (covered)	6.9	7.0	5.9	6.6
Pit latrine (uncovered)	6.7	6.0	5.9	6.2
Septic latrine	5.7	2.1	2.4	3.6
No toilet facility	0.6	0.8	1.2	0.8
N	2031	1614	1701	5346

**SO2 Tables****Table 45: Access to agricultural land and water, by district**

<b>Indicator</b>	<b>Baseline</b>	<b>Endline</b>	<b>Percent difference (Endline - Baseline)</b>	<b>Number of observations</b>		
				<b>Baseline</b>	<b>Endline</b>	
<b>% HH with agricultural land</b>						
All households	59.2	68.0	14.8	*	5,024	5,346
District						
Barisal	52.9	62.3	17.8	*	1,648	2,031
Barguna	63.4	74.5	17.4	*	1,564	1,614
Patuakhali	61.2	68.5	12.0	*	1,812	1,701
<b>Average land area (decimals)</b>						
All households	88.0	99.5	13.0	*	2,970	3,616
District						
Barisal	82.2	85.6	4.2		871	1,260
Barguna	87.6	97.6	11.5	*	991	1,195
Patuakhali	93.1	116.5	25.2	*	1,109	1,161
<b>% HH with access to khash land</b>						
All households	10.1	11.1	9.8		4,944	5,335
District						
Barisal	11.1	16.3	46.4	*	1,648	1,787
Barguna	11.2	9.7	-13.5		1,648	1,788
Patuakhali	7.9	7.2	-9.6		1,647	1,760

<b>% HH with access to water bodies</b>						
All households	64.3	80.5	25.3	*	4,941	5,335
District						
Barisal	63.4	77.0	21.4	*	1,647	1,787
Barguna	69.8	81.9	17.3	*	1,647	1,788
Patuakhali	59.5	82.6	38.8	*	1,646	1,760

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (\*)

**Table 46: Childhood feeding practices, by program participation in SO1**

Indicator	Baseline	Endline	Percent difference (Endline - Baseline)		Number of observations	
					Baseline	Endline
<b>Households consuming adequately iodized salt (20-40ppm)</b>						
All households	76.5	84.6	10.6	+	5,026	5,346
Program participation						
Participated SO1		84.9				2,618
Did not participate SO1		84.2				2,728
<b>Infants/toddlers older than 6 months who received iron rich/iron fortified foods during the previous day</b>						
All households	51.6	64.7	25.4	+	793	677
Program participation						
Participated SO1		66.7		*		545
Did not participate SO1		58.1				132

Note: Plus sign (+) for "all households" indicate endline-baseline difference is statistically significant at the 10%. Stars (\*) for program participation indicate difference is statistically significant compared to "did not receive SO1 or SO2" at endline.

## Annex 7: Terms of Reference, Baseline

### SCHEDULE A

#### Terms of Reference

##### Design and Implementation of Baseline Study and Development of M&E Plan

Nobo Jibon Program - FY 2010-2015 Title II Multi-Year Assistance Program (MYAP)

- Name of Consultant :** TANGO International (Mark Wyman Langworthy)
- Approximate dates :** 16 August, 2010 to 15 January, 2011 (45 working days)
- Location :** Dhaka, Barisal and other areas to be determined
- Supervised by :** John Meyer, Chief of Party

**INTRODUCTION:** Save the Children USA (SC) is commissioning a baseline study of its Title II Multi-Year Assistance Program, called *Nobo Jibon*<sup>1</sup>, that will be implemented in three districts of Barisal Division in Bangladesh in collaboration with six local partner NGOs and three international technical partners. These TORs provide background information and expectations for the design and oversight of a baseline study, planned as a critical part of the eventual evaluation of the program.

**INTRODUCTION:** Save the Children USA (SC) is commissioning a baseline study of its Title II Multi-Year Assistance Program, called *Nobo Jibon*<sup>1</sup>, that will be implemented in three districts of Barisal Division in Bangladesh in collaboration with six local partner NGOs and three international technical partners. These TORs provide background information and expectations for the design and oversight of a baseline study, planned as a critical part of the eventual evaluation of the program.

**PROGRAM BACKGROUND:** The Nobo Jibon program has been designed to reduce food insecurity and vulnerability for 191,000 direct beneficiary households, or nearly 1 million people, in nine upazilas of Barisal Division over five years. The program comprises three strategic objectives (SOs) which are aligned with Bangladesh's national health and food security policies and USAID's priorities for Bangladesh. The SOs are:

SO1 - Mother and Child Health and Nutrition (MCHN) - Improved health and nutritional status of targeted households, particularly children < five years of age

SO2 - Market-based Production and Income Generation - Poor and extremely poor households have increased productivity and purchasing power to improve access to food

SO3 - Disaster Risk Reduction -Households in targeted communities protect their lives and assets and quickly resume livelihood activities following natural disasters.

Significant integration/overlap, i.e. households participating in all three SOs, will help assure greater impact than would be expected if interventions were dispersed. In total, Nobo Jibon will reach more than 1,300 villages and approximately 89% of the total 419,247 households in the nine target upazilas, which are:

Barisal District	Patuakhali District	Barguna District
Barisal Sadar	Dashmina	Amtali
Hizla	Galachipa	Barguna Sadar
Mahendiganj	Kalapara	Patharghata

SO1 seeks to change childcare behaviors, improve intra-household food allocation, and integrate MCHN services and messages with GoB and private institutions. Nobo Jibon will provide a food ration to households with vulnerable women or children, conditional upon participation in awareness and education sessions. BCC messaging will improve nutrition awareness and behaviors, community-based care of childhood illnesses, and hygiene practices. SO1 beneficiaries would total approximately 187,000 households in 79 unions.

SO2 seeks increased productivity and income to improve access to food for such households. An income generation strategy will enhance agricultural and aquaculture productivity and profitability. Nobo Jibon will organize household groups, help build technical skills for increased horticultural, fish, poultry or non-farm production and improve links to markets. The program will promote access to *khas* resources and improve sustainable access to capital to meet input/service needs. This component will target 80,000 poor and extremely poor households in all Nobo Jibon communities. An additional 9,000 extremely poor households will be targeted for asset transfers, to catalyze new income generating activities. Additional economic benefits, such as increased access to quality inputs and services; increased market activity; improved market infrastructure; and improved technologies may indirectly benefit an additional 100,000 beneficiary households.

SO3 activities will directly or indirectly benefit all households (circa 373,470) within the core geographic area targeted by the program. All SO1 and SO2 beneficiaries will benefit from risk reduction, with 44 unions determined to be highly disaster prone targeted during a first phase. Food for work and/or case for work will provide a safety net, while helping build DRR infrastructure. SC's involvement in multi-agency disaster preparedness networks will extend some benefits of the program (e.g. advances in early warning systems) beyond the nine targeted

upazilas. Given known vulnerabilities in upazilas elsewhere in the division, SC proposes that its emergency contingency planning and response activities consider the entire Barisal Division as its target.

**PURPOSE OF THE ASSIGNMENT:** Consultant support is required for assisting in the development of an M&E plan leading to the overall design and management of a baseline survey, along with a thorough analysis of data and presentation of findings. The M&E plan to be finalized following the FANTA-2 M&E workshop in August 2010 will lead to an appropriate baseline survey design. The baseline study aims, through a quantitative survey of a representative sample of households in the program impact area, to establish pre-program benchmarks for key indicators, to help refine program targets and to help prioritize program activities. External consultant expertise is required to assure appropriate sampling strategy and data collection methods and to objectively analyze, interpret and present data.

**STATEMENT OF WORK:** A sequence of activities is proposed for this assignment. The following provides detail on specific tasks for the consultant(s).

- A. Participate in a M&E workshop offered to newly-awarded Title II Multi-Year Assistance Programs (MYAPs):
  - The consultant needs to join in the M&E workshop organized by FANTA-2 in August 16-20, 2010 in Bangladesh to have a better understanding on FFP new strategies in M&E. This participation will be essential in designing an M&E plan in line with FFP guidelines and priorities.
- B. Assist in developing Nobo Jibon M&E Plan and staff capacity:
  - Work with the Nobo Jibon M&E Manager to develop a comprehensive M&E plan for Nobo Jibon to be submitted to USAID for approval before the baseline.
  - Work with the Nobo Jibon M&E Manager to design and deliver an M&E workshop for key Nobo Jibon staff (SC and partners) following content of FANTA workshop.
- C. Develop Baseline Sampling Methodology, Survey Instruments, and Survey Design Document
  - Review Nobo Jibon program document and IPTT indicators and discuss information needs with key stakeholders.
  - Prepare draft questionnaire, solicit feedback, finalize questionnaire
  - In consultation with stakeholders, devise a sampling strategy that results in the collection of data required for fulfilling survey objectives, while economizing on time and resources.
  - Submit for approval a concise but comprehensive design document describing all steps in survey methodology, including the analyses proposed
- D. Program Software and Personal Digital Assistants (PDAs)

- Using software of consultant's choice, develop computer-based questionnaire template, assuring interface with PDAs, including application of Bengali fonts.
- Put in place a system for data management, including uploading of data collected in appropriate form and format.
- Train staff, as required, to manage the system

#### F. Train Staff, including Field Supervisors, and Pre-test Instrument

- Prepare and deliver six-day training including two days for field testing for a team of enumerators and field supervisors.
- Lead a separate session with team leaders and quality control team to agree on systems for assuring the quality control of data collected.
- Conduct and debrief a field pre-test of the survey instrument, making corrections to questions and methods as required

#### G. Oversee Data Collection

- Oversee first rounds of data collection and provide guidance and feedback to local team
- Be available for remote problem solving in case of need.

#### H. Analyze Data and Present Results

- Thoroughly analyze the data collected.
- Disaggregate data and conduct comparative analysis as possible among geographic and/or demographic sub-groups.
- Present findings in tabular and graphic format with narrative descriptions and interpretations.

**TEAM COMPOSITION:** Local team members will be contracted outside of this contract to fulfill the requirements of the baseline study. A local team leader will help in designing methodology, tools and training data collectors. This local consultant will be recruited by Save the Children through a separate contract. Additional team members to be recruited locally by Save the Children will include a survey supervisor, field team leaders, quality controllers and enumerators. A sub-set of enumerators will be experienced in anthropometric measurement. Save the Children M&E staff will provide assistance to resolve technical issues related to survey design, tools development, recruitment of the data collection team, training and field implementation process.

## **APPROXIMATE TIMELINE AND LEVEL OF EFFORT:**

*Prepare for and attend the FANTA-2 M&E Workshop (06 days):* The international consultant will join in the M&E workshop to newly-awarded Title II Multi-Year Assistance Programs (MYAPs) in Bangladesh.

*M&E planning (06 days)* Remote contributions (drafting, reviewing, editing) the Nobo Jibon M&E plan and baseline study design.

*Conduct M&E Workshop for Nobo Jibon Staff (September 20-22: 03 days):* Following content of the FANTA-2 M&E workshop the consultant will facilitate a M&E workshop for Nobo Jibon stakeholders.

*Design Quantitative Population-based Survey (September 26 – 30: 05 days):* The survey team leader will review background documentation and conduct interviews with SC, and other stakeholders to develop quantitative survey instruments, sampling plan<sup>1</sup>, while outlining a plan and time line for team recruitment and training, data collection and analysis<sup>1</sup>. A survey design document will be produced.

*Form and Train Team of Enumerators (October 02 – October 07: 05 days):* The survey team leader will prepare a team of enumerators and team-leaders adequate to collect the required data within the time allotted. S/he will design and deliver training, as needed. Pre-testing of data collection should be part of the training schedule.

*Coordinate Quantitative Population-based Survey (October 09-17: 09 days):* The survey team leader will be present at the beginning of data collection only, assuring that appropriate data collection and management methods are used and that the local field supervisors are able to lead the process. Data entry and cleaning will be conducted as needed using selected analysis software.

*Quantitative Data Analysis and Reporting:* Data analysis and preliminary interpretation of the findings will be done by the survey team leader. S/he will prepare a survey report summarizing findings (approx 11 days for analysis, writing and review).

A total of up to 45 working days will be made available to consultant for full implementation of these TORs.

## **REPORTING AND DELIVERABLES:**

There are three written deliverables for this assignment:

- A revised/edited Nobo Jibon M&E Plan by September 20, 2010.
- A baseline study design document and work plan, finalized by September 30.
- A draft quantitative survey summary report in English by December 15 with final version with dataset and syntax files by 10 January 2011.

## SCHEDULE B

### Term of Agreement and Compensation

Term of Agreement: Contractor (i.e. TANGO International) should complete the duties and responsibilities for a maximum of 45 person days of execution during a period from August 15, 2010 through January 10, 2011, as per Scope of Work (Schedule A). In the event Contractor and SC-USA desire to extend the terms of this Agreement, the parties will prepare and sign a written amendment referencing this Agreement No. Extensions or amendments to this Agreement shall not be effective unless in written and sign by all parties.

Compensation: SC-USA shall pay Six Hundred Sixty (\$660/day) US Dollars per day for a maximum of 45 person days (total \$29,700US) as compensation, upon completion of the tasks as specified at Schedule B, with proper written invoice and upon getting clearance from supervisor.

Payment Method: 25% of fee and documented expenses will be paid to the contractor upon completion of the first trip (August 15-20) (against approved invoice including expenses) and 75% upon submitting the final report, again based on approved invoice and expense report. Method of payment will be per current Save the Children-USA payment.

Other Benefits: SC-USA will bear all approved and allowable expenses incurred for traveling from US to Bangladesh, including economy class airfare, lodging while in transit or in Bangladesh, meals, local travel and other admissible costs, which will not exceed \$5000 (five thousand USD). Save the Children has no provision of per-diem but will bear all actual cost