Quantitative impact evaluation of the SHOUHARDO II Project in Bangladesh

May 2015

TANGO, International Inc.
406 S. 4th Avenue
Tucson, Arizona 85701 USA
www.tangointernational.com

Table of Contents

Acknowledgements 1
Acronyms 2
List of Tables 3
List of Figures 4
Executive summary 5
1. Introduction 8
2. The SHOUHARDO II project: Beneficiary selection process and interventions 9
2.1 Beneficiary selection process 10
2.1.1 Identification of project geographical areas 10
2.1.2 Household selection 10
2.2 Project interventions 12
2.3 Participation in project interventions 15
3. Conceptual framework and measurement of stunting and its determinants 16
3.1 UNICEF conceptual framework 16
3.2 Measures of stunting and its determinants 17
3.2.1 Stunting 18
3.2.2 Determinants of stunting 18
4. Data 19
5. Impact evaluation methodologies 20
5.1 Descriptive methods 21
5.2 Instrumental variables regression analysis 22
5.3 Propensity score matching 25
6. Results: Descriptive evidence of project impacts 28
6.1 Trends in stunting among project households compared to nationally 28
6.2 Shift in the age trajectory of stunting among project households 30
6.3 Difference-in-difference analysis 31
7. Results: Instrumental Variables evidence of project impacts 33
8. Results: Propensity Score Matching evidence on the impact of specific interventions 38
8.1 Mother and child health and nutrition interventions 38
8.2 Women's empowerment interventions 42

8.3 Livelihoods promotion interventions 44
8.4 Water and sanitation interventions 46
9. Summary and conclusions 47
Appendix 1. Determinants of stunting employed as dependent variables: Variable descriptions 51
Appendix 2. Household, village and district-level characteristics used for Propensity Score Matching analysis: Variable descriptions 53
Appendix 3. Instruments employed for Instrumental Variables tests and 2SLS regressions 55
Appendix 4. Probit propensity score models for participation in SHOUHARDO II project intervention ... 56
References 64

Acknowledgements

I would like to extend my gratitude to the CARE Bangladesh staff who made this impact evaluation study possible and provided timely information regarding the SHOUHARDO II project under difficult working conditions. I would especially like to thank Monzu Morshed, Deputy Chief of Party of SHOUHARDO II, AKM Abdul Wadud, Monitoring and Evaluation Coordinator, and Khan Tawhid Parvez, Senior Technical Manager for Health, Hygiene and Nutrition. The survey team from Mitra and Associates that collected the data employed here, in addition to Lloyd Banwart and Towfique Aziz of TANGO, International are gratefully acknowledged for their hard work in the field. Tom Bower provided excellent research assistance in support of the data analysis and report write-up. Finally, the individuals and families who gave freely of their time to be interviewed during the data collection are thanked in hope that the findings of this study will enable future programs to contribute to further improvements in food security and children's nutritional status throughout Bangladesh.

Lisa C. Smith, Ph.D. (Principal author)
Senior Economist
TANGO, International

Acronyms

2SLS	Two-stage Least Squares
ATT	Average treatment effect on the treated
CHD	Comprehensive Homestead Development
CHV	Community health volunteer
COG	Core Occupational Group(s)
DHS	Demographic and Health Survey
ECCD	Early Child Care for Development
EKATA	Empowerment, Knowledge, and Transformative Action
HAZ	Height-for-age Z-score
IGA	Income Generating Activities
IV	Instrumental Variable(s)
MCHN/PEP	Maternal and Child Health and Nutrition/PEP
MT	Metric ton
NGO	Non-governmental organization(s)
OLS	Ordinary Least Squares
PEP	Poor and Extreme Poor
PCA	Principal Components Analysis
PM2A	Preventing Malnutrition in Children Under Two
PPS	Probability proportionate to size
PSM	Propensity Score Matching
RCT	Randomized Controlled Trial
SHOUHARDO	Strengthening Household Ability to Respond to Development Opportunities
WHZ	Weight-for-height Z-score

List of Tables

Table 1:Design of the randomized controlled trial to evaluate the relative effectiveness of the MCHN/PEP versus the PM2A approach 12
Table 2: Participation in SHOUHARDO II project interventions, by region 15
Table 3: Planned versus actual treatment status, by type of intervention 24
Table 4: Change in the prevalence of stunting between the SHOUHARDO II 28
Table 5: Age trajectory of stunting among 0-5 year olds: Comparison of SHOUHARDO II participant children with Bangladeshi children 31
Table 6: Difference-in-difference analysis: Changes in child undernutrition and its determinants from baseline to endline for eligible versus non-eligible households 32
Table 7: Instrumental variables estimates of the impact of participation in the SHOUHARDO II project on children's height-for-age z-scores 34
Table 8: Instrumental variables estimates of the impact of participation in the SHOUHARDO II project on household food security 36
Table 9: Instrumental variables/OLS estimates of the impact of participation in the SHOUHARDO II project on determinants of children's nutritional status 37
Table 10: Propensity Score Matching estimates of the average treatment effect on the treated: Full participation in Mother and Child Health and Nutrition interventions 40
Table 11: Propensity Score Matching estimates of the average treatment effect on the treated (ATT): Mother's participation in women's empowerment interventions 43
Table 12: Propensity Score Matching estimates of the average treatment effect on the treated (ATT): Participation in livelihood promotion interventions 45
Table 13: Propensity Score Matching estimates of the average treatment effect on the treated: Participation in water and sanitation interventions 46
Table 14: Summary of findings from single difference, difference-in-difference, instrumental variables, and propensity score matching analyses 48
Table 15: Instrumental variables used for endogeneity testing and 2SLS estimates of the impact of participation in the SHOUHARDO II project 55
Table 16 Probit propensity score model estimation for full participation in SHOUHARDO II MCHN interventions 56
Table 17 Probit propensity score model estimation for full participation in SHOUHARDO II women's empowerment interventions 58
Table 18: Probit propensity score model estimation for participation in livelihoods promotion interventions 60
Table 19: Probit propensity score model estimation for participation in water and sanitation interventions 62

List of Figures

Figure 1: Map of SHOUHARDO II program area 11
Figure 2: UNICEF conceptual framework for the causes of maternal and child undernutrition 16
Figure 3: Change in the prevalence of stunting between the SHOUHARDO II baseline and endline surveys 28
Figure 4: Change in stunting prevalence among children under five: SHOUHARDO I and II 29
Figure 5: Age trajectory of stunting among 0-59 month olds in project area at baseline 30
Figure 6: Instrumental variables estimates of the impact of participation in the SHOUHARDO II project on children's height-for-age z-scores (HAZ) 35
Figure 7: Common support: Propensity scores of participant and non-participant households for full participation in MCHN interventions 41

Executive summary

The "Strengthening Household Ability to Respond to Development Opportunities II" (SHOUHARDO II) project was implemented by CARE Bangladesh from June 2010 through September 2015 in 1,573 villages located in the poorest and most marginalized districts in the country. The overall goal of SHOUHARDO II was to reduce households' vulnerability to food insecurity. However, a key project outcome indicator was the prevalence of stunting—or chronic, long-term undernutrition—among preschool children. It employed an integrated approach to reducing food insecurity and child undernutrition, combining nutrition-specific interventions with those that address underlying causes, such as poverty, economic and gender inequality, and poor sanitation.

The objective of this impact evaluation was to determine whether the observed reductions in the prevalence of stunting that took place over the project's implementation period, from 61.7 to 48.8 percent for children under five, were caused specifically by the project's interventions. It further aimed to understand *how* the reductions were brought about by examining whether the project had an impact on a set of underlying and immediate determinants of stunting, as defined in the UNICEF Conceptual Framework for the Causes of Maternal and Child Undernutrition. It also did so by examining which of the project's interventions had an impact, focusing on four sets of interventions: maternal and child health and nutrition (MCHN), women's empowerment, livelihoods promotion, and water and sanitation.

The evaluation employed a variety of methods, including temporal comparisons of changes in indicators for project households compared to Bangladeshi households nation-wide, difference-in-difference (DID) analysis, Instrumental Variables (IV) testing and regression, and Propensity Score Matching (PSM). The results from these analyses were triangulated to draw conclusions regarding the project's overall impact and how it was brought about. The data employed are from cross-sectional, population-based surveys of project villages conducted near the project's inception (December 2010) and near its end (December 2014). Given the nature of the data employed, this impact evaluation was not able to evaluate the influence of the project's activities designed to empower the poor and assist households and communities in preparing for, responding to and mitigating the impacts of disasters and climate change.

Overall, the evidence presented in the report indicates that the SHOUHARDO II project was very successful in reducing child stunting. While it is not possible to pinpoint the exact amount of stunting reduction caused with accuracy, it seems likely that a large portion, if not all, of the 12.9 percentage–point reduction in the prevalence of stunting among under-fives observed between the baseline and endline surveys can be attributable to the project. Combined, the following findings support this conclusion:

- The average annual decline in the stunting prevalence among eligible project households (3.2 percentage points per year) was far higher than that of rural Bangladeshi households in recent years (0.6 percentage points);
- The normal large increase in stunting prevalence seen for children as they age from the 6-18 to the 48-60 month age group was not found for the group of children whose households participated in SHOUHARDO II interventions;
- The DID analysis comparing the changes over time for eligible project households compared to non-eligible project households indicates that the stunting prevalence fell more for eligible households;

- IV estimates of the impact of participation in the project confirm that it had a substantial, positive impact on children's height-for-age z-scores;
- The DID, IV and PSM analyses all indicate that the project's interventions led to improvements in a broad array of *determinants* of stunting, improvements which are necessary for reducing stunting.

The findings regarding project impacts on the determinants of stunting reveal that the stunting reductions were brought about by improvements in all three underlying determinants—household food security, the quality of caring practices for mothers and children, and household health environments—and, additionally, in mother's and children's food consumption.

With respect to **household food security**, the project's interventions increased the amount of food households have access to, increased household dietary diversity (an indicator of the dietary quality), and reduced household hunger.

With respect to **caring practices for mothers during pregnancy**, all methods point to project impacts on antenatal care, including whether that care is received in a medical facility. They suggest that the project led to women consuming more food and getting more day-time rest during their pregnancies. Finally, because of the project more women are receiving Vitamin A supplementation within six weeks of their delivery and iron/folic acid supplementation during pregnancy. For **caring practices for children**, project interventions led to greater knowledge among mothers of the appropriate times for hand washing and an increase in the practice of safely disposing of children's feces. It also increased Vitamin supplementation for children, including vitamin A and multivitamin supplementation. No clear evidence was found of an impact on child immunization.

Some of the improvement in **household health environments** seen between the baseline and endline surveys among eligible households, including improvement in access to safe water and access to sanitary toilet facilities, can likely be attributed to the project. Note, however, that the results from the different analyses are incongruent on this important determinant of child stunting.

Finally, with regard to **food consumption**, the results suggest that dietary diversity was enhanced for households as a whole and for mothers and children living in them. They confirm that the large increase in the percent of children 6-23 months who have a minimum acceptable diet, from 10 to 46 percent, was at least partially caused by the project's interventions.

Taking into account the results for all analyses, the evidence on the impact of the project is ambiguous for diarrhea incidence among children under five, the only indicator of **children's health** measured as part of the project surveys. While the evidence of an impact on **mother's nutritional status** is not straightforward, it appears likely that the project's interventions did lead to some improvement in mothers' Body Mass Index, which is an important step towards preventing low birth weight.

The PSM results give insight into the question of *which* of the four sets of intervention examined brought about the reductions in stunting and improvements in its determinants. While none of the interventions were found to improve children's nutritional status (which is likely due to the weakness of the PSM method in controlling for the targeting of undernourished children that took place), they were each found to have contributed in some way. In sum:

- The MCHN interventions had a broad influence, improving household, mother's and children's dietary diversity; a wide variety of the caring practices for mothers during pregnancy; a wide variety of the caring practices for children; and access to sanitary toilet facilities.
- The women's empowerment interventions also facilitated improvements in many important determinants of stunting, including household and mother's dietary diversity, household hunger, antenatal care during pregnancy, taking more food during pregnancy, post-delivery Vitamin A supplementation of mothers, and indicators of the knowledge and use of hygiene practices.
- The livelihoods promotion activities increased household, mother and children's dietary diversity, reduced household hunger, and improved mothers' nutritional status.
- The project's water and sanitation interventions are found to have increased access to sanitary toilet facilities.

In conclusion, this report finds that the SHOUHARDO II project was successful in reducing child stunting. Two factors that contributed to its success were: 1) it addressed a broad range of underlying and immediate causes of chronic undernutrition; and 2) it brought to bear not only nutrition-specific MCHN interventions to address the problem, but also interventions designed to empower women, to promote households' livelihoods, and to improve households' health environments.

1. Introduction

The "Strengthening Household Ability to Respond to Development Opportunities II" (SHOUHARDO II) project, funded by the United States Agency for International Development and the Government of Bangladesh, was implemented by CARE Bangladesh from June 2010 through September 2015. Carried out in 1,573 villages located within eleven of the poorest and most marginalized districts in Bangladesh, it is one of the largest non-emergency food security development programs in the world. The project follows on the experience of its predecessor, the SHOUHARDO I program implemented from 2005-2009, which piloted an integrated approach to reducing child undernutrition, combining nutrition-specific interventions with those that address key underlying determinants of stunting using a rights-based, livelihoods programming approach. Some of these underlying determinants are poverty and food insecurity, economic and gender inequality, poor sanitation and vulnerability to natural disasters. As shown by Smith et al. (2013), SHOUHARDO I was exceptionally successful in applying this approach to reducing child undernutrition.

While the overall goal of SHOUHARDO II was to reduce households' vulnerability to food insecurity, a key project outcome indicator was the prevalence of stunting—or chronic, long-term undernutrition—among preschool children. In addition to child mortality, stunting is associated with poor school and work performance and an increased likelihood of overweight, chronic disease and mental health issues among adults. Such personally damaging effects for young children and their families, along with its intergenerational transmission, have severe consequences for entire communities and countries, dampening their wider development (Smith and Haddad 2015)—and certainly compromising long-term food security.

As documented in this report, the prevalence of stunting among children under five dropped from 61.7 at the time of the project's inception to 48.8 four years later, a total reduction of 12.9 percentage points. This reduction of 3.2 percentage points per year is impressive when compared to the annual decline for rural Bangladeshi households as a group, which was 0.6 of a percentage point between 2007 and 2013.[1] The reduction for children under two was equally impressive.

The current momentum within developing countries and internationally to address the problem of child undernutrition has never been higher. The rise of the Scaling Up Nutrition (SUN) movement starting in 2010, and the publication of the *Lancet* Maternal and Child Nutrition Series in 2008 have both served to raise awareness of its extent and consequences. The development community is increasingly recognizing that slower-than-expected progress towards reaching the Millennium Development Goals (MDGs) by 2015—including those for poverty, secondary education, child mortality and maternal health—is due, in large part, to lack of investment in children's nutrition (World Bank 2013). Nutrition has consequently been greatly elevated on the development agenda, and global commitment to reducing undernutrition is stronger than ever (Gillespie and Haddad et. al. 2013). In turn, answers to the question of how to accelerate reductions in undernutrition in the coming decades are in great demand.

To address this increased demand, a wide evidence base is building regarding the roles of nutrition-specific interventions, such as micronutrient supplementation and nutrition education, as well as those promoting more fundamental, underlying and basic determinants of nutritional status such as safe water access, sanitation, women's education and empowerment, food security, national income growth and governance (Bhutta et al. 2013; Ruel et. al. 2013; Haddad 2012; Ruel and Alderman 2013; Smith and

[1] See Section 6 below.

Haddad 2015). The experience of the SHOUHARDO II project in reducing child stunting in Bangladesh—a country with one of the highest prevalences in the world, at 41 percent of all children under five (Niport et. al. 2013)—provides a unique opportunity to gain insight into how integrated, participatory development projects implemented at the local level can contribute to accelerating reductions in child undernutrition.

The objective of this impact evaluation is to determine whether the observed reductions in stunting that took place over the SHOUHARDO II project's implementation period were caused specifically by the project's interventions. It further aims to understand *how* the reductions were brought about by examining whether the project had an impact on a set of determinants of stunting—including household food security, caring practices for mothers and children, household health environments, mother's nutritional status, and children's health. The reason the study includes analysis of the determinants of stunting in addition to stunting itself is because they give insight into the pathways through which stunting was influenced by the project and, being necessary conditions for children's nutritional health, alternative evidence regarding the impact of the project on stunting. The evaluation looks at the impacts of the following subsets of the project's interventions that were implemented at the household level: 1) maternal and child health and nutrition; 2) women's empowerment; 3) livelihoods promotion; and 4) water and sanitation.

The evaluation employs a variety of methods, including temporal comparisons of changes in indicators among project households compared to Bangladeshi households nation-wide, difference-in-difference analysis, Instrumental Variables (IV) testing and regression, and Propensity Score Matching (PSM). The results from these analyses are triangulated to draw conclusions regarding the project's overall impact and how it was brought about. The data employed are from cross-sectional, population-based surveys of project villages conducted near the project's inception (December 2010) and near its end (December 2014).

The next section of the report describes the beneficiary selection process and project interventions. Section 3 lays out the conceptual framework and outcome indicators employed as dependent variables. Section 4 describes the data collection process and Section 5 the impact evaluation methods used. Sections 6, 7 and 8 present the main empirical results. Finally, Section 9 provides a summary of the results and conclusions.

2. The SHOUHARDO II project: Beneficiary selection process and interventions

The SHOUHARDO II project was implemented within the context of CARE Bangladesh's long-term program goals, which are to eradicate poverty and promote social justice through improving social equity, livelihood security and governance in the areas in which it works. The project partnered with a variety of institutions including 16 local NGOs who are responsible for 90 percent of overall implementation coverage, and technical partners such as the International Union for the Conservation of Nature, WorldFish, the International Rice Research Institute. It was implemented with the active participation of 13 ministries within the Government of Bangladesh. The project was funded at US$130,000,000, including 287,420 MT worth of commodities for both direct distribution and monetization. This section first describes the project's beneficiary selection process and interventions

in detail. It then provides data on the percent of households in project villages participating in each intervention.

2.1 Beneficiary selection process

2.1.1 Identification of project geographical areas

National databases were used to identify the remote areas most vulnerable to shocks and food insecurity within Bangladesh. The following criteria for area selection were used:

- Degree of food insecurity and child undernutrition
- Susceptibility of the area to natural disasters and shocks
- Remoteness, illiteracy and poverty rates
- Avoiding duplication and overlap with other projects

Figure 1 locates the resulting four SHOUHARDO II project areas—Coast, Haor, Mid Char and North Char—within Bangladesh. The northcentral *Chars* are riverine islands surrounded by water most of the year. They are prone to dramatic erosion and floods, which results in crop loss, isolation, and poor access to markets and services. Also highly flood-prone and with similar food insecurity issues to the Chars is the northeastern *Haor* area, characterized by vast expanses of depressed wetlands with scattered, elevated mounds that become largely inhabitable islands during the wet season. The delta-like *Coast* region is in the deep southeast of the country where food security is threatened by regular storm surges and slow-onset disasters such as water-logging and land salinization, and the impacts of climate change.

Within these four regions, 11 of the most marginalized and poor districts were chosen, followed by 30 Upazilas and 171 unions within them. Project villages were selected through Focus Group Discussions with local and national government representatives and NGOs.

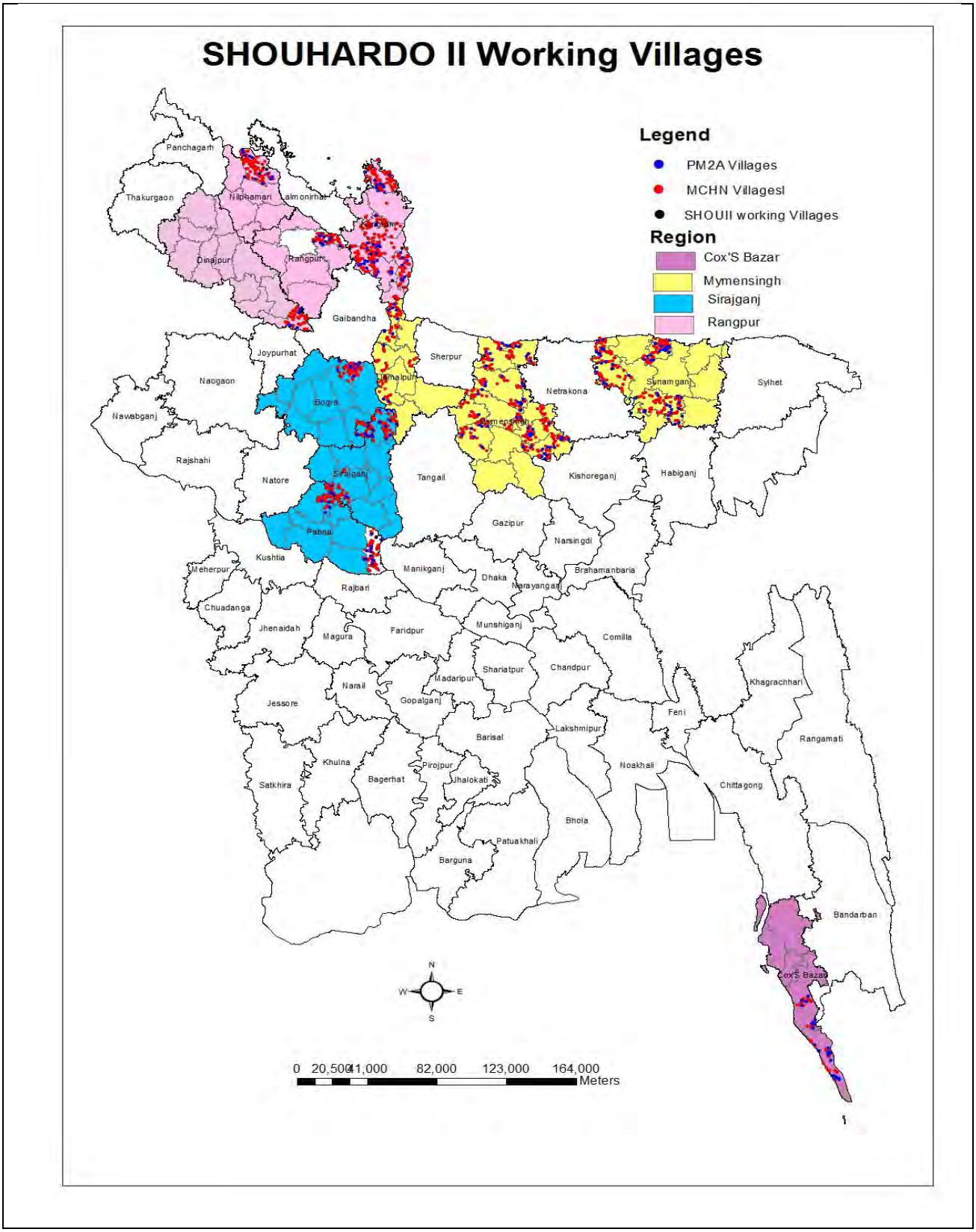
2.1.2 Household selection

Household beneficiary selection was guided by both socio-economic targeting and randomization required by a research project incorporated into the project's design.

Socio-economic targeting: selection of PEP households

Following the SHOUHARDO I project's approach, household targeting within each village began with the use of Participatory Rural Appraisal tools to identify the poorest households. The tools included social and resource mapping and a "well-being analysis". Community members representing the broad range of interest groups and classes grouped households into five economic categories: extreme poor, poor, lower middle, middle, and rich. The classification criteria used included land ownership, housing condition, income level, income sources, occupation and food insecurity. Following, the "Poor and Extreme Poor" (PEP) households were selected as the project's key targeted beneficiaries.

Figure 1: Map of SHOUHARDO II program area



Targeting associated with the RCT of the PM2A programming approach

Embedded within the SHOUHARDO II project design was a Randomized Controlled Trial (RCT) implemented in order to evaluate the relative effectiveness of two approaches to targeting Maternal and Child Health and Nutrition interventions. These are: the Maternal and Child Health and Nutrition/PEP (MCHN/PEP) approach, established with SHOUHARDO I, and the Preventing Malnutrition in Children Under Two (PM2A) approach (FANTA-2, 2010). As summarized in Table 1, the MCHN/PEP approach includes only PEP households as participants in MCHN activities, including educational activities, child growth monitoring and food ration receipts (described below). By contrast, the PM2A approach includes as participants all eligible[2] women and children in project villages regardless of socio-economic status.

Table 1:Design of the randomized controlled trial to evaluate the relative effectiveness of the MCHN/PEP versus the PM2A approach

	RCT intervention arm 1: MCHN/PEP	RCT intervention arm 2: PM2A
PEP	Eligible to participate in MCHN and all other project interventions	Eligible to participate in MCHN and all other project interventions
Non-PEP	Not eligible to participate in any project interventions.	Eligible to participate in MCHN interventions only

SHOUHARDO II project villages were randomly selected (using a computer program) into the MCHN/PEP and PM2A intervention arms, with roughly 17 percent of villages chosen to follow the PM2A approach in order to facilitate the RCT research design (see map in Figure 1). The addition of the RCT to the project design means that some non-PEP households are included as project beneficiaries.

2.2 Project interventions

This section focusses on the SHOUHARDO II project's interventions that were implemented at the *household* level. Many project interventions were implemented at the community level and thus could not be directly evaluated using the household level data employed for this study. These include empowerment of the poor through the establishment of Village Development Committees, efforts to increase the accountability of local elected bodies and government service providers to the PEP, and the project's disaster preparation, response and mitigation and climate change adaptation activities.

Maternal and child health and nutrition (MCHN)

The SHOUHARDO II package of MCHN interventions was expected to most directly address the problem of chronic undernutrition in the project area. In line with global best practices of targeting the first 1,000 days of life, including the time in-utero and ending with the child's second birthday, to achieve sustained impact on nutritional status, the package prioritizes children under age 2 and pregnant and

[2] The eligibility criteria are based on children's ages and the pregnancy status of women (see Section 2.2.).

lactating women. During this time the child has increased nutritional needs to support rapid growth and development, is more susceptible to infections, and is completely dependent on others for nutrition, care and social interactions. Growth faltering typically begins during pregnancy and continues to about 24 months of age. The loss in linear growth is not recovered, and catch-up growth later on in childhood is minimal (UNICEF 2013).

A key component of the MCHN package was promotion of health and nutrition behavior change through nutrition education in two forms. The first was monthly "courtyard sessions" led by trained community health volunteers (CHVs)[3] with topics including optimal breastfeeding, complementary feeding and weaning practices, care for mothers during pregnancy and delivery, and hygiene practices. The second was cooking and feeding demonstration sessions. A third component of the package was monthly Growth Monitoring and Promotion sessions in which children's height and weight was monitored. Children whose growth was faltering received follow-up care from CHVs. A fourth MCHN intervention was the provision of monthly food rations to pregnant women, women with children under two, and children under two living in eligible households. The ration was provided both to fill gaps in nutritional intake and to provide an incentive to participate in behavior change activities. It contained wheat, vegetable oil and yellow split peas.

Integrated into these MCHN interventions were efforts to establish linkages with preventive and curative health and nutrition services, build capacity for community-based integrated management of childhood illnesses, and facilitate linkages of mothers with the Ministry of Health and Family Welfare program to provide micro-nutrient supplementation for pregnant and lactating mothers.

Women's empowerment

Although there have been gains in women's empowerment in Bangladesh in recent years, discrimination against women remains strong and pervasive in Bangladesh (Nosback, Champion and Mutahara 2014). At the start of the SHOUHARDO II project, very few women could make basic economic decisions on their own, their freedom of movement was restricted, only five percent earned cash income, and over a quarter had experienced some form of domestic violence in the previous year (Caldwell, Ravesloot and Smith 2011).

CARE's commitment to women's empowerment as a means of addressing underlying causes of child undernutrition is a distinguishing feature of the SHOUHARDO II design. The central intervention designed to do so was Empowerment, Knowledge and Transformative Action (EKATA) groups for promoting life-skills education, empowerment and social change. Made up of 20 women and 15 adolescent girls recruited from among interested community members, and facilitated bi-weekly by a paid volunteer, the groups provided a platform for empowering women and adolescent girls through education, solidarity, group planning, and rights advocacy. The EKATA intervention had a broad range of goals: increasing women's decision making power at household and community levels, reducing gender-based violence, raising awareness of educational entitlements for women and girls, building women's leadership, advocacy, and literacy skills, and consciousness-building around women's' rights in

[3] The CHVs were married women with children who were at least 20 years old with secondary education, previous experience in health related work and socially accepted by their community. They received a four-day training program as well as counseling and facilitation skills. For continued education and support, they gathered for a one-day meeting once per quarter and received technical support from CARE and partner NGO technical staff.

existing legislation and important social issues, including dowry, early marriage, divorce, and violence against women.

More directly focused on promoting the economic empowerment of women was the establishment of self-help savings groups. While men could be members of these groups, they were directed at women, and the majority of members were women. The groups provided a means for women to save for investment purposes, pool their incomes in times of need, and avoid taking loans from money lenders.

Note that another project intervention directed at women's empowerment in the long run was the establishment of Early Child Care for Development (ECCD) centers, preschools that introduce a learning process, flow of information, and preparation for entering formal schooling that has been traditionally denied to girls. An equal number of girls and boys are enrolled. In addition, parenting sessions are held for mothers and fathers with the aim of improving parenting skills, especially related to girls' enrollment in school. ECCD is not evaluated in this study as it is not expected to directly empower the current generation of women.

Livelihoods promotion: Core Occupational Groups

This set of interventions was designed to directly address food insecurity and poverty in the project area by increasing food production and incomes. Project beneficiary households were divided into four distinct Core Occupational Groups (COGs) based on asset holdings (availability of land, access to water bodies, and labor availability) for the receipt of packages of input support and training. The sets of interventions are:

(1) Crop production
Provision of seeds/seedlings, organic fertilizer and training in irrigation, field preparation and crop management to support the production of key field crops (e.g., rice, wheat and maize).

(2) Fisheries
Provision of fingerlings, lime, fish meal and fertilizer for fish culture, in addition to fish nets, boats, and aluminum patil/pots for fish capture.

(3) Comprehensive homestead development (CHD)
Provision of saplings, seeds, organic fertilizer for homestead gardens and animals (chickens, ducks and goats) and fencing for animal rearing

(4) Income generating activities (IGA)
Entrepreneur development and business management training; skill training based on selected trade.

Water and sanitation

Diarrheal disease is a key cause of child undernutrition in Bangladesh, with lack of access to safe water and sanitary latrines being its main structural cause (United Nations Integrated Regional Information Network (IRIN), 2010). At the start of the project, while 61 percent of households had access to safe water, only 26 percent had access to a sanitary latrine. This problem was addressed by assisting households in obtaining safe, arsenic-free drinking water through the installation of tube wells and arsenic testing, as well as access to sanitary latrines.

2.3 Participation in project interventions

Table 2 presents data on the percent of households in project villages with children under five that participated in each intervention by region.

Table 2: Participation in SHOUHARDO II project interventions, by region

	Coast	Haor	Mid Char	North Char	All
		(Percent of households)			
Mother and Child Health and Nutrition (MCHN)					
Courtyard sessions	63.9	66.7	64.3	67.2	66.3
Cooking/feeding sessions	53.2	56.7	63.0	67.5	61.1
Child growth monitoring	54.9	63.6	60.7	66.6	63.6
Food ration	62.0	61.9	57.3	55.2	58.9
All MCHN interventions (Full participation)	41.0	43.9	45.1	45.8	44.6
Any MCHN intervention	70.4	72.9	72.2	77.3	74.1
Women's empowerment					
Mother is EKATA group member	4.9	2.8	8.2	9.6	6.1
Mother is savings group member	10.8	10.3	8.7	9.5	9.8
Any empowerment intervention	14.3	11.8	14.0	15.6	13.6
Livelihoods promotion					
Crop production	11.3	12.1	16.1	10.2	12.1
Comprehensive Homestead Development (CHD)	29.5	28.6	17.5	20.8	24.2
Fisheries	6.4	6.5	2.1	5.6	5.5
Income generating activities (IGA)	20.9	23.7	28.0	26.9	25.3
Any livelihoods promotion intervention	66.2	67.4	58.2	58.5	62.9
Water and sanitation					
Any water and sanitation intervention	24.6	26.0	6.4	13.0	18.4
Any SHOUHARDO II intervention	77.8	78.9	80.2	81.0	79.8

Three-quarters of all households participated in at least one MCHN intervention over the life of the project, with roughly equal participation in the educational, growth monitoring, and food ration interventions. Near 45 percent of households participated in all four MCHN interventions, hereafter termed “full participation” in MCHN.

The next most commonly participated in intervention is livelihoods promotion, with a prevalence of 63 percent. Roughly a quarter of households participated in CHD and IGA, the most popular of the livelihoods promotion interventions. Twelve percent participated in crop production and only five percent in fisheries.

Participation of mothers living in households with children under five in EKATA was quite low, at six percent, perhaps due to the child care time constraints felt by these mothers. Participation in savings groups was somewhat higher, at 10 percent, giving a total overall participation prevalence in the two women’s empowerment interventions considered here of 14 percent. Finally, 20 percent of households participated in the project’s water and sanitation interventions.

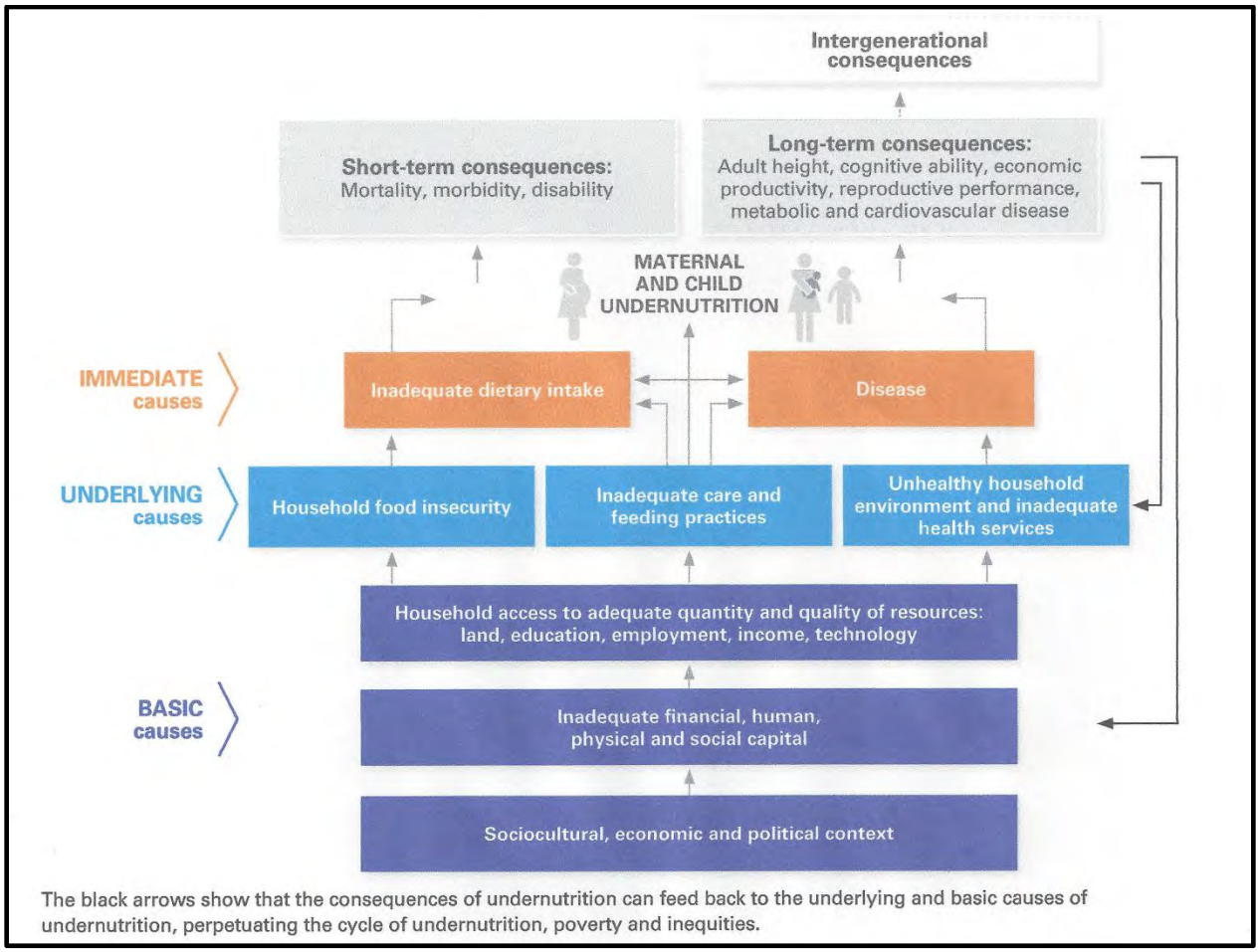
Overall, 80 percent of households living SHOUHARDO II project villages participated in the project's interventions in some form. Overall participation prevalences vary little across the four regions, although there are some substantial regional differences for membership in EKATA groups (higher in Mid and North Char) and participation in water and sanitation interventions (higher in Coast and Haor).

3. Conceptual framework and measurement of stunting and its determinants

3.1 UNICEF conceptual framework

The conceptual framework guiding this report's analysis is the UNICEF conceptual framework for the causes of maternal and child undernutrition (see Figure 2). The framework lays out the hierarchical relationship between the immediate, underlying, and basic causes of undernutrition.

Figure 2: UNICEF conceptual framework for the causes of maternal and child undernutrition



Source: UNICEF (2013).

The *immediate causes*, which manifest themselves at the level of the individual child, are inadequate dietary intake (energy, protein, fat, and micronutrients) and disease. These factors themselves are interdependent. A child with inadequate dietary intake is more susceptible to disease; disease in turn depresses appetite, inhibits the absorption of nutrients in food, and competes for a child's energy.

The *underlying causes,* which impact child nutritional status through the immediate causes, manifest themselves at the household level. The first is household food insecurity, or the inability of a household to access enough food of adequate quality for all of its members to live an active, healthy life. The second is inadequate quality of caring practices for children and their mothers. Examples of caring practices for children are child feeding, health-seeking behaviors, and cognitive stimulation. The most obvious aspect of care for women that affects children's nutritional wellbeing is care and support during pregnancy and lactation. Women are typically the main caretakers of children after birth, and in order to provide quality care they need continued adequate food consumption and health care, rest and measures to protect their mental health, such as protection from abuse. The third underlying cause is an unhealthy household environment and inadequate health services, which condition children's exposure to pathogens and the use of preventative and curative health care. Elements of a health environment include access to safe water, to sanitary facilities for disposing of human waste and to health services.

Physiologically, a mother's nutritional status is closely tied that that of her child. Adequate maternal nutrition and health are crucial to prevent child undernutrition. Pregnancy increases nutrient needs and is a time when illness and environmental and psychosocial stress can contribute to undernutrition of an unborn child through impaired fetal development and low birthweight. Undernourished girls have a greater likelihood of becoming undernourished mothers, who then have a greater likelihood of giving birth to a low birthweight baby, leading to an intergenerational cycle of undernutrition. The issue of maternal undernutrition is particularly important to take into account in Bangladesh, which has both a high prevalence of maternal undernutrition (24 in 2011) and low birthweight (22 in 2006) (UNICEF 2013).

Finally, the *basic causes*, which in turn impact nutritional status through the underlying causes, manifest themselves at broader geographical levels, such as national, regional or global. They form the economic, political, environmental, social and cultural context in which children's nutritional status is determined.

While the SHOUHARDO II project addresses some of the basic causes of child undernutrition, such as poverty and the disempowerment of women, this impact assessment focusses only on the underlying and immediate causes (in addition to stunting itself).

3.2 Measures of stunting and its determinants

In this section the measures of stunting and its determinants employed as dependent variables in this study are described. As noted in the introduction, one of the reasons the study includes analysis of the determinants of stunting in addition to stunting itself is because it helps understand the pathways through which stunting may have been influenced by the project. A second reason is that improvements in the determinants are necessary for bringing about improvements in children's nutritional health. Evidence that the project brought about such improvements thus give alternative

evidence regarding the impact of the project on stunting. In the case of the evaluation of SHOUHARDO II, the need for such alternative evidence is heightened: as discussed below (Section 4.2), the selection of households into the project's MCHN interventions was partially based on whether or not the household had a child under five who was undernourished. Statistically, this makes it more difficult to draw out the impact of the project on stunting itself.

3.2.1 Stunting

Stunting is a result of inadequate growth of the fetus and child and results in a failure to achieve expected height compared to a healthy, well-nourished child of the same age. It is a cumulative indicator of growth failure and a marker of chronic insufficient protein and energy intake, frequent infection, sustained inappropriate feeding practices, and impaired brain development (Black et al 2013; UNICEF 2013).

The rationale for employing stunting as an indicator of undernutrition for this impact evaluation is four-fold. First, it is a key SHOUHARDO II project outcome indicator against which progress towards project goals was assessed. Second, replacing underweight, it has become the consensus measure among the international community to mark the damage that is done from the interaction of poor diet and repeated infections (Black et. al. 2013; UNICEF 2013). Third, it is a measure of long-term, chronic undernutrition rather than undernutrition as a result of short-term fluctuations in dietary intake and/or health. It is thus particularly well suited to the evaluation of this project, which took place over more than four years. Fourth, stunting was more prevalent than either wasting (measuring acute undernutrition) or underweight (a composite measure of both chronic and acute undernutrition) at the start of the project and thus represented a more widespread problem.

The specific indicator employed as a dependent variable for this analysis is children's height-for- age z-score (HAZ) measured using data collected on height or length and months of age. A child is considered stunted if her or his HAZ is less than -2 standard deviations below the median of a global reference population of children who are well nourished and received key recommended caring practices. The current reference is the World Health Organization 2006 Child Growth Standards (de Onis et al. 2004).

3.2.2 Determinants of stunting

The selection of the determinants of stunting included in this analysis is guided by the conceptual framework presented above. It is also influenced by the project outcome and impact indicators included in its Indicator Performance Tracking Table (see TANGO 2015) as well as the statistical methods employed and data availabilities. The determinants include indicators of all three underlying causes of child undernutrition (food insecurity, inadequate caring practices, and an unhealthy household environment) and both immediate causes (inadequate dietary intake and disease). The variables are listed in Box 1 and described in detail in Appendix 1.

Box 1. Determinants of stunting employed as dependent variables

Household food security
- Number of months of adequate household food provisioning
- Household dietary diversity score
- Household hunger score

Caring practices for mothers during pregnancy
- Antenatal care during pregnancy
- Antenatal care in a medical facility during pregnancy
- More food during pregnancy
- More rest during pregnancy
- Vitamin A six weeks from delivery
- Iron/folic acid during pregnancy

Caring practices for children
- Mother's knowledge of hand washing at five critical times
- Safe disposal of feces of children 0-35 months
- Number of vaccinations received (0-23m)
- Vitamin A capsule in the last six months (6-23m)
- Monomix multivitamin supplement (6-23m)

Household health environment
- Access to safe water
- Access to sanitation

Mother's and children's food consumption
- Mother's dietary diversity
- Child minimum dietary diversity (6-23m)
- Child minimum meal frequency (6-23m)
- Child minimum acceptable diet (6-23m)

Children's health
- Child diarrhea (0-59m)

Mother's nutritional status
- Mother's Body Mass Index

Note: Variable definitions are given in Appendix 1.

4. Data

The data from two cross-sectional, population-based surveys of all households in SHOUHARDO II villages, whether eligible to participate in project interventions or not, are employed for this impact evaluation. The first is the project baseline survey, conducted between December 8, 2010 and January 2, 2011. The second is the project endline survey, conducted between November 17 and December 12, 2014. To ensure comparability, the data collection methodology was identical for the two surveys. The survey questionnaires, which can be found in Caldwell, Ravesloot and Smith (2011) and TANGO, International (2015), were designed by TANGO, International in collaboration with CARE Bangladesh and Food and Nutrition Technical Assistance-II. The data collection was conducted by Mitra and Associates and TANGO, International.

A two-stage, stratified sampling design was employed, with two levels of stratification. The first was a division of the SHOUHARDO II operational area into its four geographical regions – Coast, Haor, Mid

Char, and North Char – reflecting the distinct geographic areas where the project was implemented. The second level of stratification was into the two intervention arms defining the RCT embedded into the project's design: MCHN/PEP and PM2A, as described above. An equal number of villages and households were sampled in the resulting eight strata.

Following stratification, sampling took place in two stages. In the first, 25 villages were randomly chosen within each stratum using probability proportionate to size (PPS) sampling. In the second, 45 households were randomly selected in each village, for a total of 9,000 households.

Sample size calculations were based on ensuring the ability to detect a 10 percentage-point change in stunting prevalence between the project's baseline and endline surveys from a projected initial prevalence of 50%. Assumptions of a 95 percent confidence level, 80 percent power, and a design effect of 2.0 yielded a minimum sample size of 666 households per stratum. To keep the sample size reasonable, a single sample of households was selected to collect both socio-economic data (from all households) and health and nutrition data (needed only from households with children under five). To do so, the sample size factored in the proportion of the population in Bangladesh that is aged 6-59 months and the average household size. Applying the required sample size above to these factors plus adding in a 10 percent cushion to account for non-response yielded a final sample size of 1,119 households per strata, or a total of 8,952 households. The sampling of 45 households within 200 villages met this sample size requirement.

Only the data collected from households with children under five with valid anthropometric data were employed for this study. In these households, an index child was randomly chosen for collection of data on children's and mother's health and nutrition.[4] After cleaning of the anthropometric data, the analytic sample size for the study is 2,471 children under five (6-59 months) and 871 children under two (6-23 months). For household-level variables, such as the food security indicators, data are employed for households with children under six months as well, increasing the sample size to 2,844.

5. Impact evaluation methodologies

An impact evaluation is a study conducted in order to determine the extent to which changes in outcomes can be *attributed* to a project or intervention. Evaluating such attribution requires comparing what happened to the outcome *with* an intervention (the factual) to what would have happened to the outcome *without* it, the latter referred as the "counterfactual". The counterfactual is never known with certainty because the exact same participants in an intervention cannot **not** participate in it at the same time. Given this issue, two necessary conditions for an impact evaluation to be conducted in a rigorous manner are that (1) a non-participant control group be available so that a counterfactual can be identified; and (2) that the problem of selection bias be addressed (Waddington et. al. 2012). This latter

[4] For the baseline survey child anthropometric data were collected only for one index child in each household having a child under five. For the endline, following Food-for-Peace guidance, anthropometric data were collected for all children under five in each household, with data for other child-level variables being collected only for an index child. In this report's analysis of the endline data, only that for the selected index child is employed for two reasons. First, doing so allows valid comparisons of stunting prevalences over time (endline households with multiple children and thus greater child care burdens have greater representation than they do in the baseline). Second, for the impact analysis methods involving regression, it is not possible to properly control for intra-household correlations statistically when only some households are represented more than once.

problem arises because, in most cases, either purposeful targeting of project interventions to specific populations (e.g., the most poor) and/or self-selection of participants into interventions takes place. This renders the control group and the participant group fundamentally different from one another prior to the commencement of project activities (Waddington et. al. 2012; Khandker, Koolwal & Samad, 2010).

The SHOUHARDO II surveys are population based. Ample data for households that did not participate in the project's interventions at all or only in its MCHN activities— whether due to the PM2A RCT allocation mechanism or by choice—are available, thus providing a pool of potential control group households. Further, as outlined below, the endline survey was extended to allow collection of data necessary for addressing the problem of selection bias, that is, data on factors affecting households' participation in various interventions. A special effort was made to collect data on factors that are typically "unobservable", the exclusion of which can lead to bias in estimates of the impacts of interventions.

As described here, the data allow use of a variety of impact evaluation methodologies, including descriptive and regression-based methods, to determine whether and how the SHOUHARDO II project led to the 12.9 percentage-point reduction in the prevalence of stunting among children under five observed since the project's inception.

5.1 Descriptive methods

The first descriptive method is a comparison of the change in stunting in the project area with the change nationally over the same time period. This analysis is important for ruling out the possibility that the change in stunting in the project area was due to forces external to the project. Specifically, we examine the change in stunting among children under five living in eligible project households between the baseline and endline surveys compared to the change that took place for this age group in rural areas countrywide in recent years. The data used are from three nationally-representative Demographic and Health Surveys (DHS), those undertaken in 2004, 2007 and 2011 (NIPORT et al. 2005, 2009 and 2013) and a survey conducted in 2013 administered using the same methods as those of the DHS (Shahin et al. 2014).[5] Note that the project's population of 370,000 people is very small relative to that of Bangladesh as a whole (roughly 160 million), such that changes in the project area had negligible influence on the stunting prevalence country wide.

The second method is a comparison of the actual age trajectory of the stunting among a specific age cohort of children living in eligible project households compared to the projected age trajectory of that cohort at the time of the baseline, that is, before the project's activities commenced. The cohort is children who were 6-18 months old at baseline (in December 2010) and 48-60 months at endline (December 2014). Stunting typically shows a large increase over these age groups. Depending on whether their household actually participated in them, this cohort of children was exposed to the project's MCHN interventions for an average of 12 months and to the rest of its interventions for an

[5] This survey was conducted by the National Institute of Population Research and Training (NIPORT), the same organization that conducts Bangladesh's Demographic and Health Surveys. The sampling scheme was similar to that of the DHS to ensure comparability of data across the surveys.

average of three and a half years. We explore whether the change for these children shows an altered pattern from that projected at baseline.

The third method is a comparison of the changes in stunting and its determinants between the baseline and endline surveys for the group of households who were eligible to participate and the group who were not eligible to participate. This intent-to-treat (effect of treatment as assigned), difference-in-difference analysis allows determination of whether the eligible households did better than non-eligible households while taking into account any initial differences between the groups at baseline. By doing so it controls for any changes that took place in the project area that are not related to project interventions or that are only indirectly related to them through spillover effects. Spillover effects occur when an intervention has an impact on households that do not participate in it. Examples of how this could have occurred in the SHOUHARDO II project were MCHN behavior change messages and technical skills gained through COG groups being disseminated to non-participants by participants.

5.2 Instrumental variables regression analysis

Instrumental variables analysis is a regression technique that allows us to rigorously estimate the impact of participation in the SHOUHARDO II project using the endline survey data by correcting for systematic differences between the households that actually participated in it and those that did not. It does so by controlling for selection bias due to both observable factors affecting participation and outcomes and unobservables. Examples of such unobservable factors that are typically not measured are ability, entrepreneurship, attitudes towards risk, weather shocks, social capital, and pre-project outcome levels (Habicht et al. 2009; Gilligan and Hoddinott 2007; Linnemayr and Alderman 2011). By controlling for these factors we are ensuring that in our estimations only the causal effect is being identified, and that only the causal portion of the observed relationship is represented by regression coefficient estimates.

Of particular importance in the case of SHOUHARDO II is to control for the fact that the project's MCHN interventions were purposefully targeted towards households whose children were identified to be undernourished. These children's mothers were given greater priority by CHVs during the implementation of MCHN activities and special encouragement to participate in courtyard sessions, cooking/feeding sessions, and growth monitoring of their child (Wadud 2015). Given that food rations were used as an incentive to participate in the other interventions, these children's mothers were also probably more likely to receive a food ration than mothers whose children were not undernourished. The IV method corrects for this type of reverse causality, where the treatment variable itself is influenced by the outcome.

The basic regression model used to evaluate the impact of the SHOUHARDO II project on children's long-term nutritional status and other dependent variables is:

$$HAZ_i = \gamma T_i + \beta X_i + \varepsilon_{i,} \; i = 1, \ldots, \mathrm{n},$$

where T_i is a dummy variable equal to 1 if the household participated in the project, γ is the treatment effect, and the X_i are child, mother and household characteristics believed to influence outcomes. The term ε_i is the unobserved error term. If the decision to participate, T, is correlated with the error term, Ordinary Least Squares (OLS) regression will yield biased estimates of project impact. Two-stage least squares (2SLS) is used to correct for this bias. In the first stage, a set of instruments, Z, along with the

child, mother and household characteristics, X, are used to predict the treatment status of each household:

$$T_i = \delta Z_i + \beta X_i + \eta_i.$$

In the second stage, the predicted value of T is used to estimate project impact:

$$HAZ_i = \gamma \widehat{T_i} + \alpha X_i + \mu_{i,} \; i = 1, \ldots, \mathrm{n}.$$

The term γ measures project impact. The child, mother and household characteristics used as independent variables in the IV regression analysis (the X_i) are listed in Box 2. These variables are the typical observables found in reduced-form analyses of child undernutrition (e.g., Smith et al. 2003).

Box 2. Child, mother and household characteristics used as independent variables for Instrumental Variables/OLS regressions

Child characteristics
- Age in months, age-squared
- Whether child is a girl

Mother characteristics
- Mother's age
- Mother's education level a/
  - None
  - Primary
  - Secondary

Household characteristics
- Age of household head
- Whether household is headed by a female
- Education of household head a/
  - None
  - Primary
  - Secondary
- Occupation of household head:
  - Farming
  - Agricultural laborer
  - Non-agricultural laborer
  - Salaried employment
  - Self employment
  - Unpaid household work
  - Other
- Household size
- Household age-sex composition
  - Percent females 0-16, 16-30, and 30+
  - Percent males 0-16, 16-30, and 30+
- Well-being category at baseline
  - Extreme poor
  - Poor
  - Middle
  - Middle-rich
  - Rich
- Region of residence
  - Coast
  - Haor
  - Mid Char
  - North Char

a/ For models with a child or mother-level dependent variable, mother's education is employed. For models with household-level dependent variables, the education of the household head is employed.

With respect to the instrumental variables employed (the Z_i), a valid instrument must satisfy two conditions. First, the "relevance" condition specifies that the instrument must be sufficiently correlated with participation in the intervention. Second, the "overidentification" condition specifies that the instrument must only be correlated with the outcome of interest through T. That is, it must only affect the outcome through its effect on participation in the project and not through any other means (Bazzi and Clemens 2013; Baum, Schaffer and Stillman 2007).

The random allocation of villages into PM2A and MCHN/PEP groups discussed in Section 2.1.2 is an exogenous allocation mechanism underlying the planned treatment status of households that satisfies both conditions. As will be seen, planned treatment status has a strong correlation with actual participation and, for most of the dependent variables of this study, has no influence on outcomes except through influencing participation. Linnemayr and Alderman (2011) successfully used such planned treatment status as an instrument for actual treatment status in the case of an impact evaluation where significant deviation from the (randomized) planned treatment status occurred (see also Ten Have et al. 2008). As shown in Table 3, deviation from planned treatment status also occurred in the case of SHOUHARDO II. A substantial proportion of non-eligible households in MCHN/PEP villages participated in project interventions (35 percent of these households), and non-eligible households in PM2A villages participated in women's empowerment, livelihoods promotion and water and sanitation interventions.

Table 3: Planned versus actual treatment status, by type of intervention
(Percent of households participating in interventions)

	RCT intervention arm 1: MCHN/PEP				RCT intervention arm 2: PM2A			
	PEP		Non-PEP		PEP		Non-PEP	
	Eligible	Actual	Eligible	Actual	Eligible	Actual	Eligible	Actual
MCHN								
Any MCHN intervention	100	87.7	0	30.9	100	90.4	100	84.1
Received a food ration	100	75.1	0	6.5	100	79.1	100	73.8
Women's empowerment	100	17.5	0	2.5	100	19.4	0	7.9
Livelihoods promotion	100	86.3	0	7.8	100	85.4	0	6.2
Water and sanitation	100	21.6	0	6.8	100	25.3	0	19.4
Any SHOUHARDO II intervention	100	94.6	0	35.0	100	95.4		85.7

Note: Highlighted areas of table represent deviations from planned treatment.

In some cases the actual instrument employed here for IV testing and estimation is planned treatment status, while in others it is the PM2A status of the village of residence. These instruments are complemented by several others (specified in the IV results section below), as the use of multiple instruments is required for testing the overidentification condition.

While the main instruments employed are arguably correlated with participation and theoretically exogenous, statistical tests of the relevance and overidentification conditions are undertaken for formal verification. With regard to instrument relevance, a test of whether the instruments are strong enough to remove a substantial portion of the OLS bias if it exists is undertaken. The Kleibergen-Paap rk Wald first-stage F statistic is reported and compared to critical values developed by Stock and Yogo (2005) for weak-instruments hypothesis tests. The null hypothesis that the maximum bias in the coefficient

estimate for each potentially endogenous variable is greater than 5, 10 or 20 percent of the OLS bias is assessed. This test identifies cases of weak instruments, which can arise even when the correlations between the endogenous regressors and instruments are significant at conventional levels (5% and 1%). Next, Hansen's J test for overidentification of all instruments, which is robust to heteroskedasticity and within-group correlation, is conducted. If the J-statistic p-value is <0.1, the instruments are considered to not be valid.

Given relevant and valid instruments, the test for endogeneity employed and implementation of 2SLS is undertaken using the STATA command xtivreg2 developed by Schaffer (2010). Where testing indicates that the treatment variable is not endogenous, OLS is used for estimation rather than 2SLS.

5.3 Propensity score matching

The IV analysis can only be undertaken for participation in the SHOUHARDO II project as a whole and not for its individual interventions.[6] Yet knowledge of the impacts of individual interventions is needed to understand *how* the SHOUHARDO II project brought about a reduction in stunting if it in fact did. Was the reduction due solely to the MCHN "direct nutrition" interventions, including the monthly distributions of food aid, or did the interventions that addressed deeper causes and were likely to set in motion sustainable impacts contribute as well?

Using the endline survey data, this question is investigated using PSM to create comparable-on-observables control groups for each intervention from among households that did not participate in them to serve as the counterfactual. The impact of interventions is estimated using the difference in HAZ (and its determinants) between the control group and intervention group. To isolate the independent impact of each intervention, the fact that there may be differences in participation in the *other* project interventions across the participant and control groups is accounted for in the analysis. Note that for MCHN, the analysis relies on the "full participation" variable, defined as participation in all four MCHN interventions. Doing so allows construction of an adequately-sized control group.

The matching process in PSM takes place using measured indicators of characteristics that are believed to influence participation in an intervention as well as those influencing the outcome of interest. If these *observed* characteristics are the only ones influencing participation, the estimates are deemed unbiased and the important "conditional independence" condition is met. However, if *unobserved* characteristics also influence participation, then the estimates will be biased (Khandker, et al., 2010). The challenge then, is to collect data on the entire universe of such characteristics so that none can be deemed unobserved.

In addition to planned participation established at baseline (see Section 4.2), households' participation in SHOUHARDO II interventions was influenced by two broad factors: (1) targeting conducted by project administrators; and (2) households' and individuals' own decisions on whether to participate. As part of the SHOUHARDO II endline survey, data were collected for many of the determinants of participation and outcomes typically employed in conventional PSM impact analyses. These are the same variables used in the IV analysis (listed in Box 1).

[6] This is because the participation decision for individual interventions, as we will see in this report, was highly dependent on participation in other interventions. It is not possible to address the endogeneity of multiple treatment variables simultaneously in the context of this research project.

Others factors affecting participation are not typically measured, and are thus relegated to the "unobservables" category. For the SHOUHARDO II project these were identified to be the following: aspirations and confidence to adapt, peoples' time constraints, social capital, women's decision making power in their households, personal familiarity with project staff, and household shock exposure. To capture these factors and thus render them "observables", a module on factors affecting participation in the project was added to the endline questionnaire so that they could be explicitly included in the PSM analysis. Also important for a valid assessment of impact using PSM is that the characteristics affecting participation used for matching not be affected by project activities themselves. Given that panel data were not collected (that is, the baseline and endline surveys were not administered to the same households), retrospective recall was used to collect data on the characteristics that may have been affected by the project. That is, households were asked to answer questions regarding their current situation and then give information that allows estimation of the values of the variables as they were before the inception of the project (specifically, in 2009 or "five years ago").

Since each households' "well-being category" (extreme poor, poor, middle, middle-rich, and rich) was assigned before the baseline survey was administered, retrospective data are not needed for measuring initial socio-economic status. The variables used for matching are listed in Box 3 and described in detail in Appendix 2.

Box 3. PSM: Child, mother, household and village characteristics used for matching

Child and mother characteristics and household socio-demographic characteristics:
See Box 2

Other Household characteristics

- Current shock exposure/relative shock exposure in 2009
- Bonding social capital/relative bonding social capital in 2009
- Exposure to alternatives (outside of village)
- Absence of fatalism
- Number of SHOUHARDO II project staff known in 2009
- Leisure time in 2009
- Women's decision making score in 2009
- Participation in other interventions (than the one being evaluated)
- Receipt of a food ration from another project

Village characteristics

- Classified as extremely vulnerable at baseline
- Total number of households
- Whether CARE is implementing NGO
- Whether nearest town is greater than one walking hour away
- PM2A village

Baseline district mean child nutritional status

- Mean height-for-age z-score
- Mean weight-for-height z-score

For any intervention, PSM estimates of impact are generated in three steps. The first is to estimate a probit participation model using data on both participants and non-participants to compute a probability of participation, or "propensity score", for each household conditional on the observed characteristics. In the second step, participant households are matched with non-participant households based on similarity of propensity scores. An important condition for the success of this step is "common support". Participant households must be similar enough to non-participant households in the observed characteristics so that there are sufficient non-participant households close by in the propensity score distribution with which to make matches (Khandker, et al., 2010). Participant propensity scores that are higher than the maximum or lower than the minimum of the non-participant distribution are dropped. In the third step of PSM, the average value of the outcome variable of the matched participant and non-participant groups of households are compared to calculate an estimate of the impact of the intervention, or the "average treatment effect on the treated" (ATT).

Of the many techniques available, PSM is conducted here using kernel matching, for which each treated household is matched to a group of non-treated households with propensity scores within a certain radius.[7] The control group outcome is computed as a weighted average, with a lower weight given the greater is the propensity score difference from the treated household. The analysis is conducted using PSMATCH2 in STATA along with PSTEST to test for matching effectiveness (Leuven & Sianesi, 2003). Matching effectiveness is evaluated by conducting t-tests for equality in the mean values of the characteristics on which matching is based across the participant and matched non-participant groups of households. An overall summary measure is given by the p-value from a likelihood ratio test for the joint insignificance of the characteristics *after* matching (that is, using the matched sample only). If the characteristics are no longer jointly significant ($p>0.10$), then matching has succeeded.

[7] The radius depends on the bandwidth of the kernel. After finding that variations between 0.01 and 0.10 make little difference to the ATT estimates, a bandwidth of 0.05 is used for all estimates.

6. Results: Descriptive evidence of project impacts

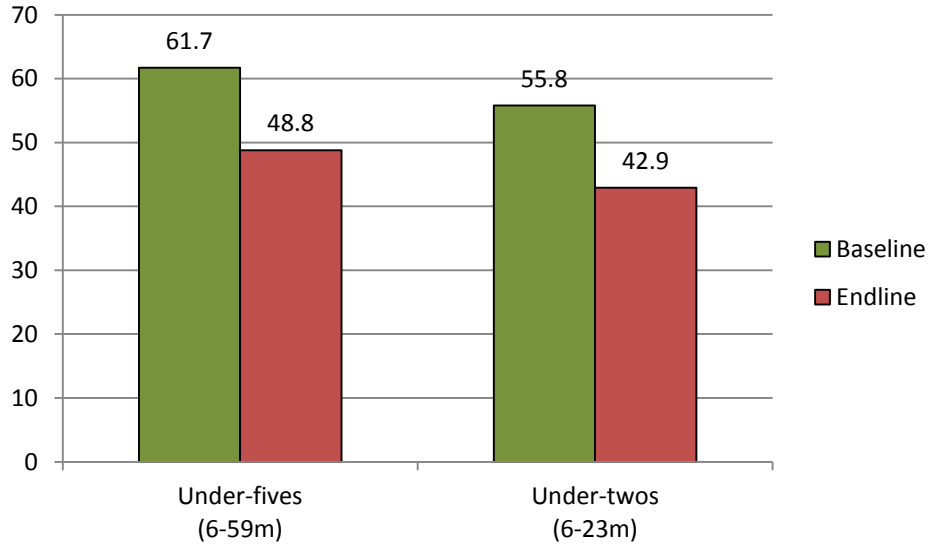
6.1 Trends in stunting among project households compared to nationally

Table 4 (also illustrated in Figure 3), reports the change in the prevalence of stunting between the SHOUHARDO II baseline and endline surveys. The prevalences for both under-fives and under-twos dropped by 12.9 percentage points. Because the under-two prevalence was lower at baseline than that for under-fives, the percentage change in stunting for under twos was somewhat higher. Note that in both age groups the prevalence was far higher for boys than for girls at baseline. However, the drop over the four years was also comparatively greater for boys, and thus the gap between boys and girls was narrowed considerably by baseline.

Table 4: Change in the prevalence of stunting between the SHOUHARDO II

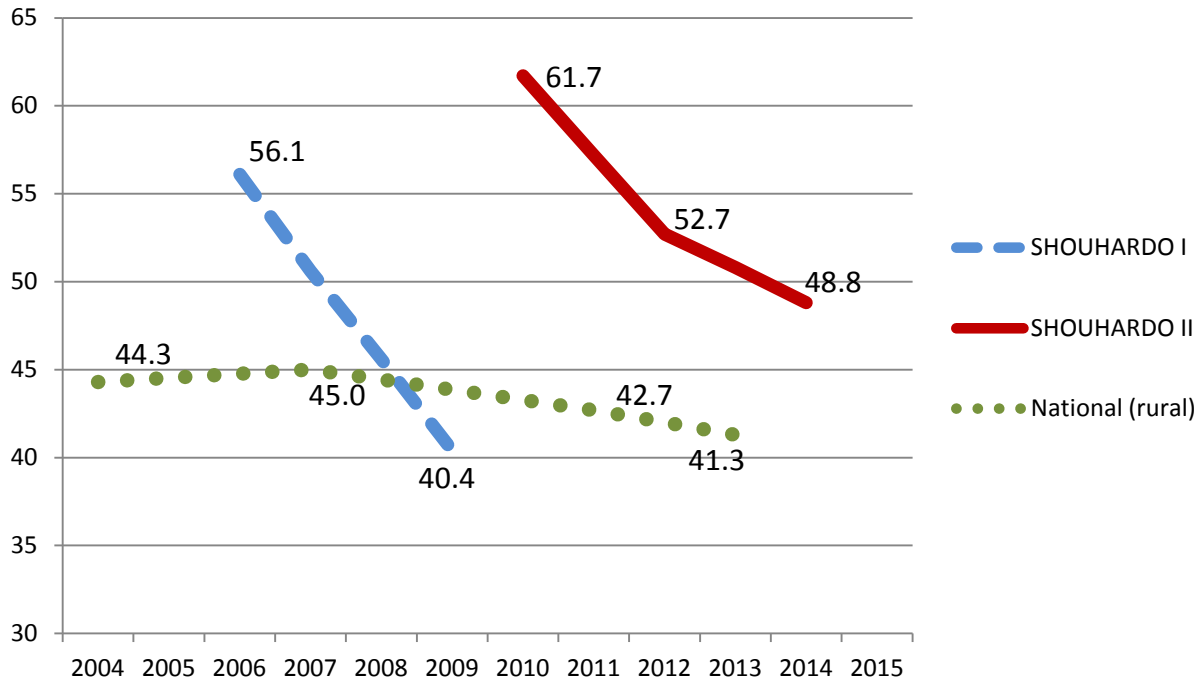
	Baseline (December 2010)	Endline (December 2014)	Difference	Percent difference
Under fives (6-59 m)				
All	61.7	48.8	-12.9	-20.9
Girls	56.5	47.8	-8.7	-15.4
Boys	66.1	49.7	-16.4	-24.8
Under twos (6-23 m)				
All	55.8	42.9	-12.9	-23.1
Girls	50.4	41.2	-9.2	-18.3
Boys	61.0	45.0	-16.0	-26.2

Figure 3: Change in the prevalence of stunting between the SHOUHARDO II baseline and endline surveys



A comparison of the change in the prevalence of stunting for under-fives among SHOUHARDO II's participant population with trends in rural Bangladesh is given in Figure 4. Although less than that of the SHOUHARDO I project,[8] compared to the national trend, the SHOUHARDO II population saw a rapid reduction over the period. The average annual decline was 3.2 percentage points while the trend in rural Bangladesh whole was 0.6 percentage-points per year. This comparative evidence rules out the possibility that the decline in stunting seen among the SHOUHARDO II project population was brought about by positive forces emanating from wider favorable economic, climatic or policy-related trends in the country.

Figure 4: Change in stunting prevalence among children under five: SHOUHARDO I and II



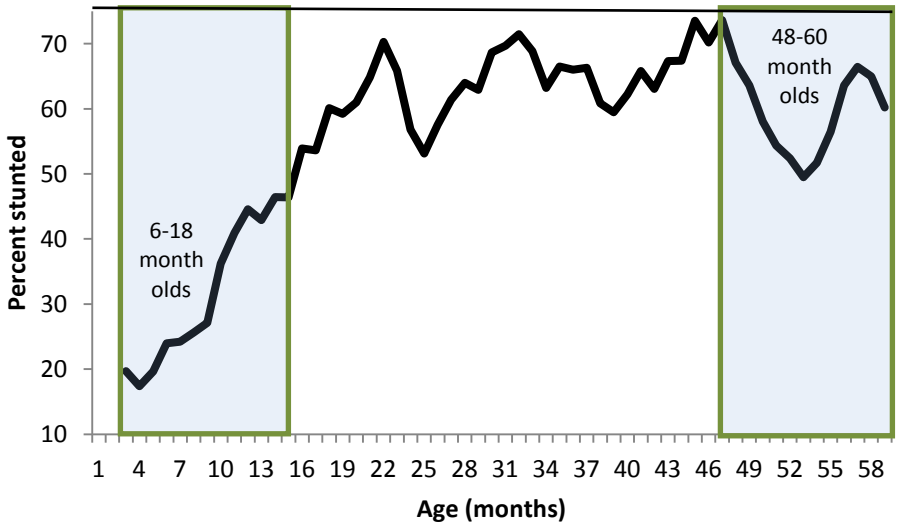
Sources: SHOUHARDO I data: Smith et al. (2012). SHOUHARDO II data: TANGO, International (2015). National (rural) prevalences: NIPORT et al. (2005, 2009, 2013) and Shahin et al.(2014).

[8] The total reduction for the SHOUHARDO I project was of 15.7 percentage points over 3.5 years, or 4.5 percentage points per year.

6.2 Shift in the age trajectory of stunting among project households

Following the typical pattern for children from poor households in developing countries, in Bangladesh there is normally a steep increase in stunting as children age over the six month to 2 year-old range. This increase is associated with poor weaning practices and exposure to infectious disease. Continued high prevalences for older age groups are due to the initial growth failure at younger ages as well as poor household food access (Beaton et al. 1990). The SHOUHARDO II baseline data exhibit this pattern, as can be seen in Figure 5.

Figure 5: Age trajectory of stunting among 0-59 month olds in project area at baseline



Source: SHOUHARDO II baseline survey.

Table 5 shows the pattern for Bangladeshi children in 2011, giving stunting prevalences for the age cohort of interest, the group of children who were 6-18 months old at the time of the baseline and 48-60 by the time of the endline. The prevalence was 30.5 among 6-18 month olds, rising to 41.9 for 48-60 month olds. By contrast, there was no increase in stunting prevalence among the children that had been exposed to SHOUHARDO II project interventions (the change was -0.6 percentage points). This finding is even more notable given that not all children in the 6-18 month group at baseline were exposed to the project's MCHN interventions for the full 18 month eligibility period (6-24 months), simply because they were not in the eligible age range for that long. For example, the 18 month olds were only exposed to project interventions for six months.

Table 5: Age trajectory of stunting among 0-5 year olds: Comparison of SHOUHARDO II participant children with Bangladeshi children

	Stunting among 6-18 month olds	Stunting among 48-60 month olds	Increase (percentage points)
Bangladeshi children (2011)	30.5	41.9	11.4
Project participant children	49.3 (baseline)	48.7 (endline)	-0.6

Source: Data for Bangladeshi children are from NIPORT et al. (2013).

We can deduce from this evidence that something happened to the children living in project households that prevented many of them from becoming stunted as they aged, an indication that the project's interventions plausibly led to a reduction in stunting.

6.3 Difference-in-difference analysis

As noted in Section 2.1, the SHOUHARDO II project was designed such that all households in project villages randomly assigned to the PM2A programming approach were eligible to participate in project interventions. By contrast, in MCHN/PEP villages, only the PEP were eligible to participate, leaving a group of non-eligible surveyed households that can serve as a control group for intent-to-treat comparison purposes. The group is non-PEP households in MCHN/PEP villages. As mentioned, this design was adhered to for the most part. We can thus compare the change over time between baseline and endline for the evaluation outcome indicators listed in Box 1 across the two groups while taking into account the baseline differences between them. Doing so allows us to gain some insight into whether the SHOUHARDO II project's interventions themselves led to any changes in the outcomes. This difference-in-difference analysis is presented in Table 6. Statistically significant differences between the baseline and endline at the 5% or lower level are indicated with a star (*).

Note first that, as would be expected given its higher economic status as a group, the non-eligible group started out at baseline with more favorable outcomes than the participant group. The only exceptions are for two indicators: safe disposal of feces and the percent of children 6-23 months with minimum meal frequency. By contrast, by the time of the endline survey, the eligible group was doing better than the non-eligible group for 16 of the 24 indicators despite starting out poorer than them.

It is also important to note that while eligible households' actual participation rate, at 94 percent, was quite high compared to non-eligible households, the participation rate for the latter was not negligible. Thirty-five percent of non-eligible households participated in the project. This means that we can expect to see some improvement for these groups associated with the project's interventions if the interventions are having a positive impact overall. It is also possible and likely that these households experienced the positive benefits of the project through spillover effects (see Section 5.2).

For almost every indicator, the absolute change over time was more favorable for eligible households than non-eligible households. That is, in the case of indicators for which an increase indicates better well-being, the increase was greater for eligible households. In the case of indicators for which a decrease indicates better well-being, the decrease was greater for eligible households. The indicators that improved the most for eligible versus non-eligible households are:

- The percent of mothers who received Vitamin A within six weeks of delivery;
- The percent of children 6-23 months who received Vitamin A in the last six months; and
- The percent of children 6-23 months with minimum dietary diversity.

There are two exceptions to these more favorable trends for eligible households: The percent of children with minimum meal frequency increased slightly more for non-eligible households, and the decline in the prevalence of diarrhea was greater for non-eligible households.

Table 6: Difference-in-difference analysis: Changes in child undernutrition and its determinants from baseline to endline for eligible versus non-eligible households

	Eligible households				Non-eligible households (Comparison group)				Difference in difference
	Baseline	Endline	Change		Baseline	Endline	Change		
Household food security									
Number of months of adequate food	6.3	11.1	4.8	*	8.6	11.4	2.8	*	**2.0**
Household dietary diversity	4.8	9.0	4.2	*	6.1	8.7	2.6	*	**1.6**
Household hunger score	2.00	0.33	-1.67	*	0.85	0.27	-0.58	*	**-1.1**
Caring practices for mothers during pregnancy (%)									
Antenatal care during pregnancy	48.0	86.7	38.7	*	60.8	80.6	19.8	*	**18.9**
Antenatal care in a medical facility	33.6	64.1	30.5	*	49.0	65.9	16.9	*	**13.6**
More food during pregnancy	13.1	58.5	45.4	*	18.1	51.6	33.5	*	**11.9**
More rest during pregnancy	23.6	66.2	42.6	*	27.0	57.3	30.3	*	**12.3**
Vitamin A 6 weeks from delivery	34.6	83.4	48.8	*	41.1	64.8	23.7	*	**25.1**
Iron/folic acid during pregnancy	45.4	86.6	41.2	*	49.3	74.4	25.1	*	**16.1**
Caring practices for children									
Hand washing at five critical times (%)	9.5	31.9	22.4	*	10.3	22.2	11.9	*	**10.5**
Safe disposal of feces (0-35m) (%)	47.2	69.3	22.1	*	46.5	60.7	14.2	*	**7.9**
No. of vaccinations received (0-23m)	5.8	7.0	1.2	*	6.4	6.9	0.5	*	**0.7**
Vitamin A capsule last 6m (6-23m) (%)	58.1	85.5	27.4	*	62.4	64.8	2.4		**25.0**
Child receiving Monomix (6-23m) (%)	2.4	31.7	29.3	*	2.6	14.4	11.8	*	**17.5**
Household health environment									
Access to safe water (%)	58.0	76.1	18.1	*	62.9	68.3	5.4		**12.7**
Access to improved toilet facility (%)	20.8	52.9	32.1	*	40.5	59.6	19.1	*	**13.0**
Mother's and children's food consumption (6-23m)									
Mother's dietary diversity	4.6	8.4	3.8	*	5.7	7.85	2.2	*	**1.7**
Child: minimum dietary diversity (%)	13.9	59.9	46.0	*	21.9	44.2	22.3	*	**23.7**
Child: minimum meal frequency (%)	47.4	63.2	15.8	*	36.1	52.3	16.2	*	**-0.4**
Child: minimum acceptable diet (%)	9.7	46.4	36.7	*	12.3	35.3	23.0	*	**13.7**
Children's health (%)									
Diarrhea in last two weeks (0-59m)	12.6	5.5	-7.1	*	17.4	6.1	-11.3	*	**4.2**
Mother's nutritional status									
Mother's Body Mass Index	19.5	20.4	0.9	*	20.0	21.4	1.4	*	**-0.5**
Child stunting (%)									
Under fives	61.7	48.8	-12.9	*	52.0	44.8	-7.2		**-5.7**
Under twos	55.8	42.9	-12.9	*	46.5	43.1	-3.4		**-9.5**

Notes: Stars represent statistical significance of the difference at the 5% or lower level.

The prevalence of stunting, our main indicator of interest, for children under five of eligible households declined by 12.9 percentage points, while that for children under five of ineligible households declined by only 7.2 percentage points. This yields a difference-in-difference of -5.7 . That for under-twos is even greater, at -9.5. These difference-in-difference results, along with those associated with the outcome variables that are determinants of stunting, are evidence that the SHOUHARDO II project interventions *caused* reductions in stunting among project participants. Because of the lack of a true randomized control group for this comparison, it is not possible to estimate the actual amount of the stunting reduction that was brought about. However, given the high participation in some project interventions by ineligible households and spillover effects, we can safely say that the difference-in-difference estimates are lower bounds on the amount of the stunting reduction caused by the project.

7. Results: Instrumental Variables evidence of project impacts

IV estimates of the impact of participation in SHOUHARDO II on height-for-age z-scores of children under five and under two are reported in Table 7. The instruments employed are: a dummy variable representing the planned treatment status of households and a dummy variable indicating whether or not the household is more than a one-hour walk to the nearest town, which was collected at the household level. Note that the instruments for all regressions reported in this section are listed in Appendix 3 and described in Appendix 2. The regressions in Table 7 satisfy the relevance condition (see Kleinbergen-Paap Walk F-statistic) and pass the overidentification test (chi-sq p-value>0.1), indicating they are valid for this analysis. The endogeneity test further indicates that participation is indeed endogenous (chi-sq p-value<0.1), and that 2SLS is thus the appropriate estimation technique.

The 2SLS regression coefficient for the specification using HAZ of under-fives as the dependent variable is 0.49 z-scores; that for under-twos is 0.71, 26 percent higher.[9] Both are statistically significant at the 5% level and provide further evidence that the project had a positive and substantial impact on HAZ for both age groups.

Figure 6 illustrates the results and shows those for boys and girls. The girl-boy difference is particularly stark for under-twos and indicates that the project had a much greater impact on boys' long-term nutritional status than girls, explaining why the decline in stunting prevalence over the project's operational period was so much higher for boys (see Table 4).

[9] For reference, the total increase in HAZ between the baseline and endline surveys was 0.41 z-scores for under-fives and 0.42 z-scores for under-twos.

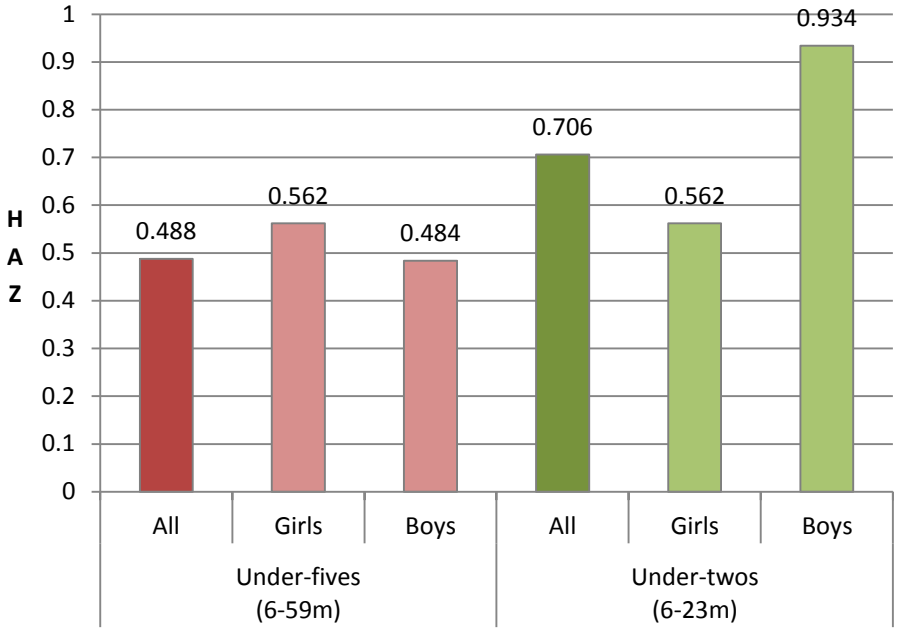
Table 7: Instrumental variables estimates of the impact of participation in the SHOUHARDO II project on children's height-for-age z-scores

	Under fives (6-59 months)			Under twos (6-23 months)		
	Coefficient (2SLS)	z-statistic		Coefficient (2SLS)	z-statistic	
Participation in SHOUHARDO II	0.488	2.37	**	0.706	2.20	**
Child's age	-0.055	-5.55	***	-0.133	-1.93	*
Child's age-squared	0.001	4.22	***	0.003	1.11	
Girl child	0.094	1.31		0.305	2.24	**
Mother's age	0.015	2.44	**	-0.002	-0.18	
Mother's education: None a/						
Primary	0.090	1.18		0.074	0.57	
Secondary	0.247	2.73	***	0.347	2.51	**
Age of household head	0.001	0.27		0.003	0.56	
Female household head	-0.117	-0.71		-0.096	-0.38	
Occupation of head: Farming a/						
Agricultural laborer	0.087	0.91		-0.013	-0.08	
Non-agricultural laborer	0.118	1.03		0.337	1.37	
Salaried employment	0.096	0.68		0.005	0.02	
Self employment	0.032	0.33		0.040	0.29	
Unpaid household work	0.311	1.62		0.375	1.34	
Other	0.092	0.84		0.159	0.87	
Household size	0.002	0.09		0.018	0.56	
Age-sex composition: % females 0-16 a/						
Percent females 16-30	0.010	2.31	**	0.006	0.66	
Percent females 30+	0.002	0.40		-0.007	-0.99	
Percent males 0-16	0.005	2.25	**	0.007	1.72	*
Percent males 16-30	0.006	1.96	**	0.005	0.78	
Percent males 30+	0.007	1.63		-0.003	-0.37	
Well-being category: Extreme poor a/						
Poor	-0.057	-0.56		-0.212	-1.07	
Lower middle	0.344	2.36	**	0.323	1.33	
Middle	0.309	1.96	*	0.127	0.46	
Rich	0.425	2.37	**	0.239	0.79	
Region: Coast a/						
Haor	-0.441	-5.16	***	-0.505	-3.64	***
Mid Char	0.008	0.09		-0.065	-0.41	
North Char	0.068	0.70		-0.066	-0.38	
Number of observations		2,475			871	
Weak instrument test						
Kleibergen-Paap rk Wald *F*-stat		110.3			43.5	
Maximal IV relative bias		b/			b/	
Overidentification test (chi-sq *p*-value)		0.899			0.317	
Endogeneity test (chi-sq *p*-value)		0.016			0.021	

a/ Reference category. b/ Maximal IV relative bias statistics not reported by STATA because the estimation is not sufficiently overidentified, rendering the test not well defined (Shaeffer 2012).

Notes: z-statistics are robust to heteroskedasticity and clustering by village. Stars represent statistical significance at the 10%(*), 5%(**) and 1%(***) levels.

Figure 6: Instrumental variables estimates of the impact of participation in the SHOUHARDO II project on children's height-for-age z-scores (HAZ)



Turning to the determinants of stunting, Table 8 reports the regression results for the measures of household food security. They indicate that the SHOUHARDO II project's interventions served to increase the number of months in which households had adequate food, to increase the diversity of households' diets, an indicator of dietary quality, and to reduce household hunger. Note that the regressions for household-level variables employ the education of the household head as a dependent variable while those for child and mother –level variables employ mother's education.

Table 9 reports results for the remaining determinants of stunting. In this table the dependent variables are listed in the far-left column, and the coefficient estimates are only reported for the impact of participation in the project. The next column to the right gives the estimation technique employed, which depends on the endogeneity test statistic. The relevance, overidentification, and endogeneity test statistics are given in the four far-right columns.

Among the underlying determinants, in addition to food security, the results indicate that the project's interventions led to improvements in the quality of caring practices for mothers and children and in household health environments. With regard to caring practices for mothers during pregnancy, they led to increases in antenatal care, increased the likelihood that mother will receive more food and rest during pregnancy, and increased Vitamin A and iron/folic acid supplementation among pregnant mothers. With regard to caring practices for children, they increased the use of hygiene practices by mothers and vitamin supplementation for children. The estimates suggest that they did not, however, serve to increase the number of vaccinations received by children. Finally, the results indicate that the increases in access to safe water among project households (see Table 6) were brought about by the project's interventions

Table 8: Instrumental variables estimates of the impact of participation in the SHOUHARDO II project on household food security

	Months of adequate food provisioning			Household dietary diversity score			Hunger score		
	Coefficient (2SLS)	z-statistic		Coefficient (2SLS)	z-statistic		Coefficient (2SLS)	z-statistic	
Participation in SHOUHARDO II	1.175	3.06	***	9.365	5.29	***	-0.444	-2.06	**
Age of household head	0.004	1.68	*	-0.007	-0.84		-0.003	-1.8	*
Female household head	-0.294	-1.63		-0.411	-1.04		0.331	1.88	*
Education of household head: None a/									
Primary	0.027	0.41		0.780	4.44	***	-0.018	-0.51	
Secondary	0.214	2.96	***	0.869	3.36	***	-0.050	-1.1	
Occupation of head: Farming a/									
Agricultural laborer	-0.495	-5.54	***	-0.566	-2.42	**	0.213	3.83	***
Non-agricultural laborer	-0.429	-3.59	***	-0.277	-0.97		0.173	2.64	***
Salaried employment	0.126	1.30		0.126	0.35		-0.118	-2.7	***
Self employment	0.045	0.62		0.052	0.22		0.033	0.63	
Unpaid household work	0.275	1.44		0.570	1.3		-0.261	-1.46	
Other	-0.240	-2.21	**	-0.610	-2.31	**	0.130	2.62	***
Household size	-0.041	-2.36	**	0.054	1.1		0.010	1.05	
Age-sex composition: % females 0-16 a/									
Percent females 16-30	0.010	3.02	***	0.032	3.55	***	-0.003	-1.25	
Percent females 30+	0.005	1.43		0.029	2.93	***	0.000	-0.08	
Percent males 0-16	0.001	0.78		0.005	1.08		0.000	-0.41	
Percent males 16-30	0.012	3.70	***	0.034	3.25	***	-0.003	-1.49	
Percent males 30+	0.010	2.59	***	0.043	3.32	***	-0.004	-1.75	*
Well-being category: Extreme poor a/									
Poor	0.345	3.56	***	-0.561	-2.25	**	-0.115	-1.89	*
Lower middle	0.795	5.21	***	1.819	3.23	***	-0.247	-2.7	***
Middle	1.058	6.40	***	2.828	4.25	***	-0.393	-3.86	***
Rich	1.338	6.80	***	4.150	5.02	***	-0.463	-3.95	***
Region: Coast a/									
Haor	0.116	1.07		-0.085	-0.24		0.009	0.16	
Mid Char	-0.053	-0.40		-0.900	-2.7		0.028	0.43	
North Char	-0.079	-0.57		-0.872	-2.15	**	0.127	1.87	*
Number of observations		2,844			2,844			2,844	
Weak instrument test									
Kleibergen-Paap rk Wald *F*-stat		59.6			15.7			59.6	
Maximal IV relative bias		5%			10%			5%	
Overidentification test (chi-sq *p*-value)		0.335			0.851			0.463	
Endogeneity test (chi-sq *p*-value)		0.001			0.000			0.016	

Notes: z-statistics are robust to heteroskedasticity and clustering by village. Stars represent statistical significance at the 10%(*), 5%(**) and 1%(***) levels.

Table 9: Instrumental variables/OLS estimates of the impact of participation in the SHOUHARDO II project on determinants of children's nutritional status

	Estim-ation method	Coeff-icient	z-statistic		N	Weak instrument test: Kleibergen-Paap rk Wald *F*-stat	Weak instrument test: Maximal IV relative bias	Overident-ification test (chi-sq *p*-value)	Endogen-eity test (chi-sq *p*-value)
Household food security									
Number of months of adequate food	2SLS	1.18	3.06	***	2,844	59.6	5%	0.335	0.001
Household dietary diversity	2SLS	9.37	5.29	***	2,844	15.7	10%	0.851	0.000
Household hunger score	2SLS	-0.44	-2.06	**	2,844	59.6	5%	0.463	0.016
Caring practices for mothers during pregnancy									
Antenatal care during pregnancy	2SLS	4.960	4.66	***	2,840	61.6	5%	0.311	0.000
Antenatal care in a medical facility	OLS	0.092	3.37	***	2,840	90.2	10%	0.754	0.710
More food during pregnancy	2SLS	1.010	3.55	***	2,829	24.9	10%	0.325	0.001
More daytime rest during pregnancy	2SLS	0.608	4.33	***	2,824	45.9	5%	0.190	0.000
Vitamin A within 6 weeks of delivery	OLS	0.307	4.71	***	2,730	110.7	a/	0.592	0.015
Iron/folic acid during pregnancy	2SLS	0.417	3.68	***	2,831	32.3	5%	0.161	0.013
Caring practices for children									
Hand washing at five critical times	2SLS	0.423	2.92	***	2,844	59.8	5%	0.129	0.004
Safe disposal of feces (0-35m)	2SLS	0.375	2.29	**	1,845	40.6	5%	0.220	0.078
No. of vaccinations received (0-23m)	OLS	-0.008	-0.07		918	16.7	5%	0.239	0.158
Vitamin A capsule last 6m (6-23m)	OLS	0.156	3.47	***	873	22.1	5%	0.700	0.612
Child receiving multivitamin (6-23m)	2SLS	0.537	3.30	***	871	21.4	5%	0.512	0.002
Household health environment									
Access to safe water	2SLS	0.276	3.70	***	2,844	92.4	5%	0.584	0.000
Access to an improved toilet facility	OLS	-0.019	-0.69		2,844	91.4	5%	0.204	0.147
Mother's and children's food consumption									
Mother's dietary diversity	2SLS	7.950	4.24	***	2,734	14.3	10%	0.925	0.000
Minimum dietary diversity (6-23m)	OLS	0.215	4.78	***	845	20.0	5%	0.140	0.649
Minimum meal frequency (6-23m)	2SLS	0.438	2.17	**	766	20.5	5%	0.747	0.065
Minimum acceptable diet (6-23m)	OLS	0.203	4.35	***	740	19.0	5%	0.338	0.317
Mother's nutritional status and food consumption									
Mother's Body Mass Index IV set 1	2SLS	1.870	1.75	*	2,522	39.0	5%	0.360	0.041
Mother's Body Mass Index IV set 2	OLS	-0.253	-0.10		2,522	93.3	a/	0.690	0.129
Children's health									
Diarrhea in last two weeks (0-59m)	2SLS	-0.002	-0.12		2,834	73	5%	0.791	0.528

a/ Maximal IV relative bias test statistics not reported by STATA because the estimation is not sufficiently overidentified, rendering the test not well defined (Shaeffer 2012).

Notes: z-statistics are robust to heteroskedasticity and clustering by village. Stars represent statistical significance at the 10%(*), 5%(**) and 1%(***) levels.

Turning to the immediate determinants of children' nutritional status, the IV evidence indicates that all four indicators of mother's and children's food consumption were positively impacted by the SHOUHARDO II project, including mother's dietary diversity and, for children, minimum dietary diversity, minimum meal frequency and minimum acceptable diet. The data give ambivalent results for mothers' nutritional status, with one set of instruments indicating a positive impact on mother's Body Mass Index and another indicating no impact. Lastly, the results indicate no impact of the project's interventions on diarrhea among children under five.

Overall these results suggest that the project had a positive impact on children's nutritional status and that this was brought about by:

- Increases in household food security;
- Improvements in the quality of caring practices for mothers during pregnancy;
- Increased use of hygiene practices by mothers;
- Increased vitamin supplementation for children;
- Improvements in access to safe water;
- Improved food consumption for mothers and children; and
- Possibly, improved nutritional status of mothers.

8. Results: Propensity Score Matching evidence on the impact of specific interventions

In this section, the PSM estimates of the average treatment effect on the treated (ATT) of the four intervention sets of focus—MCHN, women's empowerment, livelihoods promotion, and water and sanitation—are presented. As discussed in the methods section, underlying these estimates are probit-regression predictions of each household's propensity score for participating in the intervention of interest. The full participation regression results are presented in Appendix 4, but will be briefly summarized in each section here. Note that for each intervention the assessment is only undertaken for outcomes they would be expected to influence.

8.1 Mother and child health and nutrition interventions

Recall that the participation variable for the MCHN interventions indicates whether the household participates in all four MCHN interventions: courtyard sessions, cooking/feeding sessions, child growth monitoring, and receipt of a food ration. Forty-five percent of households in project villages did so, leaving an ample potential pool of households for matching. It was not possible to undertake analysis for each of the four interventions individually because of their high participation rates, which meant that a large enough pool of households for matching was not available.

The probit propensity score model for full participation in MCHN interventions given in Appendix 4, **Error! Reference source not found.** reveals that the following factors influenced households' and others' participation in MCHN interventions:

- Participation in the other three interventions
- Whether the household received a food ration from another project
- Household demographic characteristics: age and sex of the child, mother's and household head's age, education of household head, age-sex composition, region of residence
- Whether the household resides in a PM2A village
- Relative shock exposure in 2009
- Relative bonding social capital in 2009
- Number of SHOUHARDO II project staff known in 2009
- Mother's leisure time in 2009
- Baseline district-level HAZ and weight-for-height z-scores.

It is important to keep in mind that the PSM estimates are only able to account for observable, measured determinants of households' participation in interventions as opposed to the IV estimates, which are designed to account for observable and unobservable determinants. As such, the selection bias caused by targeting of MCHN interventions to mothers in households with children that are undernourished is not corrected for in the estimates presented here. This bias is likely to lead to underestimation of the impacts of the MCHN interventions on HAZ and other variables closely related to it in the hierarchy of causality, in particular, mothers' nutritional status. Baseline district-level anthropometric z-scores were included to help control for this selection bias. However, doing so is not likely to adequately control for *household*-level selection bias.

Table 10 presents the PSM results. The far-right column reports on the key statistic that allows one to assess the degree of matching quality. Matching is of adequate quality for all of the dependent variables of interest (chi-squared p-value>0.1). The percent of sample households falling in the common support is also very high. As illustrated in Figure 7 for the example of the number of months of adequate food provisioning, the common support condition is strongly satisfied. This figure shows the propensity score distribution of participating versus non-participating households, and that there are ample non-participating households with propensity scores close by in the distribution with which to be matched (with the exception of a few households having very high propensity scores). Note that matching quality and common support statistics, although not reported, are of adequate quality for all PSM results presented in the rest of Section 8.

The results point to a positive impact of MCHN participation on at least some aspect of all three underlying determinants of children's nutritional status. They indicate that they served to increase household dietary diversity, to improve all six caring practices for mothers and all five caring practices for children, and to increase access to sanitary toilet facilities. Among the immediate determinants, the results indicate that the MCHN interventions increased mothers' dietary diversity and the likelihood that a child has minimum dietary diversity.

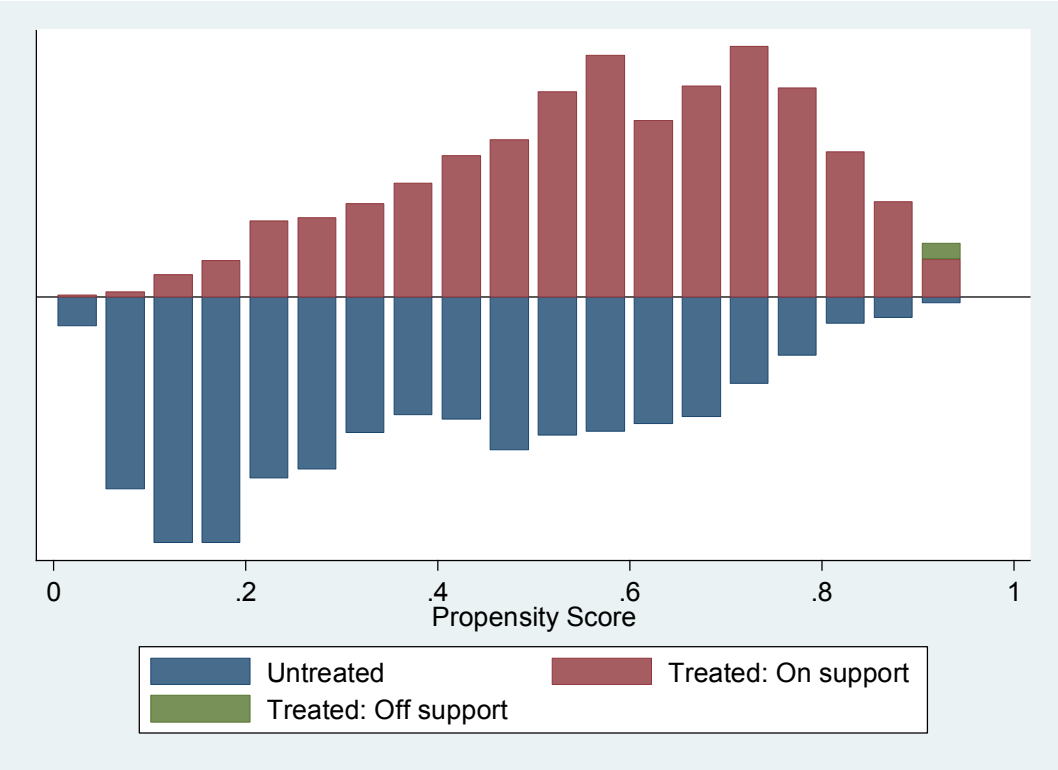
The PSM results indicate no impact of the MCHN interventions on children's HAZ and in fact a negative impact on mothers' body mass index. This is likely related to the negative selection bias discussed above.

Table 10: Propensity Score Matching estimates of the average treatment effect on the treated: Full participation in Mother and Child Health and Nutrition interventions

	Average treatment effect on the treated (ATT)	z-statistic		Number of observations		Percent of households on common support	Chi-squared *p*-value for matching quality
				Partici-pants	Controls		
Household food security							
Number of months of adequate food	0.047	0.73		1,331	1,494	99.7	1.00
Household dietary diversity	0.526	4.39	***	1,331	1,494	99.7	1.00
Household hunger score	0.015	0.46		1,331	1,494	99.7	1.00
Caring practices for mothers during pregnancy							
Antenatal care during pregnancy	0.083	5.78	***	1,332	1,490	99.7	99.9
Antenatal care in a medical facility	0.059	2.92	***	1,332	1,490	99.7	1.00
More food during pregnancy	0.085	3.58	***	1,331	1,480	99.8	1.00
More daytime rest during pregnancy	0.049	2.10	**	1,332	1,480	99.8	1.00
Vitamin A within 6 weeks of delivery	0.116	6.53	***	1,301	1,412	99.7	99.9
Iron/folic acid during pregnancy	0.095	5.95	***	1,332	1,481	99.8	1.00
Caring practices for children							
Hand washing at five critical times	0.105	5.09	***	1,331	1,494	99.7	1.00
Safe disposal of feces (0-35m)	0.140	5.29	***	967	866	99.8	0.99
No. of vaccinations received (0-23m)	0.471	3.07	***	483	421	99.0	0.62
Vitamin A capsule last 6m (6-23m)	0.122	2.42	**	475	382	98.4	0.94
Child receiving multivitamin (6-23m)	0.097	2.36	**	470	383	98.4	0.96
Household health environment							
Access to safe water	-0.023	-1.22		1,331	1,494	99.7	1.00
Access to an improved toilet facility	0.068	2.82	***	1,331	1,494	99.7	1.00
Mother's and children's food consumption							
Mother's dietary diversity	0.576	5.20	***	1,306	1,413	99.9	1.00
Minimum dietary diversity (6-23m)	0.095	1.76	*	451	374	97.7	0.96
Minimum meal frequency (6-23m)	0.005	0.11		415	322	96.2	0.98
Minimum acceptable diet (6-23m)	0.061	1.07		396	314	96.2	0.99
Children's health							
Diarrhea in last two weeks (0-59m)	0.012	1.52		1,331	1,491	99.9	0.98
Mother's nutritional status							
Mother's Body Mass Index	-0.475	-2.45	***	1,218	1,320	99.7	1.00
Children's height-for-age z-scores							
Under fives	-0.134	-1.44		1,278	1,414	99.9	0.96
Under twos	-0.033	-0.32		562	533	99.6	0.70

Notes: Stars represent statistical significance at the 10%(*), 5%(**) and 1%(***) levels.

Figure 7: Common support: Propensity scores of participant and non-participant households for full participation in MCHN interventions



Note: The dependent variable used for this example is number of months of adequate household food provisioning.

8.2 Women's empowerment interventions

The probit propensity score model for participation in the empowerment interventions is given in Appendix 4, Table 17. The following factors influenced households' and mothers' participation in these interventions:

- Participation in the other three interventions
- Whether the household received a food ration from another project
- Household demographic characteristics: child's age, gender and occupation of household head, age-sex composition, region of residence
- Household well-being category
- Whether the village of residence is classified as extremely vulnerable
- Total number of households in the village
- Whether CARE is the implementing NGO in the village
- Whether the household resides in a PM2A village
- Relative shock exposure in 2009
- Bonding social capital
- Number of SHOUHARDO II project staff known in 2009.

Table 11 presents the PSM results. Overall, they suggest that the empowerment interventions led to some important improvements in the areas of household food security, caring practices for mothers and children, mothers' food consumption, and children's health.

Membership in an EKATA group is associated with increased antenatal care during pregnancy, increased likelihood that a mother will receive vitamin A within six weeks of delivery, and knows the five critical times for hand washing. Note that the small sample of mothers participating in EKATA limits our ability to detect statistically significant results for this intervention, especially for the outcomes applying to children under two.

Membership in a savings group is positively associated with increased household and mother's dietary diversity and with reduced household hunger. With respect to caring practices, it increases post-delivery Vitamin A supplementation for mothers and the safe disposal of children's feces.

Together, the PSM results suggest that the women's empowerment interventions increase household food security, increase women's dietary diversity, lead to women consuming more food during their pregnancies and increase the likelihood that they will receive vitamin A supplementation. Women participating in the interventions are more likely to know about or practice hygienic behaviors, and perhaps this is why their children are less likely to have diarrhea.

It is important to keep in mind that some health and nutrition behavior change messages were reinforced in the EKATA groups. Thus it is not clear that the impacts seen here are due to this factor or to improvement in women's empowerment itself, an important subject for future research.

Here, again, no positive influence on HAZ can be detected.

Table 11: Propensity Score Matching estimates of the average treatment effect on the treated (ATT): Mother's participation in women's empowerment interventions

	Mother is a member of an EKATA group			Mother is a member of a savings group			Mother is a member of an EKATA group or a savings group		
	ATT	z-statistic		ATT	z-statistic		ATT	z-statistic	
Household food security									
Number of months of adequate food	0.136	1.25		0.133	1.29		0.065	0.83	
Household dietary diversity	0.373	1.50		0.514	2.92	***	0.547	3.28	***
Household hunger score	0.001	0.02		-0.089	-1.89	*	-0.080	-1.91	*
Caring practices for mothers during pregnancy									
Antenatal care during pregnancy	0.046	1.76	*	0.006	0.3		0.025	1.40	
Antenatal care in a medical facility	-0.01	-0.35		0.014	0.44		0.024	0.90	
More food during pregnancy	0.045	1.19		0.053	1.43		0.048	1.80	*
More daytime rest during pregnancy	0.057	1.35		0.036	1.27		0.023	0.91	
Vitamin A within 6 weeks of delivery	0.048	1.72	*	0.068	3.27	***	0.064	2.97	***
Iron/folic acid during pregnancy	0.004	0.14		0.015	0.67		0.013	0.76	
Caring practices for children									
Hand washing at five critical times	0.094	2.19	**	0.008	0.28		0.034	1.62	
Safe disposal of feces (0-35m)	0.026	0.67		0.077	2.08	**	0.082	2.51	**
No. of vaccinations received (0-23m)	0.247	0.99		0.093	0.41		0.245	1.33	
Vitamin A capsule last 6m (6-23m)	0.007	0.12		0.008	0.16		0.028	0.66	
Child receiving multivitamin (6-23m)	-0.05	-0.55		-0.019	-0.33		-0.014	-0.30	
Mother's and children's food consumption									
Mother's dietary diversity	0.280	1.23		0.610	3.24	***	0.550	4.58	***
Minimum dietary diversity (6-23m)	0.056	0.58		-0.028	-0.32		0.011	0.18	
Minimum meal frequency (6-23m)	0.038	0.37		0.012	0.15		0.038	0.57	
Minimum acceptable diet (6-23m)	0.105	0.96		0.046	0.68		0.103	1.57	
Children's health									
Diarrhea in last two weeks (0-59m)	-0.01	-0.93		-0.021	-1.63		-0.026	-2.80	***
Mother's nutritional status									
Mother's Body Mass Index	-0.21	-0.07		-0.134	-0.53		-0.236	-0.98	
Children's height-for-age z-score									
Under fives	-0.06	-0.43		-0.109	-0.96		-0.065	-0.73	
Under twos	-0.21	-0.73		0.020	0.09		0.043	0.25	

Notes: Stars represent statistical significance at the 10%(*), 5%(**) and 1%(***) levels.

8.3 Livelihoods promotion interventions

The following factors influenced households' and mothers' participation in the four livelihoods promotion interventions, that is, all or one of: Crop production, CHD, Fisheries and IGA (see Appendix 4, Table 18):

- Participation in the other three interventions
- Whether the household received a food ration from another project
- Household demographic characteristics: mother's and household head's age and education, occupation of household head, age-sex composition, region of residence
- Household well-being category
- Whether the household resides in a PM2A village
- Current bonding social capital and relative bonding social capital in 2009
- Number of SHOUHARDO II project staff known in 2009
- Index of leisure time[10]
- Women's decision making score in 2009
- Baseline district-level HAZ.

The PSM results (Table 12) suggest that the livelihoods promotion interventions had an impact on household food security, mother's and children's food consumption, and mother's nutritional status. All four of the interventions had a positive impact on either household dietary diversity or mother's dietary diversity. Two of the interventions had a positive impact on both: CHD and Fisheries. Fisheries additionally served to reduce household hunger and increase the likelihood of a child having minimum dietary diversity. The analysis suggests that two of the interventions lead to improvements in mothers' body mass index: CHD and Fisheries.

[10] This index refers to the leisure time of the respondent for Part I of the questionnaire, which was typically either the household head or the spouse of the household head.

Table 12: Propensity Score Matching estimates of the average treatment effect on the treated (ATT): Participation in livelihood promotion interventions

	Crop production			Comprehensive Homestead Development			Fisheries			Income Generating Activities			Any agriculture/ income generation intervention		
	ATT	z-statistic		ATT	z-statistic		ATT	z-statistic		ATT	z-statistic		ATT	z-statistic	
Household food security															
Months of adequate food	0.045	0.35		0.054	0.41		-0.09	-0.47		-0.09	-0.69		-0.012	-0.12	
Household dietary diversity	0.646	2.30	**	0.612	2.15	**	0.566	1.37		0.64	2.74	***	0.756	3.46	***
Household hunger score	0.015	0.23		0.036	0.50		-0.28	-1.81	*	0.064	0.85		0.014	0.18	
Mother's and children's food consumption															
Mother's dietary diversity	0.354	1.3		0.448	2.19	**	0.728	2.26	**	0.253	1.04		0.464	2.27	**
Minimum dietary diversity (6-23m)	0.067	0.67		0.104	1.11		0.205	1.68	*	0.07	0.70		0.069	0.74	
Minimum acceptable diet (6-23m)	0.036	0.28		0.055	0.45		-0.04	-0.26		-0.14	-1.14		-0.032	-0.29	
Mother's nutritional status															
Mother's Body Mass Index	-0.23	-0.64		0.590	1.99	**	0.807	1.76	*	0.42	1.38		0.430	1.55	
Children's height-for-age z-score															
Under fives	-0.04	-0.23		-0.15	-1.19		0.040	0.22		-0.06	-0.43		-0.059	-0.41	
Under twos	-0.15	-0.46		-0.15	-0.61		0.300	0.68		-0.20	-0.85		-0.117	-0.49	

Notes: Stars represent statistical significance at the 10%(*), 5%(**) and 1%(***) levels.

8.4 Water and sanitation interventions

Participation in water and sanitation interventions was influenced by (see Appendix 4, Table 19):

- Participation in the other three interventions
- Whether the household received a food ration from another project
- Household demographic characteristics: mother's education, occupation of household head, age-sex composition, region of residence
- Household well-being category
- Village characteristics: total number of households, CARE is the implementing NGO, walking distance to nearest town is greater than 1 hour, and village assigned to the PM2A intervention arm
- Relative shock exposure in 2009
- Number of SHOUHARDO II project staff known in 2009
- Index of leisure time[11]
- Women's decision making score in 2009
- Baseline district-level HAZ and weight-for-height z-score (WHZ).

Regarding the baseline district-level HAZ and WHA, interestingly, they are highly significant. The coefficient on HAZ is strongly negative and that on WHZ strongly positive.

According to the PSM results, the only outcome that the water and sanitation interventions had an impact on was access to sanitary toilet facilities, on which it had a positive influence.

Table 13: Propensity Score Matching estimates of the average treatment effect on the treated: Participation in water and sanitation interventions

	Average treatment effect on the treated (ATT)	z-statistic		Number of observations		Percent of households on common support	Chi-squared *p*-value for matching quality
				Partici-pants	Controls		
Caring practices for children							
Hand washing at five critical times	0.031	1.07		564	2,269	100	0.96
Safe disposal of feces (0-35m)	0.005	0.13		374	1,459	99.8	0.99
Household health environment							
Access to safe water	0.005	0.20		564	2,269	99.0	0.96
Access to an improved toilet facility	0.066	2.15	**	564	2,269	99.0	0.96
Children's health							
Diarrhea in last two weeks (0-59m)	0.004	0.34		562	2,259	99.9	1.00
Children's nutritional status							
Under fives	-0.009	-0.01		528	2,161	99.7	1.00
Under twos	-0.041	-0.23		207	879	98.8	1.00

Notes: Stars represent statistical significance at the 10%(*), 5%(**) and 1%(***) levels.

[11] This index refers to the leisure time of the respondent for Part I of the questionnaire, typically either the household head or the spouse of the household head.

9. Summary and conclusions

Overall, the evidence presented in this report indicates that the SHOUHARDO II project was very successful in reducing stunting among children under five. While it is not possible to pinpoint the exact amount of stunting reduction caused with accuracy, it seems likely that a large portion, if not all, of the 12.9 percentage–point reduction in the prevalence of stunting observed between the baseline and endline surveys can be attributable to the project.

Combined, the following findings support this conclusion:

- The average annual decline in the stunting prevalence among eligible project households was 3.2 percentage points while the trend in rural Bangladeshi households in recent years has been a lower 0.6 percentage points per year. This comparative evidence rules out the possibility that the decline among project children was due to positive forces emanating from wider favorable economic, climatic, or policy-related trends in the country.
- The normal large increase in stunting prevalence seen for children as they age from the 6-18 to the 48-60 month age group was not found for the group of children whose households participated in SHOUHARDO II interventions. Something happened that prevented many children from becoming stunted as they aged.
- A difference-in-difference (DID) analysis comparing the changes over time for eligible project households compared to non-eligible project households indicates that the stunting prevalence fell more for eligible households. The difference is particularly strong for children under two.
- Instrumental variables (IV) estimates of the impact of participation in the project confirm that it had a substantial, positive impact on children's height-age-z-scores, particularly for children under two and for boys.
- Propensity score matching (PSM) analysis indicates no impact of the project on child stunting. This can be attributed to the inability to control for a known, yet unobservable, factor affecting participation in the project's MCHN activities: the purposeful targeting of children who were already undernourished.
- The DID, IV and PSM analyses all indicate that the project's interventions led to improvements in a broad array of *determinants* of stunting, improvements which are necessary for reducing stunting.

The findings regarding project impacts on the determinants of stunting give insight into how the stunting reductions were brought about. Table 14 summarizes these findings from the various analyses. The left-hand panel focusses on the DID and IV analyses as well as the "single-difference" results, that is, the change from baseline and endline for eligible project households (reported in Table 6). The right-hand panel focuses on the PSM results for individual project interventions. Positive impacts revealed by a particular analysis are indicated by purple shading. Negative impacts are indicated by red shading.

Table 14's summary reveals that the stunting reductions were brought about by improvements in household food security, in the quality of caring practices for mothers during pregnancy, in the quality of caring practices for children, in household health environments, in mother's and children's food consumption and, most likely, in mother's nutritional status.

With respect to household food security, DID, IV and PSM evidence all indicate that the project's interventions increased household dietary diversity, an indicator of dietary quality, and reduced

Table 14: Summary of findings from single difference, difference-in-difference, instrumental variables, and propensity score matching analyses

	Evidence of impact of participation in the SHOUHARDO II project			Evidence of the impact of participation in project interventions (PSM)			
	Single difference	Difference -in- difference	IV/OLS	MCHN	Women's empower -ment	Livelihoods promotion	Water and sanitation
Household food security							
Number of months of adequate food							
Household dietary diversity							
Household hunger score							
Caring practices for mothers during pregnancy							
Antenatal care during pregnancy							
Antenatal care in a medical facility							
More food during pregnancy							
More daytime rest during pregnancy							
Vitamin A within 6 weeks of delivery							
Iron/folic acid during pregnancy							
Caring practices for children							
Hand washing at five critical times							
Safe disposal of feces (0-35m)							
No. of vaccinations received (0-23m)							
Vitamin A capsule last 6m (6-23m)							
Child receiving multivitamin (6-23m)							
Household health environment							
Access to safe water							
Access to an improved toilet facility							
Mother's and children's food consumption							
Mother's dietary diversity							
Minimum dietary diversity (6-23m)							
Minimum meal frequency (6-23m)							
Minimum acceptable diet (6-23m)							
Children's health							
Diarrhea in last two weeks (0-59m)							
Mother's nutritional status and food consumption							
Mother's Body Mass Index IV set 1							
Mother's Body Mass Index IV set 2							
Child height-for-age z-score							
Under fives							
Under twos							

Note: Purple shading indicates evidence of a positive impact for any of the interventions in an intervention set. Red shading indicates evidence of a negative impact. Single difference and difference-in-difference results are presented in Table 6. IV/OLS estimates are presented in Tables 7 through 9. PSM estimates are presented in Tables 10 through 13.

household hunger. The DID and IV analyses, but not PSM, indicate that they also led to increases in the amount of food households have access to, as measured by reported number of months of adequate food provisioning.

With respect to caring practices for mothers during pregnancy, all methods point to project impacts on antenatal care, including whether that care is received in a medical facility. They suggest that the project led to women consuming more food and getting more day-time rest during their pregnancies. Finally, because of the project more women are receiving vitamin A supplementation within six weeks of their delivery and iron/folic acid supplementation during their pregnancy.

The DID, IV and PSM results indicate that project interventions led to greater knowledge among mothers of the appropriate times for hand washing and an increase in the practice of safely disposing of children's feces. They also increased vitamin supplementation for children, including Vitamin A and multivitamin supplementation. While the DID and PSM results suggest that they increased child immunization, the IV evidence does not support this conclusion.

Different methods imply different project impacts in the area of household health environments. The DID and IV analyses suggest that the project brought about increased access to safe water, but not to sanitary toilet facilities. The DID and PSM analyses suggest that it brought about increased access to sanitary toilet facilities, but not to safe water. In all, while these results are incongruous, we can safely say that at least some of the improvement in household health environments seen between the baseline and endline surveys among eligible households (an increase in prevalences of 18.1 and 32.1 percentage points, respectively, for safe water and sanitary toilet facilities) can be attributed to the project.

With regard to food consumption, dietary diversity was enhanced not only for households as a whole but specifically for mothers and children as well according to all three types of analysis. The DID and IV analyses confirm that the large increase in the percent of children 6-23 months who have a minimum acceptable diet, from 10 to 46 percent, was at least partially caused by the project's interventions.

The evidence is ambiguous for diarrhea incidence among children under five. The DID analysis showed that the reduction in diarrhea prevalence seen for eligible project households from baseline to endline (from 12.6 to 5.5 percent) was less than for non-eligible households. While the PSM results indicate a favorable impact, the IV analysis indicates none.

Mother's BMI changed little over the project's implementation period. Yet the IV results give some evidence of a positive impact, and the PSM results that one of the project interventions (livelihoods promotion) had a positive impact. The negative PSM results seen for MCHN are likely due to a combination of the close relationship between mother's and children's nutritional status (see Section 3.1) and, again, the negative selection bias associated with the targeting of undernourished children. While the evidence presented in this report is not strong, it appears that the project likely led to some improvement in mothers' nutritional status.

The PSM results give insight into the question of *which* interventions brought about the reductions in stunting and improvements in its determinants. None of the interventions were found to improve children's nutritional status. Again, this is likely due to the inability of the PSM method to control for the (unobservable) targeting of undernourished children.

The PSM results suggest that the MCHN interventions had a broad influence, improving household, mother's and children's dietary diversity; *all* of the caring practices for mothers during pregnancy; *all* of the caring practices for children; and access to sanitary toilet facilities.

The women's empowerment interventions also facilitated improvements in a variety of determinants of stunting, including household and mother's dietary diversity, antenatal care during pregnancy, taking more food during pregnancy, post-delivery Vitamin A supplementation of mothers, and indicators of the knowledge and use of hygiene practices. The PSM results additionally suggest that they served to reduce hunger and prevent of diarrhea among children.

The livelihoods promotion activities increased household, mother and children's dietary diversity and reduced household hunger. According to the PSM results, that they also improved mothers' nutritional status. Finally, the project's water and sanitation interventions are found to have increased access to sanitary toilet facilities.

In conclusion, this report finds that the SHOUHARDO II project was successful in reducing child stunting. Two factors that contributed to its success were: 1) it addressed a broad range of underlying and immediate causes of chronic undernutrition; and 2) the integrated approach that brought to bear not only nutrition-specific MCHN interventions to address the problem, but also interventions designed to empower women, to promote households' livelihoods, and to improve households' health environments.

Suggested areas for future research are whether the project's women's empowerment interventions actually empowered women and whether the SHOUHARDO II project was able to shield households and children from the impacts of climate shocks.

Appendix 1. Determinants of stunting employed as dependent variables: Variable descriptions

Variable	Description
Household food security	
Number of months of adequate food	The number of months of months in the previous year that the household had adequate food, as reported by the member responsible for preparing food (Bilinsky and Swindale 2010).
Household dietary diversity	Number of food groups, out of 15, from which food was consumed by any household member in the previous 24 hours.
Household hunger score	A score assigned based on the frequency of occurrence of three situations in the last four weeks (no food to eat of any kind in household, going to sleep at night hungry, going a whole day and night without eating), with frequency scores of no=0, rarely or sometimes=1, and often=2. The scale ranges from 0 to 6 (Ballard et al. 2011).
Caring practices for mothers during pregnancy	
Antenatal care during pregnancy	Mother received antenatal care during current or recent pregnancy.
Antenatal care in a medical facility	Mother received antenatal care during current or recent pregnancy in a medical facility (government hospital, other government health facility, private hospital/clinic, or community clinic).
More food during pregnancy	Mother indicated she took more food than she usually takes during current or recent pregnancy.
More rest during pregnancy	Mother indicated she took more daytime rest than she usually takes during current or recent pregnancy.
Vitamin A 6 weeks from delivery	Mother received Vitamin A within one and a half months of delivery of child.
Iron/folic acid during pregnancy	Mother took iron and folic acid during the last pregnancy.
Caring practices for children	
Hand washing at five critical times	Mother indicated it is important to wash hands at all five of the following critical times: before eating, before breastfeeding/feeding child, before cooking/preparing food, after defecation/urination, after cleaning child that defecated/changing child diaper.
Safe disposal of feces (0-35m)	Mother of child 0-35 months indicated that the last time her child defecated it was in toilet or the feces was disposed of in toilet.
Number of vaccinations received (0-23m)	Total number of vaccinations received, out of a total of eight (BCG, Polio 1, 2 and 3, DPT/Penta 1, 2 and 3, and measles) by child 0-23 months.
Vitamin A capsule last 6m (6-23m)	Mother of child 6-23 months indicated they gave child a Vitamin A capsule in the last six months.
Child receiving Monomix (6-23m)	Mother of child 6-23 months indicated they are giving child Monimix or other sprinkles packets in food.
Household health environment	
Access to safe water	Household has access to water from one of the following sources: hand tube well, tara pump, deep tube well, shallow tube well, ring well/indara, piped water, pond sand filter, or rainwater harvesting system. The water must be normally available from the source and it must not have been unavailable for a day or longer in the two weeks preceding the survey.
Access to an improved toilet facility	Household has access to a ring-slab/offset latrine with a water seal, a pit latrine that is covered, a septic latrine, or a local adopted hygienic latrine.

Mother's and children's food consumption (6-23m)	
Mother's dietary diversity	Number of food groups, out of 15, from which food was consumed by mother in the previous 24 hours.
Child: minimum dietary diversity	Child consumed food from at least four out of seven food groups in the previous 24 hours. The seven food groups are: grains; roots and tubers; legumes, nuts and pulses; milk and dairy products; eggs; flesh foods (meat, fish, poultry and liver/organ meats) (WHO 2008).
Child: minimum meal frequency	Breast fed children 6-23 months who either consumed two meals a day (6-8 month olds) or three meals a day (9-23 month olds) (WHO 2008).
Child: minimum acceptable diet	Breastfed children with both minimum dietary diversity and minimum mea frequency (WHO 2008).
Children's health	
Diarrhea in last two weeks (0-59m)	Child 0-59 months had diarrhea (3 or more loose stools in 24 hours) in the last two weeks.
Mother's nutritional status	
Mother's Body Mass Index	Mother’s weight divided by height-squared.

Appendix 2. Household, village and district-level characteristics used for Propensity Score Matching analysis: Variable descriptions

Basic child, mother and household demographic characteristics included in all PSM analyses are the same as those used in the Instrumental Variables analysis and are described in Box 2. This appendix describes additional characteristics used for PSM matching.

Variable	Description
Household characteristics	
Current shock exposure	Total number of shocks experience in the past 12 months from among four types of climate shocks, five types of family event shocks, and four types of economic shocks.
Relative shock exposure in 2009	For each of the three types of shock, endline survey respondents were asked to answer the question "Do you feel that the situation was better, the same or worse five years ago (before SHOUHARDO II began) than it is now with regards to these kinds of shocks?". Answers to the three questions were then combined into an additive index ranging from 3 to 9, with higher numbers indicating an increasingly better shock exposure situation in 2009 than in the year prior to the endline survey.
Exposure to alternatives	An index calculated using Principal Components Analysis (PCA) based on answers to the following questions: (1) Does anyone in your household communicate regularly with at least one person outside this village?; (2) During the past week, has anyone in your household engaged in economic activities with members of other village? For example, farming, trading, employment, borrowing or lending money?; (3) How many times in the past month has anyone in your household got together with people to have food, either in their home or in a public place?; (4) How many days in the past month has anyone in your household attended a mosque or other religious service?; (5) In the last year, how many times has anyone in your household stayed more than two days outside this village? The first principal component was used for calculating the index.
Absence of fatalism	An index calculated using PCA based on a set of three dummy variables equal to 1 if the respondent indicated they agree with these statements: (1) When I get what I want, it is usually because I worked hard for it; (2) Some things that happen to me are God's will and some things are because of my own actions; (3) To be successful, above all one needs to be lucky. The second principal component (for which the variables correlated with the expected sign) was used for the index.
Number of SHOUHARDO II project staff known in 2009	The number of SHOUHARDO II staff members known by either the respondent or another household member before the project started.
Index of leisure time in 2009	After reporting on the hours spent in the "typical day in the last month" in a variety of non-leisure activities, respondents were asked "During the daytime do you spend time doing other things like socializing, watching TV, taking naps or reading?" and, if yes, to specify "On a typical day in the last month, how many hours did you spend in these kinds of "leisure" activities where you were not working? With this information as context, they were then asked to "Imagine ten steps, where on the bottom, the first step is a person who spends no time in the day doing these leisure activities, and on the highest step, the 10th, is a person who spends the whole day doing them. On

Variable	Description
	a typical day in the last month, which step were you on?". The respondent was shown a picture of a ladder with ten steps to point to. Finally, they were asked "Which step were you on five years ago (before SHOUHARDO II began?". The answer to this question, ranging from 1 to 10, was used as an index of leisure time in 2009.
Index of leisure time of child's mother in 2009	Calculated as above, but for the index child's mother.
Decision making score of a women in the household in 2009	An adult women in the household was asked questions (without men present) about her ability to take part in 12 types of decisions, ranging from buying small food items, to moving to a shelter during a time of disaster. The possible responses were: Can decide alone, can decide with husband or other adult male family member, husband makes decision after discussion with wife, not involved in decision. The responses were used to create an index based on the mean across the various types of decisions, with only those included that the woman felt was applicable to her situation. Scores were calculated only for women reporting that at least five types of decisions were applicable to her situation.
Decision making score of child's mother in 2009	Calculated as above, but for the index child's mother.
Participation in other interventions	For each type of the four types of intervention, participation in other interventions is measured using three dummy variables equal to one if the household participated in the intervention and zero otherwise.
Receipt of a food ration from another project	A dummy variable equal to one if the household received a food ration from a project other than the SHOUHARDO II project.
Village characteristics	
Classified as extremely vulnerable at baseline	Dummy variable equal to one if the village was classified as extremely vulnerable by project administrators at baseline.
Total number of households	Total number of households in the village.
Whether CARE is the implementing NGO	Dummy variable equal to one if CARE is the implementing agency for the village (as opposed to another of the 16 Bangladeshi implementing NGOs).
Whether the nearest town is greater than one walking hour away	Average across households in the village of a dummy variable equal to one if household reports that the nearest town is greater than one hour away by walking.
PM2A village	Dummy variable equal to one if the village was randomly assigned to the PM2A intervention arm.
District mean child nutritional status at baseline	
District mean HAZ at baseline	Mean HAZ across households in each district calculated using the baseline survey data.
District mean WHZ at baseline	Mean WHZ across households in each district calculated using the baseline survey data.

Appendix 3. Instruments employed for Instrumental Variables tests and 2SLS regressions

Table 15: Instrumental variables used for endogeneity testing and 2SLS estimates of the impact of participation in the SHOUHARDO II project

	Planned treatment status of household	Household located in a PM2A village	Number of project staff knew in 2009	More than a 1 hour walk to nearest town	More than a 2 hour walk to Upazila head-quarters	Friend/ relative of Upazila elected leader	Absence of fatalism index	Shock exposure & relative shock exposure in 2009
Household food security								
Number of months of adequate food, household hunger score		x	x	x				
Household dietary diversity			x		x			x
Caring practices for mothers during pregnancy								
Antenatal care during pregnancy		x	x	X				
Antenatal care in a medical facility		x	x					
More food during pregnancy			x		x			
More daytime rest during pregnancy		x	x		x	x		
Vitamin A within 6 weeks of delivery	x				x			
Iron/folic acid during pregnancy		x			x			x
Caring practices for children								
Hand washing at five critical times, safe disposal of feces		x	x		x			
No. of vaccinations received, Vitamin A in last 6 m, Multivitamin		x	x	x				
Household health environment								
Access to safe water	x		x	x				
Access to an improved toilet facility	x		x		x			
Mother's and children's food consumption								
Mother's dietary diversity			x		x			x
Minimum dietary diversity, acceptable diet		x	x		x			
Minimum meal frequency (6-23m)		x	x	x				
Children's health								
Diarrhea in last two weeks (0-59m)	x			x	x			
Mother's nutritional status and food consumption								
Mother's Body Mass Index IV set 1		x	x		x		x	
Mother's Body Mass Index IV set 2	x				x			
Child height-for-age z-score								
	x			x				

Appendix 4. Probit propensity score models for participation in SHOUHARDO II project intervention

Table 16 Probit propensity score model estimation for full participation in SHOUHARDO II MCHN interventions

	Models with child-level outcomes (6-59 months) (1)			Models with child-level outcomes (6-23 months) (2)			Models with household-level outcomes (3)		
	Coefficient	z-statistic		Coefficient	z-statistic		Coefficient	z-statistic	
Participation in other interventions									
Women's empowerment	0.429	5.50	***	0.426	2.79	***	0.429	5.49	***
Livelihoods promotion	0.964	11.80	***	1.212	8.31	***	0.963	11.79	***
Water and sanitation	0.249	3.41	***	0.458	3.31	***	0.250	3.4	***
Food ration from other project	0.142	1.98	**	0.245	1.75	*	0.142	2.0	*
Child characteristics									
Child's age	0.047	7.14	***	0.153	2.44	**			
Child's age-squared	-0.001	-8.77	***	-0.005	-2.14	**			
Girl child	0.092	1.34		0.224	1.78	*			
Mother characteristics									
Mother's age	-0.010	-2.00	**	-0.010	-0.90				
Mother's education: None a/									
Primary	0.029	0.42		0.178	1.36				
Secondary	0.071	0.85		0.148	0.96				
Household characteristics									
Age of household head	-0.006	-2.13	**	-0.007	-1.54		-0.005	-1.75	*
Female household head	-0.112	-0.65		0.200	0.66		-0.027	-0.16	
Education of household head: None a/									
Primary							0.214	3.42	***
Secondary							0.135	1.71	*
Occupation of head: Farming a/									
Agricultural laborer	-0.013	-0.16		-0.177	-1.07		-0.008	-0.10	
Non-agricultural laborer	-0.057	-0.56		-0.103	-0.51		-0.023	-0.23	
Salaried employment	-0.076	-0.59		-0.120	-0.51		-0.092	-0.72	
Self employment	0.035	0.41		-0.020	-0.13		0.056	0.68	
Unpaid household work	-0.117	-0.63		-0.277	-0.84		-0.102	-0.57	
Other	0.048	0.48		0.052	0.29		0.064	0.68	
Household size	0.019	1.13		0.010	0.36		0.023	1.43	
Age-sex composition: % females 0-16 a/									
Percent females 16-30	-0.012	-3.21	***	-0.022	-2.74	***	-0.007	-2.25	**
Percent females 30+	-0.011	-2.96	***	-0.009	-1.29		-0.012	-3.26	***
Percent males 0-16	0.002	0.76		0.006	1.50		0.000	0.25	
Percent males 16-30	-0.006	-1.69	*	0.010	1.65	*	-0.003	-0.92	
Percent males 30+	-0.006	-1.54		0.008	1.06		-0.006	-1.45	
Well-being category: Extreme poor a/									
Poor	-0.082	-0.96		0.010	0.06		-0.039	-0.48	

Lower middle	-0.129	-1.01		0.128	0.54		-0.113	-0.93	
Middle	-0.208	-1.51		-0.196	-0.79		-0.151	-1.15	
Rich	-0.081	-0.49		-0.248	-0.80		-0.141	-0.89	
Region: Coast a/									
Haor	0.106	1.13		-0.036	-0.21		0.179	2.02	**
Mid Char	0.524	5.35	***	0.530	2.83	***	0.547	5.88	***
North Char	0.585	6.28	***	0.679	3.84	***	0.535	6.09	***
Village characteristics									
Classified as extremely vulnerable	0.054	0.89		0.070	0.61		0.084	1.45	
Total number of households	0.000	-1.19		0.000	-0.37		0.000	-1.35	
CARE is implementing NGO	-0.058	-0.46		-0.065	-0.25		-0.034	-0.28	
Nearest town > 1 hour away	-0.001	-0.49		-0.001	-0.28		0.000	-0.50	
PM2A village	0.394	7.08	***	0.513	4.95	***	0.360	6.78	***
Other potential participation determinants									
Current shock exposure	-0.025	-1.14		-0.001	-0.02		-0.032	-1.53	
Relative shock exposure in 2009	-0.048	-3.35	***	-0.082	-2.96	***	-0.047	-3.49	***
Bonding social capital (index)	-0.019	-0.67		-0.054	-0.99		-0.023	-0.85	
Relative bonding social capital in 2009	0.136	3.82	***	0.188	2.79	***	0.127	3.72	***
Exposure to alternatives (index)	-0.063	-0.27		-0.202	-0.46		-0.015	-0.07	
Absence of fatalism (index)	0.017	0.56		0.003	0.05		0.030	1.08	
Number of project staff known (2009)	0.032	2.29	**	0.002	0.08		0.026	1.97	**
Mother's leisure time index (2009)	0.014	1.05		-0.044	-1.72	*	0.012	0.93	
Decision making score of mother (2009)	0.004	0.28		-0.002	-0.06		0.002	0.16	
District mean child nutritional status (2009)									
Height-for-age z-score	-0.356	-1.96	*	-0.590	-1.48		-0.242	-1.40	
Weight-for-height z-score	-0.290	-1.67	*	-0.445	-1.35		-0.234	-1.41	
Number of observations	2,696			871			2,834		
Pseudo R-squared	0.207			0.276			0.172		

Notes: Stare represent statistical significance at the 1(*), 5%(**) and 1%(***) levels.
Dependent variables employed for example models: (1) height-for-age z-score; (2) dummy variable for whether child received a vitamin A capsule in the last 6 months; (3) months of adequate household food provisioning.

Table 17 Probit propensity score model estimation for full participation in SHOUHARDO II women's empowerment interventions

	Models with child-level outcomes (6-59 months) (1)		Models with child-level outcomes (6-23 months) (2)		Models with household-level outcomes (3)	
	Coefficient	z-statistic	Coefficient	z-statistic	Coefficient	z-statistic
Participation in other interventions						
MCHN	0.905	6.72 ***	1.067	4.01 ***	0.903	6.92 ***
Livelihoods promotion	0.467	4.30 ***	0.409	2.14 **	0.454	4.29 ***
Water and sanitation	0.139	1.69 *	0.105	0.68	0.152	1.91 *
Food ration from other project	-0.156	-1.87 *	-0.298	-1.82 *	-0.140	-1.72 *
Child characteristics						
Child's age	0.014	1.73 *	-0.070	-0.95		
Child's age-squared	0.000	-1.82 *	0.002	0.78		
Girl child	-0.067	-0.83	-0.061	-0.41		
Mother characteristics						
Mother's age	-0.002	-0.25	0.014	1.01		
Mother's education: None a/						
Primary	0.109	1.37	0.208	1.39		
Secondary	0.050	0.50	0.173	0.95		
Household characteristics						
Age of household head	0.001	0.38	-0.004	-0.56	0.002	0.48
Female household head	0.297	1.45	0.904	2.44 **	0.319	1.64
Education of household head: None a/						
Primary					0.071	0.95
Secondary					-0.032	-0.32
Occupation of head: Farming a/						
Agricultural laborer	0.160	1.60	0.485	2.60 ***	0.126	1.30
Non-agricultural laborer	0.081	0.68	0.255	1.11	0.073	0.63
Salaried employment	0.024	0.15	-0.570	-1.68 *	0.090	0.57
Self employment	0.032	0.31	0.100	0.53	0.026	0.26
Unpaid household work	-0.206	-0.92	-0.615	-1.51	-0.202	-0.95
Other	-0.129	-1.03	-0.240	-0.98	-0.130	-1.06
Household size	-0.003	-0.12	0.005	0.13	0.000	-0.02
Age-sex composition: % females 0-16 a/						
Percent females 16-30	-0.011	-2.18 **	-0.012	-1.21	-0.009	-2.19 **
Percent females 30+	-0.010	-2.10 **	-0.019	-2.04 **	-0.010	-2.21 **
Percent males 0-16	-0.001	-0.40	0.002	0.54	0.000	0.11
Percent males 16-30	0.002	0.48	0.004	0.55	0.003	0.74
Percent males 30+	0.008	1.51	0.023	2.43 **	0.009	1.84 *
Well-being category: Extreme poor a/						
Poor	-0.091	-0.92	0.076	0.38	-0.047	-0.49
Lower middle	-0.298	-1.75 *	0.040	0.13	-0.271	-1.63
Middle	-0.094	-0.53	0.108	0.34	-0.054	-0.31
Rich	-0.616	-2.24 **	-0.370	-0.69	-0.493	-1.92 *

Region: Coast a/						
Haor	-0.221	-1.96 *	-0.531	-2.33 **	-0.156	-1.43
Mid Char	-0.088	-0.74	-0.132	-0.60	-0.075	-0.65
North Char	-0.014	-0.13	-0.042	-0.21	0.002	0.02
Village characteristics						
Classified as extremely vulnerable	-0.169	-2.34 **	-0.043	-0.31	-0.173	-2.45 **
Total number of households	0.000	-3.75 ***	0.000	-1.39	0.000	-3.55 ***
CARE is implementing agency	0.286	2.00 **	0.908	3.28 ***	0.313	2.25 **
Nearest town > 1 hour away	-0.001	-0.66	-0.002	-0.94	-0.001	-0.85
PM2A village	0.109	1.64	0.201	1.60	0.120	1.83 *
Other potential participation determinants						
Current shock exposure	0.036	1.40	0.019	0.37	0.037	1.46
Relative shock exposure in 2009	0.054	3.26 ***	0.099	3.13 ***	0.055	3.47 ***
Bonding social capital (index)	0.090	2.56 **	0.109	1.62	0.081	2.37 **
Relative bonding social capital in 2009	-0.035	-0.83	-0.011	-0.13	-0.022	-0.54
Exposure to alternatives (index)	0.207	0.73	0.585	1.13	0.188	0.68
Absence of fatalism (index)	-0.004	-0.11	-0.084	-1.29	-0.011	-0.31
Number of project staff known (2009)	0.027	1.73 *	-0.011	-0.36	0.027	1.76 *
Mother's leisure time index (2009)	0.009	0.58	0.040	1.29	0.004	0.26
Decision making score of mother (2009)	0.002	0.12	-0.024	-0.75	0.003	0.21
District mean child nutritional status (2009)						
Height-for-age z-score	0.081	0.36	-0.040	-0.08	0.172	0.77
Weight-for-height z-score	-0.112	-0.53	0.034	0.08	-0.014	-0.07
Number of observations		2,696		871		2,834
Pseudo R-squared		0.124		0.186		0.120

Notes: Stare represent statistical significance at the 105**), 5%(**) and 1%(***) levels.
Dependent variables employed for example models: (1) height-for-age z-score; (2) dummy variable for whether child received a vitamin A capsule in the last 6 months; (3) months of adequate household food provisioning.

Table 18: Probit propensity score model estimation for participation in livelihoods promotion interventions

	Models with child-level outcomes (6-59 months) (1)			Models with child-level outcomes (6-23 months) (2)			Models with household-level outcomes (3)		
	Coefficient	z-statistic		Coefficient	z-statistic		Coefficient	z-statistic	
Participation in other interventions									
MCHN	1.140	12.62	***	1.420	8.03	***	1.143	13.21	***
Women's empowerment	0.452	4.14	***	0.435	2.19	**	0.450	4.23	***
Water and sanitation	0.519	5.07	***	0.301	1.65	*	0.481	4.92	***
Food ration from other project	0.237	2.44	**	0.142	0.75		0.228	2.44	**
Child characteristics									
Child's age	-0.002	-0.27		-0.088	-1.07				
Child's age-squared	0.000	0.71		0.003	1.23				
Girl child	-0.050	-0.55		-0.121	-0.70				
Mother characteristics									
Mother's age	0.012	1.81	*	0.011	0.79				
Mother's education: None a/									
Primary	-0.029	-0.33		-0.163	-0.98				
Secondary	-0.192	-1.83	*	-0.238	-1.21				
Household characteristics									
Age of household head	0.017	4.48	***	0.017	2.57	***	0.013	3.68	***
Female household head	0.189	0.90		0.161	0.39		0.163	0.80	
Education of household head: None a/									
Primary							-0.242	-3.09	***
Secondary							-0.306	-3.01	***
Occupation of head: Farming a/									
Agricultural laborer	0.215	1.93	*	0.457	2.12	**	0.203	1.90	*
Non-agricultural laborer	0.053	0.42		0.160	0.63		0.080	0.64	
Salaried employment	-0.010	-0.06		-0.106	-0.35		0.064	0.38	
Self employment	0.024	0.22		0.231	1.12		0.046	0.43	
Unpaid household work	0.056	0.24		0.026	0.06		-0.010	-0.04	
Other	0.126	0.97		-0.060	-0.25		0.156	1.24	
Household size	0.017	0.77		0.002	0.07		0.009	0.44	
Age-sex composition: % females 0-16 a/									
Percent females 16-30	-0.008	-1.65	*	-0.014	-1.32		-0.013	-2.99	***
Percent females 30+	-0.003	-0.56		-0.009	-0.89		-0.002	-0.41	
Percent males 0-16	-0.003	-1.03		-0.008	-1.54		-0.001	-0.70	
Percent males 16-30	-0.012	-2.83	***	-0.010	-1.24		-0.013	-3.27	***
Percent males 30+	-0.002	-0.48		0.007	0.69		-0.003	-0.53	
Well-being category: Extreme poor a/									
Poor	0.172	1.66	*	0.369	1.91	*	0.200	2.00	**
Lower middle	-2.236	-15.18	***	-2.386	-8.28	***	-2.147	-15.17	***
Middle	-2.278	-13.67	***	-1.991	-6.69	***	-2.119	-13.41	***
Rich	-2.975	-10.38	***	-3.138	-5.35	***	-2.765	-10.56	***
Region: Coast a/									
Haor	0.430	3.38	***	0.375	1.50		0.320	2.64	***
Mid Char	-0.162	-1.32		-0.426	-1.75	*	-0.179	-1.51	
North Char	-0.077	-0.66		-0.196	-0.86		-0.111	-1.00	

Table 18: Probit propensity score model estimation for participation in livelihoods promotion interventions

	Models with child-level outcomes (6-59 months) (1)			Models with child-level outcomes (6-23 months) (2)			Models with household-level outcomes (3)		
	Coefficient	z-statistic		Coefficient	z-statistic		Coefficient	z-statistic	
Village characteristics									
Classified as extremely vulnerable	-0.081	-1.05		0.054	0.35		-0.054	-0.73	
Total number of households	0.000	0.05		0.000	1.05		0.000	0.09	
CARE is implementing agency	0.066	0.39		-0.289	-0.86		0.026	0.16	
Nearest town > 1 hour away	0.001	1.04		0.002	0.84		0.001	1.19	
PM2A village	-0.148	-2.03	**	-0.142	-1.02		-0.165	-2.35	**
Other potential participation determinants									
Current shock exposure	0.027	1.00		-0.009	-0.16		0.035	1.30	
Relative shock exposure in 2009	0.007	0.37		-0.043	-1.17		0.010	0.53	
Bonding social capital (index)	-0.051	-1.43		0.011	0.16		-0.061	-1.76	*
Relative bonding social capital in 2009	0.181	4.12	***	0.213	2.52	**	0.190	4.40	***
Exposure to alternatives (index)	0.441	1.43		0.415	0.72		0.364	1.23	
Absence of fatalism (index)	-0.042	-1.15		-0.049	-0.68		-0.039	-1.12	
Number of project staff known (2009)	0.031	1.70		0.024	0.73		0.036	2.08	**
Leisure time index (2009)	0.023	1.32		0.061	1.85	*	0.015	0.90	
Women's decision making score (2009)	0.056	3.02	***	0.096	2.65	***	0.064	3.56	***
District mean child nutritional status (2009)									
Height-for-age z-score	0.465	1.94	**	0.840	1.47		0.294	1.29	
Weight-for-height z-score	-0.039	-0.17		-0.013	-0.03		-0.064	-0.28	
Number of observations	2,696				843			2,834	
Pseudo R-squared	0.529				0.565			0.521	

Notes: Stars represent statistical significance at the 10%(*), 5%(**) and 1%(***) levels.
Dependent variables employed for example models: (1) height-for-age z-score; (2) dummy variable for whether child has minimum dietary diversity; (3) months of adequate household food provisioning.

Table 19: Probit propensity score model estimation for participation in water and sanitation interventions

	Models with child-level outcomes (6-59 months) (1)			Models with child-level outcomes (6-23 months) (2)			Models with household-level outcomes (3)		
	Coefficient	z-statistic		Coefficient	z-statistic		Coefficient	z-statistic	
Participation in other interventions									
MCHN	0.568	5.30	***	0.541	5.27	***	0.539	5.28	***
Women's empowerment	0.144	1.70	*	0.153	1.85	*	0.149	1.81	*
Livelihoods promotion	0.522	4.72	***	0.482	4.57	***	0.484	4.61	***
Food ration from other project	0.244	3.14	***	0.248	3.28	***	0.248	3.29	***
Child characteristics									
Child's age	-0.001	-0.18		-0.001	-0.12				
Child's age-squared	0.000	0.14		0.000	0.19				
Girl child	0.096	1.21		0.100	1.30				
Mother characteristics									
Mother's age	0.005	0.81		0.005	0.87				
Mother's education: None a/									
Primary	-0.193	-2.50		-0.174	-2.33	**			
Secondary	-0.157	-1.63		-0.141	-1.50				
Household characteristics									
Age of household head	0.003	0.95		0.002	0.72		0.002	0.70	
Female household head	-0.004	-0.02		0.074	0.39		0.075	0.39	
Education of household head: None a/									
Primary							-0.085	-1.16	
Secondary							-0.051	-0.53	
Occupation of head: Farming a/									
Agricultural laborer	-0.287	-2.86	***	-0.265	-2.74	***	-0.250	-2.60	***
Non-agricultural laborer	-0.135	-1.14		-0.137	-1.19		-0.132	-1.16	
Salaried employment	-0.227	-1.39		-0.284	-1.77	*	-0.288	-1.75	*
Self employment	-0.076	-0.77		-0.075	-0.78		-0.082	-0.86	
Unpaid household work	0.010	0.04		-0.073	-0.36		-0.077	-0.37	
Other	-0.241	-2.04	**	-0.245	-2.12	**	-0.260	-2.26	**
Household size	0.010	0.52		0.017	0.90		0.013	0.73	
Age-sex composition: % females 0-16 a/									
Percent females 16-30	0.005	1.08		0.004	0.88		0.000	-0.04	
Percent females 30+	-0.006	-1.23		-0.005	-1.12		-0.006	-1.42	
Percent males 0-16	-0.002	-0.91		-0.002	-0.93		-0.004	-2.18	**
Percent males 16-30	-0.003	-0.65		-0.001	-0.18		-0.003	-0.86	
Percent males 30+	-0.006	-1.15		-0.003	-0.66		-0.005	-1.11	
Well-being category: Extreme poor a/									
Poor	0.275	2.59	***	0.241	2.37	**	0.239	2.36	**
Lower middle	0.321	1.94	*	0.229	1.44		0.227	1.43	
Middle	0.380	2.13	**	0.288	1.69	*	0.280	1.65	*
Rich	0.263	1.16		0.128	0.58		0.139	0.64	
Region: Coast a/									
Haor	-0.004	-0.04		-0.013	-0.13		-0.027	-0.28	
Mid Char	-0.776	-6.23	***	-0.825	-6.78	***	-0.850	-7.08	***

Table 19: Probit propensity score model estimation for participation in water and sanitation interventions

	Models with child-level outcomes (6-59 months) (1)			Models with child-level outcomes (6-23 months) (2)			Models with household-level outcomes (3)		
	Coefficient	z-statistic		Coefficient	z-statistic		Coefficient	z-statistic	
North Char	-0.491	-4.44	***	-0.558	-5.17	**	-0.579	-5.45	***
Village characteristics									
Classified as extremely vulnerable	0.045	0.63		0.032	0.47		0.030	0.43	
Total number of households	0.000	2.91	***	0.000	2.89	***	0.000	2.94	***
CARE is implementing agency	-1.000	-5.16	***	-1.005	-5.25	***	-1.013	-5.28	***
Nearest town > 1 hour away	-0.003	-2.64	***	-0.003	-2.55	**	-0.003	-2.59	***
PM2A village	0.207	3.15	***	0.199	3.11	***	0.193	3.02	***
Other potential participation determinants									
Current shock exposure	0.024	0.88		0.027	1.04		0.030	1.14	
Relative shock exposure in 2009	-0.076	-4.23	***	-0.070	-4.08	***	-0.069	-4.01	***
Bonding social capital (index)	0.000	-0.01		-0.006	-0.17		-0.008	-0.24	
Relative bonding social capital in 2009	-0.004	-0.11		0.003	0.08		0.004	0.11	
Exposure to alternatives (index)	0.003	0.01		-0.049	-0.18		-0.038	-0.14	
Absence of fatalism (index)	-0.033	-0.89		-0.022	-0.62		-0.024	-0.69	
Number of project staff known (2009)	0.069	4.29	***	0.068	4.32	***	0.068	4.35	***
Leisure time index (2009)	0.016	1.00		0.020	1.30		0.018	1.14	
Women's decision making score (2009)	-0.022	-1.31		-0.028	-1.69	*	-0.028	-1.68	*
District mean child nutritional status (2009)									
Height-for-age z-score	-0.824	-4.08	***	-0.753	-3.90	***	-0.740	-3.87	***
Weight-for-height z-score	0.928	4.86	***	0.909	4.90	***	0.931	5.07	***
Number of observations		2,696			2824			2,834	
Pseudo R-squared		0.223			0.218			0.215	

Notes: Stars represent statistical significance at the 10%(*), 5%(**) and 1%(***) levels.
Dependent variables employed for example models: (1) height-for-age z-score; (2) whether child under five had diarrhea in the last two weeks; (3) whether mother has knowledge of five critical times for hand washing.

References

Ballard, Terri, Coates, Jennifer; Swindale, Anne, and Deitchler, Megan. 2011. *Household Hunger Scale: Indicator Definition and Measurement Guide.* Washington, DC: Food and Nutrition Technical Assistance II Project, FHI 360.

Baum, C. F., Schaffer, M. E., & Stillman, S. 2007. Enhanced routines for instrumental variables/generalized method of moments estimation and testing. *The Stata Journal*, 7(4), 464–506.

Bazzi, S., & Clemens, M. A. 2013. Blunt instruments: Avoiding common pitfalls in identifying the causes of economic growth. *American Economic Journal: Macroeconomics*, 5(2), 152–186.

Bhutta, Z. A., Das, J. K., Rizvi, A., Gaffey, M. F., Walker, N., Horton, S., et al. 2013. Evidence-based interventions for improvement of maternal and child nutrition: What can be done and at what cost?. *The Lancet*.

Bilinsky, Paula and Anne Swindale. 2010*. Months of Adequate Household Food Provisioning (MAHFP) for Measurement of Household Food Access: Indicator Guide (v.4).* Washington, D.C.: FHI 360/FANTA

Black, R. E., Victora, C. G., Walker, S. P., Bhutta, Z. A., Christian, P., de Onis, M., et al. 2013. Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet*.

Caldwell, Richard, Bruce Ravesloot and Lisa Smith. 2011. CARE Bangladesh SHOUHARDO II program: Baseline study report. TANGO, International, Tucson, AZ.

de Onis, M., Garza, C., Victora, C. G., Bhan, M. K., & Norum, K. R.Guest editors. 2004. The WHO multicentre growth reference study (MGRS): Rationale, planning, and implementation. *Food and Nutrition Bulletin*, 25(1), S3–S84.

FANTA-2. 2010. Title II Technical Reference Materials. TRM-01: Preventing Malnutrition in Children Under 2 Approach (PM2A): A Food-Assisted Approach. Revised November 2010. Washington, D.C.: Food and Nutrition Technical Assistance II Project (FANTA-2).

Gillespie, S., Haddad, L., Mannar, V., Menon, P., & Nisbett, N. The Maternal and Child Nutrition Study Group. 2013. The politics of reducing malnutrition: Building commitment and accelerating progress. *The Lancet*, 382(9891), 552–569.

Gilligan, D. O., & Hoddinott, J. 2007. Is there persistence in the impact of emergency food aid? Evidence on consumption, food security, and assets in rural Ethiopia. *American Journal of Agricultural Economics*, 89(2), 225-242.

Habicht, J. P., Gretel, H., & Lapp, J. 2009. Methodologies to evaluate the impact of large scale nutrition programs. Doing Impact Evaluation, 13.

Haddad, L. 2012. How can we build an enabling political environment to fight undernutrition? *European Journal of Development Research*, 25(1), 13–20.

Integrated Regional Information Network. 2010. Bangladesh: Towards “sanitation for all by 2010”. IRIN Asia. IRIN humanitarian news and analysis. Retrieved from: <http://www.irinnews.org/ Report.aspx?ReportID=77094>.

Khandker, S. R., Koolwal, G. B., & Samad, H. A. 2010. Handbook on impact evaluation: Quantitative methods and practices. Washington, DC: The World Bank.

Leuven, E., & Sianesi, B. 2003. PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing. Version 3.1.5 2 May 2009.

Linnemayr, Sebastian and Harold Alderman. 2011. Almost random: Evaluating a large-scale randomized nutrition program in the presence of crossover. *Journal of Development Economics* 96(1): 106-114.

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ICF International. 2013. *Bangladesh Demographic and Health Survey 2011.* Dhaka, Bangladesh and Calverton, Maryland, USA: NIPORT, Mitra and Associates, and ICF International.

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and Macro International. 2009. *Bangladesh Demographic and Health Survey 2007.* Dhaka, Bangladesh and Calverton, Maryland, USA: National Institute of Population Research and Training, Mitra and Associates, and Macro International.

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ORC Macro. 2005. *Bangladesh Demographic and Health Survey 2004.* Dhaka, Bangladesh and Calverton, Maryland [USA]: National Institute of Population Research and Training, Mitra and Associates, and ORC Macro.

Ruel, M. T., & Alderman, H. The Maternal and Child Nutrition Study Group. 2013. Nutrition-sensitive interventions and programmes: How can they help to accelerate progress in improving maternal and child nutrition? *The Lancet*.

Schaffer, M.E. 2010. xtivreg2: Stata module to perform extended IV/ 2SLS, GMM and AC/HAC, LIML and k-class regression for panel data models. <http://ideas.repec.org/c/boc/bocode/s456501.html>.

Schaeffer, Mark E. 2012. Statalist discussion “ivreg questions”. March 19, 2012.

Shahin S, Bhadra SK and Ahsanul Alam M. Utilization of Essential Service Delivery (UESD) Survey 2013. 2014. Dhaka: National Institute of Population Research and Training (NIPORT). http://www.nfpcsp.org/agridrupal/sites/default/files/1385218571-UESD%20Survey%202013%20provisional%20report.pdf

Smith, Lisa and Haddad, Lawrence. 2015. Reducing Child Undernutrition: Past Drivers and Priorities for the Post-MDG Era. *World Development*. (68): 180-224.

Smith, L.C., Khan, F, Frankenberger, T.R., Wadud, A.K.M. Abdul. 2013. Admissible Evidence in the Court of Development Evaluation? The Impact of CARE’s SHOUHARDO Project on Child Stunting in Bangladesh. *World Development* (41): 196-216.

Smith, L. C., Ramakrishnan, U., Ndiaye, A., Haddad, L., & Martorell, R. 2003. The importance of women's status for child nutrition in developing countries. IFPRI Research Report #131. Washington, DC: International Food Policy Research Institute.

Stock, J. H., & Yogo, M. 2005. Testing for weak instruments in Linear IV regression. In J. H. Stock, & D. W. K. Andrews (Eds.), *Identification and inference for econometric models: Essays in Honor of Thomas J. Rothenberg*. New York: Cambridge University Press.

Ten Have, Thomas R., Sharon-Lise T. Normand, Sue M. Marcus, C. Hendricks Brown, Philip Lavori, and Haihua Duan. 2008. Intent-to-treat vs. non-intent-to-treat analyses under treatment non-adherence in mental health randomized trials. *Psychiatr Ann.* 38(12): 772-783.

United Nations Children's Fund (UNICEF). 2013. Improving child nutrition: The achievable imperative for global progress. UNICEF: New York.

Waddington, Hugh, Howard White, Birte Snilstveit, Jorge Garcia Hombrados, Martina Vojtkova, Philip Davies, Ami Bhavsar, John Eyers, Tracey Perez Koehlmoos, Mark Petticrew, Jeffrey C. Valentine and Peter Tugwell. 2012. How to do a good systematic review of effects in international development: a tool kit. *Journal of Development Effectiveness* 4(3): 359-387.

Wadud, Abdul. 2015. Personal email communication. February 8, 2015

World Bank. 2013. Improving nutrition through multisectoral approaches. Washington, DC: World Bank.

World Health Organization (WHO). 2008. *Indicators for assessing infant and young childfeeding practices.* World Health Organization, Geneva.

Annex 1: References

Ballard, T., J. Coates, A. Swindale and M. Deitchler. 2011. Household Hunger Scale: Indicator Definition and Measurement Guide. FANTA-2 Bridge, FHI 360. August, Washington, D.C.

Bilinsky, P. and A. Swindale. 2010. Months of Adequate Household Food Provisioning (MAHFP) for Measurement of Household Food Access: Indicator Guide, Version 4. FANTA III/USAID. June, Washington D.C.

British Broadcasting Corporation (BBC). 2014. Bangladesh Profile. News Asia. 3 November. Accessed at: http://www.bbc.com/news/world-south-asia-12650940

FAO, WFP and IFAD. 2013. The State of Food Insecurity in the World 2013. The multiple dimensions of food security. Rome, FAO.

Government of the People's Republic of Bangladesh (Ministry of Planning, General Economics Division) and UNDP Bangladesh. 2014. Millennium Development Goals: Bangladesh Progress Report 2013. August, Dhaka.

Government of the People's Republic of Bangladesh (Ministry of Planning, General Economics Division). 2012. Sixth Five Year Plan Fy2011-Fy2015. Part-1: Strategic Directions and Policy Framework, Dhaka.

IFPRI, Concern and Welthungerhilfe. 2014. Global Hunger Index: The challenge of hidden hunger. Washington, D.C., IFPRI.

Karmalkar, A., C. McSweeney, M. New and G. Lizcano. 2010. UNDP Climate Change Country Profiles: Bangladesh. Accessed at: http://country-profiles.geog.ox.ac.uk/

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ICF International. 2013. Bangladesh Demographic and Health Survey 2011. Dhaka, Bangladesh and Calverton, Maryland, USA. January.

United Nations Development Programme (UNDP). 2014. Human Development Report 2014: Sustaining human progress: Reducing vulnerabilities and building resilience. New York, UNDP.

Swindale, A., and Bilinsky, P. 2006. Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide (v.2). Washington, D.C.: FHI 360/FANTA.

World Bank. 2014. Bangladesh Data/ ASPIRE Key Indicators. Accessed at: http://data.worldbank.org/country/bangladesh#cp_wdi and http://datatopics.worldbank.org/aspire/country/bangladesh

Annex 2: Scope of Work

Quantitative Impact Evaluation of the SHOUHARDO II Project in Bangladesh on Household Food and Livelihood Outcomes

Technical Proposal

submitted
by
TANGO, International Inc.
406 S. 4th Avenue
Tucson, Arizona 85701 USA
Telephone: (1-520) 617-0977
Fax: (1-520) 617-0980
www.tangointernational.com

to
Monzu Morshed
Acting Chief of Party
SHOUHARDO II Project
CARE, Bangladesh

December 5, 2014

1. Introduction

As is now well-documented, child malnutrition represents a fundamental squandering of human potential. In addition to child mortality, it is associated with poor school and work performance and an increased likelihood of overweight, chronic disease and mental health issues among adults. As one might expect, such personally damaging impacts of malnutrition for the world's youngest citizens and their families, along with its intergenerational transmission, have severe consequences for entire economies, dampening economic growth and poverty reduction (Smith and Haddad 2014). The development community is increasingly recognizing that slower-than-expected progress towards reaching the Millennium Development Goals (MDGs) by 2015—including those for poverty, secondary education, child mortality and maternal health—is due, in large part, to lack of investment in children's nutrition (World Bank 2013).

The current momentum within developing countries and internationally to address the problem of child malnutrition has never been higher. The rise of the Scaling Up Nutrition (SUN) movement starting in 2010, and the publication of the *Lancet* Maternal and Child Nutrition Series in 2008 have both served to raise awareness of its extent and consequences. Nutrition has consequently been greatly elevated on the development agenda, and global commitment to reducing malnutrition is stronger than ever (Gillespie and Haddad et. al. 2013). A case in point: "Food Security and Good Nutrition" is one of 12 Development Goals proposed in the UN's High Level Panel on Development After 2015.

Given the above momentum, answers to the question of how to accelerate reductions in child malnutrition in the coming decades are in great demand. A wide evidence base is building regarding the key roles of nutrition-specific interventions, such as micronutrient supplementation and nutrition education, as well as more fundamental, underlying and basic determinants of malnutrition (Bhutta et al. 2013; Ruel et. al. 2013; Haddad 2012; Ruel and Alderman 2013). With regard to the latter, a recent study by Smith and Haddad (2014), for example, demonstrates that improvements in safe water access, sanitation, women's education, gender equality, and the quantity and quality of food available in countries have been key drivers of stunting reductions since the 1970s. Poverty-reducing income growth and advances made in the quality of governance played essential facilitating roles.

The experience of the SHOUHARDO II project in Bangladesh—a country with one of the highest stunting prevalences in the world, at 41 percent of all children under five (Niport et. al. 2013)—provides a unique opportunity to gain insight into how development projects implemented at the local level can contribute to accelerating reductions in child malnutrition. Funded by the United States Agency for International Development and the Government of Bangladesh, SHOUHARDO II (Strengthening Household Ability to Respond to Development Opportunities II) is being implemented by CARE and its Bangladeshi NGO partners in eleven of the poorest and most marginalized districts in Bangladesh. The project takes a novel approach to reducing malnutrition, integrating nutrition-specific interventions with those that address key underlying determinants of stunting using a right-based, livelihoods programming approach (Frankenberger, Drinkwater and Maxwell, 2000). The underlying determinants the project is addressing include the dis-empowerment of women and the poor, low food production and income, poor hygiene conditions, recurrent disasters and environmental (climate) change.

Smith et al. (2012) and TANGO, International (2009) provide evidence that the project's predecessor, the "SHOUHARDO I" project, was exceptionally successful in applying this approach to reduce child stunting. Early indications from the mid-term evaluation of the SHOUHARDO II project are that reductions in stunting in the project's operational area are likely to be similarly strong: the stunting rate among children under five at baseline (December 2010) was 61.7. It had fallen to 52.7 percent (a total of 9 percentage points) by the midterm (December 2012).

Beyond monitoring progress towards strategic objectives and intermediate results, the rich data collected in the SHOUHARDO II baseline, midterm and endline surveys can be drawn on to determine whether and why the project actually brought about these recorded reductions in child stunting. As detailed below, they present the opportunity to conduct a more rigorous evaluation than those collected in conjunction with the SHOUHARDO I project. The data allow methods to be used that can more definitively determine which interventions caused reductions in child malnutrition and which have synergistic impacts with the nutrition-specific interventions implemented, thereby providing valuable lessons for future projects striving to reduce child malnutrition in Bangladesh and other developing countries.

2. Research questions

The overall objective of this research project is to determine whether and by how much the SHOUHARDO II project as a whole, and four sets of interventions implemented at the household level, served to reduce stunting among children under five in the project area. The four sets of interventions are:

(1) Nutrition-specific interventions
- -Provision of supplementary food rations to pregnant women and women with children under 2
- -Nutrition education through Mother's Groups
- -Growth monitoring and promotion

(2) Interventions aimed at enhancing women's empowerment
- -Empowerment, Knowledge and Transformative Action (EKATA) women's groups

(3) Interventions aimed at increasing food production and incomes
- -Training and provision of inputs to promote field crop and fisheries production, homestead gardening, livestock rearing, and cash income generating activities
- -Food-for-work
- -Cash-for-work
- -Savings groups

(4) Interventions aimed at increasing access to safe water and sanitation
- -Provision of sanitary latrines
- -Provision of tube wells
- -Provision of sanitation drains.

An additional objective is to determine whether there are synergistic impacts of the nutrition-specific interventions with those addressing the underlying determinants of malnutrition (2, 3 and 4 above). The

objective will help improve understanding of whether the project's integrated Rights-Based Livelihoods approach made a difference.

The specific questions that will be investigated are:

Overall impact of the project

- Did the SHOUHARDO II project's activities cause the reduction in stunting that took place among project beneficiaries over the life of the project?

Impact of specific types of interventions

- Did the project's nutrition-specific interventions serve to reduce child stunting?
- Did the project's women's empowerment intervention serve to reduce child stunting?
- Did the project's interventions to increase food production and incomes serve to reduce child stunting?
- Did the project's interventions to improve access to safe water and sanitation serve to reduce child stunting?

Synergistic impacts

- Were greater impacts achieved when the project's nutrition-specific interventions were combined with those aimed at enhancing women's empowerment?
- Were greater impacts achieved when the project's nutrition-specific interventions were combined with those aimed at increasing food production and incomes?
- Were greater impacts achieved when the project's nutrition-specific interventions were combined with those aimed at increasing access to safe water and sanition?

3. Methods

Impact evaluation is essentially about determining the extent to which changes in outcomes can be *attributed* to a project or intervention. The two key necessary conditions for an impact evaluation to be conducted in a rigorous manner are that (1) a control group be available so that a counter-factual can be identified; and (2) that the problem of selection bias be addressed (Waddington et. al. 2012). This latter problem arises because, in most cases, either purposeful targeting of project interventions to specific populations (e.g., the most poor) and/or self-selection of participants into interventions takes place. This renders the control group and the "intervention" group fundamentally different from one another even prior to the commencement of project activities.

Survey data collected as part of the SHOUHARDO I project were used to answer similar questions to those being posed here for SHOUHARDO II (see Smith et al. 2012). However, the fact that the data were only collected for project beneficiaries and the questionnaire was designed specifically for performance monitoring and not to conduct an impact evaluation constrained the rigor with which the analysis could be undertaken. Such a situation necessitated that a "mixed-methods" approach, triangulating information from the project data sets with that from various other sources, be used in order to establish evidence of impact. Further, while the evidence was strong, it was necessary to classify it as "suggestive" rather than definitive.

The SHOUHARDO II data sets, by contrast, contain ample data for households that did not participate in the project's interventions at all or only in its MCHN activities, thus providing a pool of potential control

group households.[1] Further, as outlined below, the endline survey can be extended to allow the collection of the data necessary for addressing the problem of selection bias, that is, data on factors affecting households' participation in various interventions. For the SHOUHARDO I analysis only such factors for which data had already been collected were included, leaving out important "unobservable" factors, the exclusion of which can lead to bias in estimates of the impacts of interventions.

The three types of analysis proposed to answer the research questions laid out above are outlined below. The first, a set of descriptive analyses, provides key contextual information about the project's impact on child stunting. The second two—propensity score matching and instrumental variables estimation—allow for a more rigorous evaluation design than was possible using SHOUHARDO I data, and thus a stronger evidence base for the lessons to be learned from the SHOUHARDO approach.

3.1 Descriptive analysis of trends in stunting and the age trajectory of stunting

Following the SHOUHARDO I evaluation protocol, we will use the following descriptive analyses to provide evidence on the overall question:

> Did the SHOUHARDO II project's activities cause the reduction in stunting that took place among project beneficiaries between the baseline and endline surveys (December 2010-December 2014)?

1. Comparison of trends in stunting in the project area, and among project participants, compared to those of rural children 0-5 years old nationally. The national data sets that will employed are Demographic and Health Surveys (DHS) conducted in 2011 and 2014 (forthcoming) and Hellen Keller International (HKI) Food Security and Nutrition Surveillance surveys conducted in 2010 (Round 3), 2012 (Round 9) and 2014.[2] The SHOUHARDO II baseline, mid-term and endline survey data will be used for this analysis.

2. Comparison of the age trajectory of stunting over the 0-5 year old range in the project area, and among project beneficiaries, compared to nationally. The national data employed will be from the 2014 DHS, pending availability. This analysis will help determine whether the typical pattern for children in Bangladesh of a sharp increase in stunting as they age over the six month to two year old range and continually high prevalences thereafter is exhibited among SHOUHARDO II project children. If not, then it can be surmised that the project's activities as a whole had a preventative effect. The endline survey data will be used for this analysis.

3.2 Propensity Score Matching and Multiple Treatment PSM

Propensity Score Matching (PSM) will be used to construct a valid control group to compare with the group of households participating in each set of project interventions being evaluated (the "intervention group"). This control group mimics that which would be used if the project's interventions had been

---

[1] See the SHOUHARDO I baseline and mid-term reports for a full explanation of the survey sampling designs.

[2] It has yet to be determined whether and when data were collected by HKI in 2014.

randomly allocated across households in the project area. The impact of interventions is estimated using the difference in the stunting prevalence between the control group and intervention groups. Multi-treatment PSM (MT-PSM) is an extension of PSM that will allow determination of whether there are positive synergies between the nutrition-specific and three other sets of interventions. We will do so following the analysis strategy laid out in Smith et al. (2012). The PSM and MT-PSM analyses will be conducted using the endline survey data.

In PSM, identification of a control group takes place through a matching process using measured indicators of characteristics that are believed to influence participation in the interventions being evaluated as well as those influencing the outcome of interest, in this case stunting. If these *observed* characteristics are the only factors influencing participation, then impact estimates can be deemed unbiased and serve to give valid, causal evidence of impact. However, if *unobserved* characteristics also influence participation, then the estimates will be biased (Khandker et al. 2010). The challenge then, is to collect data on the entire universe of such characteristics so that none can be deemed unobserved.

As noted above, households' and individuals' participation in SHOUHARDO II interventions was influenced by two factors: (1) targeting conducted by project administrators and (2) households' and individuals' own decisions on whether to participate. The SHOUHARDO II endline questionnaire is already set up to capture many of the indicators of participation determinants typically employed in conventional PSM impact analyses (see, for example Raza et. al.'s 2012 evaluation of BRAC). These are:

- Households' socio-economic status
- Household size and age-sex structure
- Education
- Employment status
- Occupation
- Gender of household head
- Region of residence.

Others factors are not typically measured and thus relegated to the "unobservables" category. For the SHOUHARDO II project these fall into the following categories:

- Aspirations and confidence to adapt[3]
- Time constraints
- Strength of social connections
- Women's decision making power in their households
- Indicators of personal familiarity with project staff
- Shock exposure.

To capture these factors and thus render them "observables", an additional module on "Factors affecting participation in the SHOUHARDO II project" will be added to the endline questionnaire.

It is also important for a valid assessment of impact that the characteristics affecting participation used for matching not be affected by project activities themselves. Given that panel data were not collected

[3] This factor will pick up on any Hawthorn effects (Waddinton et. al. 2012), whereby differences in outcomes across the control and intervention groups are influenced by participant motivation as a result of the program itself.

(that is, the baseline and endline surveys were not administered to the same households), for the characteristics listed above that may have been affected by the project retrospective recall data will be collected. That is, households will be asked to answer questions regarding their current situation and then whether (and in some cases, by how much) they feel it has changed over the last five years, since the inception of the project.

Note that as part of the SHOUHARDO II targeting process, each household in the project's operational area, including those not participating in the project, was assigned a "well-being category" (extreme poor, poor, middle, middle-rich, and rich) using Participatory Rural Appraisal techniques. The assignment took place before the baseline survey was administered. Thus retrospective data are not needed for measuring socio-economic status.

3.3 Instrumental Variables Estimation

Instrumental Variables (IV) estimation is an alternative technique that can be used to control for selection bias in the estimation of the impacts of project interventions. It involves identifying a variable (termed an "instrument") that is highly correlated with participation in an intervention but that does not influence the outcome of interest through any other pathway and thus can be deemed "exogenous". Following, two-stage least squares regression is used to estimate the impact of a project or intervention (Khandker et al. 2010).

A number of potentially valid instruments will be used for this impact evaluation.

The first is an indicator of a participation assignment mechanism that took place as part of a Randomized Controlled Trial (RCT) embedded into the sampling design for the SHOUHARDO II surveys. Specifically, villages in the project's operational area were randomly assigned to one of two groups:

(1) those subject to the traditional SHOUHARDO mechanism for the allocation of food assistance and other MCHN (Maternal and Child Health and Nutrition) interventions, titled "PEP/MCHN", in which only extreme poor or poor households receive assistance; or

(2) those subject to an alternative allocation mechanism, titled "PM2A" (Preventing malnutrition under two (see Ruel et. al. 2008), whereby all households, regardless of socio-economic status, receive the assistance.

Such an exogenous rule for determining eligibility for the program is likely to have influenced child malnutrition only through its influence on who and who did not participate in the MCHN interventions. It possibly also affected participation in the other project interventions.

Other potential instruments are reported travel time to project activities (for example, EKATA group meetings) and indicators of personal familiarity with project staff, both of which are likely to have influenced child stunting only through influencing project participation decisions.

Current techniques to ensure that the instruments used for IV estimation are relevant or "strong" (correlate sufficiently with participation) and valid (do not affect stunting through channels other than participation) will be employed (see Bazzi and Clemens 2013).

4. Research team, time requirements, budget and schedule

4.1 Research team

The analysis will be conducted by Lisa Smith and Tim Frankenberger of TANGO, International, who have extensive experience conducting impact evaluations and working on Bangladesh development issues in various capacities.

Lisa Smith holds a doctoral degree in Agricultural and Applied Economics from the University of Wisconsin, Madison. Currently a Senior Economist at TANGO International, she specializes in the areas of development economics, food and nutrition security, gender, and project impact evaluation. As an American Association for the Advancement of Science Post-Doctoral Fellow she gained experience providing technical assistance in the area of food security to USAID. While a Research Fellow at the International Food Policy Research Institute, she conducted various studies of the causes of child malnutrition and food insecurity in developing countries using both Demographic and Health Survey data and national-level data to conduct cross-country analyses. In her current position at TANGO she has conducted numerous food and livelihood security assessments as well as impact evaluations of large scale NGO-implemented development projects in Zimbabwe and Bangladesh.

Timothy Frankenberger is the President and co-founder of TANGO International (14 years) and has over 30 years of experience in international development activities. He previously was the Senior Food Security Advisor and Livelihood Security Coordinator at CARE for six years. Prior to this he was a farming systems research specialist at the University of Arizona for eight years. He has published numerous articles on household food security and is considered an expert on livelihood approaches and resilience. He received a B.S. in Anthropology from Iowa State University and an M.A. in Anthropology with a minor in Agricultural Economics from the University of Kentucky. Tim also carried out his doctoral studies at the University of Kentucky in Anthropology with a minor in Agricultural Economics.

4.2 Time requirements

	Days		
	Lisa Smith	Tim Frankenberger	Total
Development of endline questionnaire modules on participation and factors affecting participation	3.5	1	
Variable creation	4	1	
Descriptive analysis	4		
PSM analysis	4		
Multi-treatment PSM analysis	4		
IV analysis	5		
Write first draft of report	8	1	
Write final draft of report	2.5	1	
	35	4	39

4.3 Schedule

The study will be conducted between December 15 and 28 of February, 2015.

4.4 Budget

Questionnaire preparation, data analysis, and report write-up

LSmith	35 days x 680/day + VAT(15%)	27,370.00
TFrankenberger	4 days x 690/day + VAT(15%)	3,174.00
Field work: Data collection by Mitra & Associates		9,000.00
	TOTAL	**39,544.00USD**

References

Bazzi, Samuel and Michael A. Clemens. 2013. Blunt Instruments: Avoiding Common Pitfalls in Identifying the Causes of Economic Growth. American Economic Journal: Macroeconomics 5(2): 152-86.

Bhutta , Zulfiqar A, Jai K Das, Arjumand Rizvi, Michelle F Gaffey, Neff Walker, Susan Horton, Patrick Webb, Anna Lartey, Robert E Black, The Lancet Nutrition Interventions Review Group, and the Maternal and Child Nutrition Study Group. 2013. Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? The Lancet, June 6, 2013.

Frankenberger, Tim, M. Drinkwater and D. Maxwell. 2000. Operationalizing household livelihood security: A holistic approach for addressing poverty and vulnerability. Atlanta, GA: CARE International.

Gillespie, Stuart , Lawrence Haddad, Venkatesh Mannar, Purnima Menon, Nicholas Nisbett, and the Maternal and Child Nutrition Study Group. 2013. The politics of reducing malnutrition: building commitment and accelerating progress. *The Lancet* 382(9891):552-569.

Haddad, L. 2012. How can we build an enabling political environment to fight undernutriton? *European Journal of Development Research*, *25*(1), 13-20.

Khandker, Shahidur R., Gayatri B. Koolwal and Hussain A. Samad. 2010. *Handbook on impact evaluation: quantitative methods and practices.* The World Bank, Washington, D.C.

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ICF International. 2013. *Bangladesh Demographic and Health Survey 2011.* Dhaka, Bangladesh and Calverton, Maryland, USA: NIPORT, Mitra and Associates, and ICF International.

Raza, Wameq A., Narayan C. Das and Farzana A. Misha. 2012. Can ultra-poverty be sustainably improved? Evidence from BRAC in Bangladesh. *Jounral of Development Effectiveness* 4(2): 257-276.

Ruel , Marie T, Harold Alderman, and the Maternal and Child Nutrition Study Group. 2013. Nutrition-sensitive interventions and programmes: How can they help to accelerate progress in improving maternal and child nutrition? *The Lancet*, June 6, 2013.

Ruel, Marie, Purnima Menon, Jean-Pierre Habicht, Cornelia Loechl, Gilles Bergeron, Gretel Pelto, Mary Arimond, John Maluccio, Lesly Michaud and Bekele Hankebo (2008). Age-based preventive targeting of food assistance and behaviour change and communication for reduction of childhood undernutrition in Haiti: a cluster randomized trial. *Lancet*, 371, pp. 588-595.

Smith, Lisa C. and Lawrence Haddad. 2014. Reducing child undernutrition: Past drivers and priorities for the post-MDG era. IDS Working Paper No. 441. Institute of Development Studies, Brighton. (in review *World Development*).

Smith, Lisa C., Faheem Khan, Timothy R. Frankenberger and AKM Abdul Wadud. 2012. Admissible evidence in the court of development evaluation? The impact of CARE's SHOUHARDO project on child stunting in Bangladesh. *World Development* (41): 196-216.

Waddington, Hugh, Howard White, Birte Snilstveit, Jorge Garcia Hombrados, Martina Vojtkova, Philip Davies, Ami Bhavsar, John Eyers, Tracey Perez Koehlmoos, Mark Petticrew, Jeffrey C. Valentine and Peter Tugwell. 2012. How to do a good systematic review of effects in international development: a tool kit. *Journal of Development Effectiveness* 4(3): 359-387.

World Bank. 2013. Improving nutrition through multisectoral approaches. World Bank, Washington D.C.

Annex 3: Endline Survey Instrument

Quantitative Performance Evaluation

Population Based Sample Survey

2014

for

USAID Title II

CARE SHOUHARDO II Program

Quantitative Questionnaire

CARE Bangladesh

SHOUHARDO II Program

and

TANGO International

406 S. 4th Avenue

Tucson, Arizona 85701 USA

Mitra and Associates

(Centre for Research and Consultancy)

2/17 Iqbal Road, Mohammadpur

Dhaka-1207, Tel: +88-02-8118065, +88-02-9115503

Note for Enumerators:

- **Insert all data very clearly in the appropriate boxes/cells.**
- **Open ended responses must be entered in Bengali**
- **Use permanent, non-washable and black ink.**
- **Do not use whiteout/fluid.**
- **Do not overwrite.**

INFORMED CONSENT

Salutation (Assalamualaikum/Namashkar/hello):

My name is _____ and I am representing Mitra and Associates, a private consultancy firm that conducts social, livelihood, health and demographic surveys in Bangladesh. With technical support from TANGO International, Mitra Associates will conduct a quantitative performance evaluation population based sample survey for CARE Bangladesh, USAID/FFP, LGRD and Cooperative Ministry funded project Strengthening Household Ability to Respond to Development Opportunities II (SHOUHARDO II).

Your household/you have been selected **by chance** for this interview. Your participation in the survey is **voluntary** and your participation **does not guarantee** that you will be provided any benefits from the project. I would like to collect information on socio-economic condition and mother and child health and anthropometric measures for children U5 of your household.

The survey is voluntary and you/your family can choose not to take part. The information (e.g. age, date of birth, socio-economic status etc.) that you/your family give will be used to prepare reports. The report will be used for the program and will be used as a reference. Please let me know if you are agreed with it ornot.

Do you agree to provide me with birthdates and other information of yourself and other household members, with the understanding that the information will be strictly confidential and not released to any organization or individual?

Yes ☐ No ☐ ……..if no, thank the respondent and finish the interview

It will need 1-2 hours to complete the interview. Could you please spare some time for the interview?

At this time, do you want to ask me anything about the survey? If you have any question as a participant of this survey, you may contact here:

Address: Director, Mitra and Associates,
2/17 Iqbal Road, Mohammadpur,
Dhaka-1207, Bangladesh
Phone: 8118065, 9115503.

Name: Respondent 1_____ Yes ☐ No ☐ End ☐

Name: Respondent 2_____ Yes ☐ No ☐ End ☐

Name: Respondent 3_____ Yes ☐ No ☐ End ☐

Signature of Interviewer: _____Date_____

Question Serial								
Cluster Number								
HH WBA ID								
HH Unique ID**								

HOUR MINUTE
RECORD TIME THE INTERVIEW STARTED ☐☐☐☐

Survey Team's ID				

***From household MBL/sample list*

MODULE A: INFORMATION ON INTERVIEW AND AREA IDENTIFICATION

Interview information

A1	Date of interview		☐☐	☐☐	☐☐☐☐		
			dd	mm	yy	ID	Signature
A2	Name of Interviewer	1					
A3	Name of Interviewer	2					
A4	Reviewed by (Supervisor/ Name & Code)						
A5	Reviewed by (Team Leader/Name & Code)						
A6	Reviewed by others (Name & Code)						
A7	Data Entry by (Name/Code)						
A8	Data Entry Date						
A9	Data entry checked by (Name/Code)						
A10	Data Entry Checked Date						

Area Identification (follow MBL/ sample list)

	Area		
A11	Region	Coast ..... Haor ..... Mid Char ..... North Char	
A12	District (Use Geo-code)	☐☐☐☐☐	
A13	Upazila(Use Geo-code)	☐☐☐☐☐	
A14	Union (Use Geo-code)	☐☐☐☐☐	
A15	Village (Use Code provided)	☐☐☐☐	
A16	Village Type	MCHN..... PM2A	
A17	ECCD	Yes..... No.....	
A18	Savings Group	Yes..... No.....	
A19	Implementing Organization	☐☐	
A20	**Interview result**	Complete.....1 Incomplete 2	
		Write reason:	

PART I: HOUSEHOLD INFORMATION

[Instruction: Respondent should be head of household, knowledgeable adult household members, preferably the head of sampled household and spouse]

MODULE B: RESPONDENT IDENTIFICATION FOR PART- I

	QUESTION	CODE/RESPONSE	SKIP
B1			

	Name of household head: _____ **[INSTRUCTION:** Use name from the sample list]		
B2	Part I Respondent's name: _____**(**Household head if possible)		
B2.1	Part I Respondent Line number (Module C) [**INSTRUCTION:** Fill in after interfiew is complete]	☐☐	
B3	Relationship to household head (see codes below)		
B4	Part II Respondents Name: _____		
B5	Relationship to household head (see codes below)		
B6	Do you have cell/home phone for your personal/adult household members/household use?	Yes..... 1 No 2	**2→B7**
B6a	Cell or home phone number of household head or other adult household member	☐☐☐☐☐☐☐☐☐ ☐☐	
B6b	Ownership type of the cell phone / home phone?	Self ..... 1 Family member ..... 2 On request ..... 3 Others (SPECIFY) 4	
B6c	Since when are you using this phone?	__ __ / __ __ __ __ m m y y y y	

B7	Marital status of household head	Married ..... 1 Single ..... 2 Divorced/separated ..... 3 Widowed..... 4	
B8	Disability status of household head List responses and circle code number of response	Not disabled..... 1 Physically disabled (temporary)..... 2 Physically disabled (permanent)..... 3 Mentally disabled 4	
B9a	Household well-being category [**INSTRUCTION:** Extract from HH sample sheet]	Extreme Poor ..... 1 Poor ..... 2 Lower Middle ..... 3 Middle..... 4 Rich 5	
B9b	Household WBA ID [**INSTRUCTION:** Extract from HH sample sheet]	☐☐☐☐☐☐	
B9c	Household **Unique ID** [**INSTRUCTION:** Extract from HH sample sheet]	☐☐☐☐☐☐	

Codes for B3 and B5: Relationship to household head

1= Household head	7= Father	13= Nephew/niece
2= Wife of household head	8= Mother	14= Grandfather/Grandmother
3= Husband of household head	9= Daughter in law/son in law	15= Grandson/Granddaughter
4 =Caregiver of children (in absence of mother)	10= Brother	16= Sister-in-law/Brother-in-law
5= Son	11= Sister	17= Brother's wife
6= Daughter	12= Father/mother in law	18= Others (e.g. servant)

MODULE C: BASIC INFORMATION ON HOUSEHOLD MEMBERS

Circle line number of member

Line number	Name of member (Start with household head)	Sex 1= Male 2= Female	Age in years (write "0" for less than 1 year)	Education (for ages 6 and up)	Literacy 1= Can read 2 = Can write 3 = Can read and write 4 = Neither	Primary occupation (see codes below)	Secondary occupation (see codes below)	Eligible for		
								Part II: women's empowerment Woman 18 years or older?	Part III: Information on children under 6 years old Child under 6?	Enter line # of caregiver
					Only for adults (18 or older)					
		C1	C2	C3	C4	C5	C6	C7	C8	C9
1								1	1	☐☐
2								2	2	☐☐
3								3	3	☐☐
4								4	4	☐☐
5								5	5	☐☐
6								6	6	☐☐
7								7	7	☐☐
8								8	8	☐☐

9								9	9	☐☐
10								10	10	☐☐
11								11	11	☐☐
12								12	12	☐☐
13								13	13	☐☐
14								14	14	☐☐
15								15	15	☐☐

Codes for C3:0 = No class, 1 = Class 1, 2 = Class 2, 3 = Class 3, 4 = Class 4, 5 = Class 5, 6 = Class 6, 7 = Class 7,

8= Class 8, 9 = Class 9, 10 = SSC pass, 11 = HSC pass, 12 = Graduate, 13 = Masters

Codes for C5 and C6: 1=Farming, 2 =Agricultural day labor/contract labor, 3 =Fishing, 4 =Poultry and livestock rearing, 5 =Non-agricultural day labor/contract labor, 6 =Casual labor, 7 =Regular salaried employment, 8 =Self-employed in business/petty business, 9 =Paid “volunteers”, 10 = House work (child care, home care), 11 =Servant/ Maid, 12 =Student, 13 =Beggar, 14 =Old/ Disabled, 15 =Unemployed, 16 =Other.

MODULE D: HOUSEHOLD ECONOMIC SECURITY

[**INSTRUCTION:** Head of the household (or knowledgeable adult) is the respondent for Section D]

Indicators of economic distress

	QUESTION	CODE/RESPONSE	SKIP
D1	Did any resident household member migrate out of the village for part of the last 12 months to find employment?	Yes..... No.....	 **2→D2**
D1.1	If yes, how many members migrated?	☐☐Members	
D1.2	What was the longest time any one person was gone (in days)	☐☐☐Days	
D2	Did any resident household member sell labor in advance for part of the last 12 months?	Yes..... No.....	
D3	Did any resident household member take out an interest bearing loan from non-formal sources in the last 12 months?	Yes..... No.....	

Housing Characteristics

	QUESTION	CODE/RESPONSE	SKIP
D4	What is the main construction material of the walls of your main house? **[INSTRUCTION:** Observe and **c**ircle code number of response]	Brick ..... C.I. Sheet / wood..... Mud wall ..... Bamboo..... Straw/jute stick/leaves ..... Thatched bamboo/polythene ..... Other.....	

	QUESTION	CODE/RESPONSE	SKIP
D5	What is the main construction material of the roof of your main house? **[INSTRUCTION:** Observe and **c**ircle code number of response]	Concrete ..... C.I. Sheet/wood..... Tiles ..... Bamboo ..... Straw/jute stick/leave ..... Thatched bamboo/polythene ..... Other	
D6	How many rooms do you have for your family to live in your house?	☐☐ Rooms	

Ownership and sales of assets

	Asset	D7	D8
		Number currently owned	**Sales in last year**
	Now I'm going to ask you about some of the items you own in your house. How many (_____) do you own? [**INSTRUCTION:**If do not own, write "0"]		D8_1. Did you sell any of these kinds of items in the last year?
Domestic assets			
1A	Chairs		Yes .....1 No .....2 DNK.....8
1B	Khat		
1C	Cupboard		
1D	Tables		
1E	Show case		
1F	Dressing table		
1G	Watch		
1H	Clock		
1I	Lantern		
1J	Radio		

1K	TV		
1L	Cassette player		
1M	Electric fan		
1N	Mobile Phone		
1O	Gold ornaments/jewelry (ana)		
1P	Silver ornaments/jewelry (ana)		
	Now I'm going to ask you about some of the transportation and agricultural items you own. How many (_____) do you own? [**INSTRUCTION:**If do not own, write "0"]		D8_2. Did you sell any of these kinds of items in the last year?
Transport/Agricultural Assets			
2A	Boat		Yes ..... 1 No ..... 2 DNK..... 8
2B	Motorcycle		
2C	Rickshaw/van		
2D	Bicycle		
2E	Shallow / hand tube well		
2F	Power tiller		
2G	Paddle thresher		
2H	Spray machine		
2I	Plough		
2J	Fishing net		
2K	Pump		
2L	Hoe		
2M	Axe		
2N	Shovel/spade		
2O	Weedier		
2P	Power thresher		
	Now I'm going to ask you about the farm animals you own. How many (_____)do you own? [**INSTRUCTION:** If do not own, write "0"]		D8_3. Did you sell any of animals in the last year?
Animal Assets			

3A	Cow		Yes ..... 1 No ..... 2 DNK..... 8
3B	Buffalo		
3C	Goat		
3D	Sheep		
3E	Chicken		
3F	Duck		
3G	Pigs		

	Now I'm going to ask you about the trees and plants you own. How many(_____) do you own? [**INSTRUCTION:** If do not own, write "0"]		D8_4. Did you sell any of these trees or plants in the last year?
Trees and Plants			
4A	Timber tree		Yes ..... 1 No ..... 2 DNK..... 8
4B	Fruit tree		
4C	Bamboo tree		
4D	Medicinal plants		

Land ownership

How much of these types of land do you own (in decimals)?

	QUESTION	CODE/RESPONSE	SKIP
		Amount owned (Decimals)	
D9A	Own homestead land	☐☐☐☐.☐	
D9B	Own agricultural land	☐☐☐☐.☐	
D9C	Land lease-IN	☐☐☐☐.☐	
D9D	Land lease-OUT	☐☐☐☐.☐	
D9E	Mortgage-IN	☐☐☐☐.☐	
D9F	Mortgage-OUT	☐☐☐☐.☐	

	QUESTION	CODE/RESPONSE	SKIP
D9G	Haor (extended marsh)	☐☐☐☐.☐	
D9H	Pond/ditch	☐☐☐☐.☐	
D9I	Other type of land	☐☐☐☐.☐	
D10	Did anyone in your household sell any assets in the last year in order to be able to purchase food, pay for medicine, pay school fees, or meet any other urgent household need?	Yes .....1 No .....2 DNK.....8	**2,8→D12**
D11	How much money did you get from selling assets for these things? (Taka)	Taka ..... ☐☐☐☐☐ DNK.....98	

Household income/Earnings

D12	Did any resident household member bring cash income into the household in the last year**? If yes, then write their name and line no. in following column. If necessary, see module C columns C5,C6.**	Yes .....1 No .....2 DNK.....8 NR 9	**2,8,9→D18A**

	What activities did you make money from in last year? **For each activity, record number of months and monthly income. Prompt for more activities till respondent indicates no more. (if less than 1 month, enter 1)**	**Number of months in different activities and (net) income for last 12 months**									
		Person 1 Name _____ Line number from Module C ☐☐		Person 2 Name _____ Line number from Module C ☐☐		Person 3 Name _____ Line number from Module C ☐☐		Person 4 Name _____ Line number from Module C ☐☐		Person 5 Name _____ Line number from Module C ☐☐	
		# of months	Monthly Income (Taka)	# of months	Monthly Income (Taka)	# of months	Monthly Income (Taka)	# of months	Monthly Income (Taka)	# of months	Monthly Income (Taka)
		D13.1	D13.2	D14.1	D14.2	D15.1	D15.2	D16.1	D16.2	D17.1	D17.2
a	Agricultural day labor										
b	Agricultural contract labor										
c	Non-agricultural day labor										
d	Non-agricultural contract labor										
e	Casual labor										
f	Regular salaried employment										
g	Self-employment in business/service provision										
h	Petty business										
i	Business, using hired labor										
j	Paid “volunteer”										

k	Rickshaw/rickshaw van pulling										
l	Boatman										
m	Working as servant/maid										
n	Begging										
o	Cash-for-work										
p	Student stipend (including cash value of food received)										
q	Others (specify)										

Other source		Income (Taka)	
D18a	How much income did your household receive from remittances in the last year?	☐☐☐☐☐☐☐☐	
D18b	from gifts in the last year?	☐☐☐☐☐☐☐☐	
D18c	from pensions/retirement fund?	☐☐☐☐☐☐☐☐	
D18d	from leases?	☐☐☐☐☐☐☐☐	
D18e	sales of agricultural products?	☐☐☐☐☐☐☐☐ If "0", skip to D18_g	
D18f	How much did you spend on agricultural inputs (e.g., seeds, fertilizer, etc) in the last year?	☐☐☐☐☐☐☐☐	
D18g	How much income did your HH receive from sales of animals or animal products (including cattle, poultry and fish) in the last year	☐☐☐☐☐☐☐☐ If "0", skip to D19_a	
D18h	How much did you spend on inputs needed to raise the animals (e.g., feed, veterinary services) in the last year?	☐☐☐☐☐☐☐☐	

Remoteness and access to markets

	QUESTION	CODE/RESPONSE	SKIP
D19a	How long would it take to walk to the nearest town?	Less than 30 minutes .....1 30 minutes to 1 hour .....2 1 to 2 hours.....3 More than 2 hours.....4 DNK.....8	

	QUESTION	CODE/RESPONSE	SKIP
D19b	How long would it take to walk to _____ (Upazilla/thana headquarter)?	Less than 30 minutes .....1 30 minutes to 1 hour .....2 1 to 2 hours.....3 More than 2 hours.....4 DNK.....8	
D19c	Did anyone in your household buy any food in the last year?	Yes .....1 No .....2 DNK.....8	**2,8→ D19e**
D19d	How long does it take to walk to a place to buy food?	Less than 30 minutes .....1 30 minutes to 1 hour .....2 1 to 2 hours.....3 More than 2 hours.....4 DNK.....8	
D19e	Some people have their own businesses making things to sell like baskets, rugs or furniture. Does anyone in your household do this?	Yes .....1 No 2	**2 → D19g**
D19f	How long does it take to walk to the place to sell these things?	Less than 30 minutes .....1 30 minutes to 1 hour .....2 1 to 2 hours.....3 More than 2 hours.....4 Sell at home (0 minutes).....5 DNK.....8	
D19g	Do you ever sell food that you grow?	Yes .....1 No .....2 Don't grow food .....3 Refused to respond 8	**2,3,8→D19i**
D19h	How long does it take to walk to the place to sell the food, for example to a market or to a buyer pick-up location?	Less than 30 minutes .....1 30 minutes to 1 hour .....2 1 to 2 hours.....3 More than 2 hours.....4 DNK.....8	
D19i	Do you ever buy inputs for crop production like seeds and fertilizer?	Yes .....1 No .....2 DNK.....8	**2,8→D20**

	QUESTION	CODE/RESPONSE	SKIP
D19j	How long does it take to walk to the nearest place to buy inputs such as seeds and fertilizer?	Less than 30 minutes .....1 30 minutes to 1 hour .....2 1 to 2 hours.....3 More than 2 hours.....4 DNK.....8	

Household loans

	QUESTION	CODE/RESPONSE	SKIP
D20	How many loans does your household currently have? **[INSTRUCTION:** Write total loans**]**	☐☐ 00 = No loans 99 = Refuse to respond	**00, 99 → D27**

	Details by loan					
Loan #	Sex of the household member who took out the loan 1 = Male 2 = Female	What was the source of the loan?	What was the **main** reason for taking out the loan?	Total amount borrowed (Taka)	Amount of loan still outstanding (Taka)	Rate of interest paid/agreed upon (%)
	D21	**D22**	**D23**	**D24**	**D25**	**D26**
1	☐	☐	☐☐	☐☐☐☐☐	☐☐☐☐☐	☐☐☐
2	☐	☐	☐☐	☐☐☐☐☐	☐☐☐☐☐	☐☐☐
3	☐	☐	☐☐	☐☐☐☐☐	☐☐☐☐☐	☐☐☐
4	☐	☐	☐☐	☐☐☐☐☐	☐☐☐☐☐	☐☐☐
5	☐	☐	☐☐	☐☐☐☐☐	☐☐☐☐☐	☐☐☐

	QUESTION	CODE/RESPONSE	SKIP

Codes for D22: Source of loan	Codes for D23: Main reason of taking out the loan	
Money lender/pawnshop..... 1	Purchase agricultural tools..... 1	Wedding 11
Bank/formal lending institution 2	Purchase agricultural inputs..... 2	Bride price/Dowry 12
Informal savings group..... 3	Land purchase 3	Funeral 13
Neighbor/friend/relative..... 4	Livestock purchase 4	Religious event 14
NGO/CBO 5	Purchase of other productive assets 5	Loan repayment 15
Trader/grocer..... 6	Purchase of non-productive assets 6	Legal dispute/expenses 16

Household Savings

	QUESTION	CODE/RESPONSE	SKIP
D27	Does any member of your household have any cash savings (money put aside for some future use)?	Yes..... 1 No..... 2 DNK 8 Refused to respond.....9	**2,8,9→E1**
	Savings #1		
D28.1	Sex of person saving Name:_____ _ Roster Line Number:_____	Male..... 1 Female ..... 2 All household..... 3	
D29.1	Main method of saving used	Bank .....1 Savings Scheme/ Coops.....2 Savings or credit group .....3 Post Office.....4	

	QUESTION	CODE/RESPONSE	SKIP
		Home.....5 Insurance company.....6 NGO .....7 Other (specify) .....8 DNK 9	
D30.1	Total amount of Taka in savings	Taka..... ☐☐☐☐☐☐	
D31.1	Reasons for saving **[MULTIPLE RESPONSES]**	To buy household goods.....1 To start/help busines.....2 To buy land/house.....3 For education/training .....4 For marriage .....5 To build/repair house .....6 To pay interest from lending.....7 Difficult times.....8 To meet medical expenses .....9 To replace lost assets .....10 To purchase large asset.....11 To meet children's needs .....12 To meet all members needs.....13 Other .....14 DNK.....98	
	Savings #2 **[INSTRUCTION:** If household has only one form of savings skip additional savings and skip to **E1**]		
D28.2	Sex of person saving Name:_____ _ Roster Line Number:_____	Male.....1 Female .....2 All household.....3	

	QUESTION	CODE/RESPONSE	SKIP
D29.2	Main method of saving used	Bank .....1 Savings Scheme/ Coops .....2 Savings or credit group .....3 Post Offices .....4 Home .....5 Insurance company .....6 NGO .....7 Other (specify) .....8 DNK 9	
D30.2	Total amount of Taka in savings	Taka..... ☐☐☐☐☐☐	
D31.2	Reasons for saving **[MULTIPLE RESPONSES]**	To buy household goods .....1 To start/help busines .....2 To buy land/house .....3 For education/training .....4 For marriage .....5 To build/repair house .....6 To pay interest from lending.....7 Difficult times .....8 To meet medical expenses .....9 To replace lost assets .....10 To purchase large asset.....11 To meet children's needs .....12 To meet all members needs.....13 Other .....14 DNK.....98	
	Savings #3 **[INSTRUCTION:** If household has only two forms of savings skip to **E1**]		
D28.3	Sex of person saving Name:_____ _	Male..... 1 Female ..... 2 All household..... 3	

	QUESTION	CODE/RESPONSE	SKIP
	Roster Line Number:_____		
D29.3	Main method of saving used	Bank .....1 Savings Scheme/ Coops.....2 Savings or credit group .....3 Post Offices.....4 Home.....5 Insurance company.....6 NGO .....7 Other (specify) .....8 DNK..... 9	
D30.3	Total amount of Taka in savings	Taka..... ☐☐☐☐☐☐	
D31.3	Reasons for saving? **[MULTIPLE RESPONSES]**	To buy household goods..... 1 To start/help busines..... 2 To buy land/house..... 3 For education/training ..... 4 For marriage ..... 5 To build/repair house ..... 6 To pay interest from lending..... 7 Difficult times..... 8 To meet medical expenses ..... 9 To replace lost assets ..... 10 To purchase large asset..... 11 To meet children's needs ..... 12 To meet all members needs..... 13 Other ..... 14 DNK..... 98	

MODULE E. ACCESS TO SOCIAL SERVICES AND COMMON PROPERTY RESOURCES

Access to and use of social services

Which of the following services are available in your village/union?

[INSTRUCTION: List each service one-by-one and record answers. If answer is "yes" for either a or b, ask question on utilization (c) and circle appropriate code**.** Respondent for this module is Head of Household or Knowledgeable Adult**]**

	Type of Service	Available in village	Available in union	Utilization
		Yes.....1 No .....2 DNK 3	Yes ..... 1 No ..... 2 DNK..... 3	Frequently .....1 Sometimes.....2 Never 3

			[If 2,3 in both A and B, **SKIP C** and go to Next]	DNK .....8 NR/NO 9
		A	**B**	**C**
E1	Primary health care services	☐	☐	☐
E2	Family planning services	☐	☐	☐
E3	Primary school	☐	☐	☐
E4	Pre-school	☐	☐	☐
E5	Union Parishad	☐	☐	☐
E6	GrammoShalish	☐	☐	☐
Services from the Government provided by the …				
E7	Department of Social Services	☐	☐	☐
E8	Department of Women's Affairs	☐	☐	☐
E9	Department of Agriculture Extension (DAE)	☐	☐	☐
E10	Department of Fisheries (DOF)	☐	☐	☐
E11	Department of Livestock (DOL)	☐	☐	☐
E12	Government Land Office	☐	☐	☐

E13	BADC seed department	☐	☐	☐
E14	Department of Youth Development	☐	☐	☐
E15	Department of Cooperatives	☐	☐	☐
E16	Government Family Planning	☐	☐	☐
E17	Government immunization services	☐	☐	☐
Community clinic				
E17X	Community Clinic	☐	☐	☐
		IF E17X_A and E17X_B both 2 or 3 SKIP to E18		

	QUESTION	CODE/RESPONSE	SKIP
E17X.1	How many days per week does the community clinic in your locality provide services? DNK = 9	☐	
E17X.2	Did you (any household member) receive any service from the community clinic in last 12 months?	Yes ..... 1 No ..... 2 DNK..... 8	**2,3→E18**
E17X3	What type of services did you/your household members receive in last 12 months?	Antenatal Care services (ANC)..... 1 Post-natal Care services (PNC) ..... 2 Newborn care services ..... 3 Measuring child weights/GMP 4	

	QUESTION	CODE/RESPONSE	SKIP
	[MULTIPLE RESPONSE]	For diarrhea/cough/cold ..... 5 For immunization ..... 6 Family planning services..... 7 For newly married couple registration..... 8 For pregnant women registration ..... 9 For birth/death registration ..... 10 Nutrition education..... 11 Iron table, vitamin-A, deworming tablet..... 12 Health and family planning education and counseling ..... 13 Identification of infectious disease (TB, Malaria etc.) 14 Referrals ..... 15 Others (Specify)..... 16 DNK 98	
E17X4	How do you rate the services that you or another household member received from the community clinic?	Highly satisfied ..... 1 Somewhat satisfied ..... 2 Neutral..... 3 Not very satisfied..... 4 Not at all satisfied..... 5 DNK 9	

Participation in social safety nets

	QUESTION	CODE/RESPONSE	SKIP

E18	In the last 12 months did your household receive assistance from any of the following programs? **[INSTRUCTION:** Read all programs**]**	**Yes=1, No=2** 1. Government VGD ..... ☐ 2. Government VGF ..... ☐ 3. Govt. cash-for-work ..... ☐ 4. "100 days work ..... ☐ 5. "40 days work ..... ☐ 6. Aged allowance ..... ☐ 7. Widow allowance ..... ☐ 8. Disability allowance ..... ☐ 9. Maternal allowance ..... ☐ 10. Non-Govt cash-for- work ..... ☐ 11. Non-Govt food-for-work ..... ☐ 12. Community based savingsgroup ..... ☐ 13. Self-help group ..... ☐ 14. SHOUHARDO II ..... ☐ 15. Other ..... ☐	

Access to and use of common property resources

[INSTRUCTION: Read each item one-by-one and fill in response codes in column a. Next, for all items with response "yes", fill in response code for column b. For all items with response "yes" in column b, fill in codes in column c. If "no" then ask next item.**]**

E19. Which of the following common properties are available and used by members of your household?

		Available Yes ..... 1 No ..... 2 DNK..... 8	**Utilized** Yes..... 1 No..... 2 DNK 8	Activities (see codes)
		A	**B**	**C**
E19.1	Roadside sloping	☐ 2,9→ E19.2	☐ 2,9→ E19.2	☐
E19.2	Embankments	☐ 2,9→ E19.3	☐ 2,9→ E19.3	☐
E19.3	Railway grounds	☐ 2,9→ E19.4	☐ 2,9→ E19.4	☐
E19.4	Beel/Haor	☐ 2,9→ E19.5	☐ 2,9→ E19.5	☐
E19.5	River/Canal	☐ 2,9→ E19.6	☐ 2,9→ E19.6	☐
E19.6	CBO water body	☐ 2,9→ E19.7	☐ 2,9→ E19.7	☐
E19.7	Grazing land	☐ 2,9→ E19.8	☐ 2,9→ E19.8	☐
E19.8	Forest land	☐ 2,9→ E19.9	☐ 2,9→ E19.9	☐
E19.9	Hills	☐ 2,9→ E19.10	☐ 2,9→ E19.10	☐
E19.10	Khas pond	☐ 2,9→ E19.11	☐ 2,9→ E19.11	☐
E19.11	Khas land	☐ 2,9→ E19.12	☐ 2,9→ E19.12	☐

E19.12	Other_____	☐ 2,9→ E19.13	☐ 2,9→ E19.13	☐
E19.13	Other _____	☐ 2,9→ E19.14	☐ 2,9→ E19.14	☐
	Codes for column C			
	Fishing ..... 1 Collecting aquatic animals ..... 2 Collecting aquatic foods..... 3 Irrigation ..... 4 Grazing ..... 5 Collecting fruit ..... 6 Collecting firewood 7	Collecting soil ..... 8 Collecting water ..... 9 Crop cultivation..... 10 Fish culture..... 11 Tree plantation ..... 12 Other 13		

MODULE F. DISASTER RISK MANAGEMENT AND CLIMATE CHANGE

(**Instruction:** Respondent is the Head of Household or Knowledgeable Adult)

	QUESTION	CODE/RESPONSE	SKIP
	Disaster risk management		
F1	In the last 12 months, what type(s) of natural disasters were experienced by your household? **[MULTIPLE RESPONSE]**	A. Heavy rains .....01 B. Wildfire .....02 C. Hurricane.....03 D. Wind storms .....04 E. Erosion (river, wind) 05	

	QUESTION	CODE/RESPONSE	SKIP
	[DO NOT READ THE ANSWERS]	F. Earthquake .....06 G. Cyclone .....07 H. Floods .....08 I. Cold wave .....09 J. Hail .....10 K. Draught.....11 L. Other .....12 M. None .....13 N. DNK.....98	
F2	What was the most recent natural disaster your household experienced? **[SINGLE RESPONSE]** **[DO NOT READ THE ANSWERS]**	Heavy rains .....01 Wildfire .....02 Hurricane.....03 Wind storms .....04 Erosion (river, wind) .....05 Earthquake .....06 Cyclone .....07 Floods .....08 Cold wave .....09 Hail .....10 Draught.....11 Other .....12 None .....13 DNK.....98	**13,98→F15**
F3	In what year did you experience this disaster?	Year..... ☐☐☐☐	
F4	How did the most recent disaster affect your household? **[MULTIPLE RESPONSE]** **[DO NOT READ THE ANSWERS]**	A. Loss of family member .....01 B. Loss of livelihood .....02 C. Loss of home .....03 D. Physical disability/injury.....04 E. Loss of assets.....05 F. Loss of Latrine/Drainage .....06 G. Loss of water supply.....07 H. Disease .....08 I. Crop Loss .....09 J. Having to care for others.....10	

	QUESTION	CODE/RESPONSE	SKIP
		K. Additional household members .....11 L. Stress/anxiety/fear .....12 M. Other .....13 N. No effect.....14 O. DNK.....98	**14,98→F6**
F5	How did your household cope with the most recent disaster? **[MULTIPLE RESPONSE]** **[DO NOT READ THE ANSWERS]**	A. Loan from neighbors/relatives .....01 B. Loan from money lender .....02 C. Loan from NGO .....03 D. Loan form bank.....04 E. Reduced # or quantity of meals.....05 F. Mortgaged farmland out .....06 G. Leased farmland out .....07 H. Sold HH productive assets (tools, livestock, vehicles, etc.) .....08 I. Sold other household assets (furniture, radios, jewelry, etc.) .....09 J. Sold agricultural products in advance or low price.....10 K. Sold advance male labor.....11 L. Sold advance female labor .....12 M. Sold farmland.....13 N. Sold homestead land .....14 O. Ate famine foods .....15 P. Accepted aid .....16 Q. Accepted help from others.....17 R. Migrated .....18 S. Used savings .....19 T. Purchased goods on credit .....20 U. Postpone medical treatment.....21 V. Sent child to work.....22 W.Other.....23 X. No Coping .....24 Y. DNK.....98	

	QUESTION	CODE/RESPONSE	SKIP
F6	What could have been done differently to reduce the impact of future disasters in your community? **[MULTIPLE RESPONSE]** **[DO NOT READ THE ANSWERS]**	A. Structural improvement to home .....01 B. Improvement to infrastructure (shelters, roads, bridges) .....02 C. Community disaster response plan.....03 D. Food stocks .....04 E. Water stocks .....05 F. Medical supplies stocks.....06 G. First aid training .....07 H. Increased collaboration/ coordination w/ neighbors .....08 I. Increased collaboration/ coordination with communities.....09 J. Better forecasting .....10 K. Earlier/better warning .....11 L. Increased collaboration/ coordination w/ local govt 12	

	QUESTION	CODE/RESPONSE	SKIP
		M. Income alternatives/more diversified income.....13 N. Evacuation routes/plans .....14 O. Improved alternative modes of communication (i.e. shortwave radio, etc.).....15 P. Other .....16 Q. Nothing .....17 R. DNK 98	
F7	Did you receive any early warning signal/message before the last natural disaster (you had in your area)?	Yes .....1 No.....2	**2→F10**
F8	How long before the disaster did you receive the warning signal message?	☐☐☐minutes ☐☐☐hours [Don't know "000"]	
F9	Who gave the early/signal message? **[MULTIPLE RESPONSE]**	A. CPP volunteers .....01 B. Radio .....02 C. Television .....03 D. Union parishad.....04 E. VDC.....05 F. Disaster management committee .....06 G. Disaster volunteers .....07 H. NGOs .....08 I. Mosque miking.....09 J. Neighbor/relatives .....10 K. Other (Specify) 11	
F10	Did you/your household members move to	Yes 1	**1→F12**

	QUESTION	CODE/RESPONSE	SKIP
	another place to take shelter before/after the last natural disaster?	No.....2	
F11	If no, why not? **[MULTIPLE RESPONSE]**	A. No shelter.....01 B. No space available in the shelter .....02 C. Shelter not functional .....03 D. Did not receive messages .....04 E. No transport.....05 F. Did not want .....06 G. To protect home/assets.....07 H. Live in protected house.....08 I. Not required.....09 J. Others .....10 K. DNK 98	**Any→F15**
F12	Where did you move to take shelter before/after the last natural disaster? **[MULTIPLE RESPONSE]**	A. **'Pacca' House (cement) .....01** B. 'Kacha' house .....02 C. **Cyclone or flood shelter .....03** D. Union parishad building.....04 E. School/institution building.....05 F. Boat.....06 G. Highways/ Embankment.....07 H. Raised hillock .....08 I. Mosque/Temple/Church.....09 J. Market place .....10 K. Other (SPECIFY) 11	
F13	Did anybody help you to take shelter?	Yes .....1 No.....2 DNK 8	 **2,8 →F15**
F14	Who did help you out to take shelter?	A. CPP volunteers .....1 B. Union parishad.....2 C. VDC.....3 D. Disaster management committee .....4 E. Disaster volunteers 5	

	QUESTION	CODE/RESPONSE	SKIP
	[MULTIPLE RESPONSE]	F. NGOs .....6 G. Neighbor/relatives .....7 H. Other (Specify) .....8 I. DNK 98	
F15	Are you aware of any members of the community trained to help you during disaster?	Yes .....1 No 2	**2→F17**
F16	Who are they? **[MULTIPLE RESPONSE]**	A. CPP volunteers .....01 B. Union parishad chairman/member.....02 C. NGOs .....03 D. Teacher .....04 E. Students .....05 F. Village leaders .....06 G. Village Development Committee .....07 H. Disaster volunteers .....08 I. Other (specify) 09	
F17	Have you or any member of your HH received any disaster preparedness training?	Yes .....1 No 2	**2→F19**

F18	Who provided the training? **[MULTIPLE RESPONSE]**	A. CPP volunteers.....01 B. Union parishad chairman/member .....02 C. NGOs.....03 D. Teacher .....04 E. Students.....05 F. Village leaders .....06 G. Village Development Committee .....07 H. Disaster volunteers.....08 I. Other (specify) 09	

F19	What do you plan to with your household members in the event of a disaster (cyclone/flood/other natural)? **[MULTIPLE RESPONSE]**	A. Evacuation of vulnerable members ..... 01 B. Visit shelter centers in normal time ..... 02 C. Identify safe shelter center ..... 03 D. Plan for dry food ..... 04 E. Plan to protect HH valuables/assets ..... 05 F. Identify safe shelter for livestock ..... 06 G. Other (Specify) ..... 07 H. No plan ..... 08 I. Don't know 98	
F20	Do you consider disaster risk as an issue of your daily activities?	Yes..... 1 No ..... 2 DNK 8	**2,8 →F22**
F21	If yes, in which activities? [MULTIPLE RESPONSE]	*A.* Cultivation - time, seed selection ... 1 *B.* House construction/repair..... 2 *C.* food preservation ..... 3 D. Other(Specify) 4	
	Climate change		
F22	Do you think the climate is changing in your area?	Yes..... 1 No ..... 2 No opinion/DNK..... 8	**2,8 →G1**
F23	If yes, in what ways do you think it is changing?	A. It is becoming warmer ..... 1 B. It is becoming colder ..... 2 C. It is becoming dryer ..... 3 D. It is becoming wetter..... 4 E. Rains are more unpredictable ..... 5 F. Rains are coming earlier 6	

	[MULTIPLE RESPONSE] **[DO NOT READ THE ANSWERS]**	G. Rains are beginning later ..... 7 H. Rains are stopping earlier ..... 8 I. Rains are stopping later ..... 9 J. Temperatures are unpredictable..... 10 K. Strong winds are more common ..... 11 L. Other (Specify)..... 12	

MODULE G. HOUSEHOLD FOOD SECURITY

Food consumption

[INSTRUCTION: The respondent should be an adult female knowledgeable about food in the household. If currently administering survey to male head of household, continue with module H, and return to complete this module once module J2 is completed**]**

[INTRODUCTION: Now I would like to ask you about the types of foods that you or anyone else in your household ate yesterday during the day or at night. Please include all foods, including the foods eaten here at your house or somewhere else (e.g., other homes, street stalls, given by employer.]

Read the list of foods one-by-one and record coded response.

	QUESTION	CODE/RESPONSE	SKIP
G1	Any cereals (e.g. rice, bread, wheat, wheat bread, rice flakes, puffed rice, barley, wheat grain, popcorn)?	Yes .....1 No 2	
G2	Any pumpkin, carrots, squash, or sweet potatoes or vegetables that are yellow or orange inside?	Yes .....1 No 2	
G3	Any white potatoes, white yams or other foods made from roots and tubers?	Yes .....1 No 2	

	QUESTION	CODE/RESPONSE	SKIP
G4	Any dark green, leafy vegetables, (e.g., ipomoea, amaranth, spinach, parwar sag, and drumstick leaves)?	Yes .....1 No 2	
G5	Any other vegetables, (e.g. cucumber, radish, pepper, string beans, cabbage, cauliflower, radish, onion)?	Yes .....1 No 2	
G6	Any ripe papaya, mangoes or other fruits that are yellow or orange inside?	Yes .....1 No 2	
G7	Any other fruits, (e.g. banana, papaya, sithphal, grapefruit, apple, orange, jackfruit, jambu fruit, plums, melon, tomato, date, lemon, etc.)?	Yes .....1 No 2	
G8	Any meat, such as, liver, beef, poultry, lamb, pork, etc.?	Yes .....1 No 2	
G9	Any Egg?	Yes .....1 No 2	
G10	Any fresh or dried fish or shellfish?	Yes .....1 No 2	
G11	Any legumes/pulses, (e.g. Bengal gram, black gram dal, lentil, Khesarl)?	Yes .....1 No 2	
G12	Any Milk or Milk products, (e.g. cow milk, buffalo milk, goat milk, yogurt, curd, cheese)?	Yes .....1 No 2	
G13	Any foods prepared using fat,, e.g., oil, butter, dalda or ghee?	Yes .....1 No 2	

	QUESTION	CODE/RESPONSE	SKIP
G14	Any sweet foods? e.g. sugar, gur, honey, Chocolate?	Yes .....1 No 2	
G15	Any other foods such as condiments, coffee, tea?	Yes .....1 No 2	

Months of Insufficient Food

[INSTRUCTION: the respondent should be an adult female if possible.]

	QUESTION	CODE/RESPONSE	SKIP
G15.1	Now I would like to ask you about your household's food supply during different months of the year. When answering these questions, please think back over the last 12 months, from now to the same time last year.Were there months, in the past 12 months, in which you did not have enough food to meet your family's needs?	Yes .....1 No 2	**2→G17.1**
	Which were the months in the past 12 months in which you did not have enough food to meet your family's needs?This includes any kind of food, such as food you produced yourself, food purchased, food given to you by others, food aid, or food you borrowed. **INSTRUCTION:** • Do not read the list of months • Place a "1" in the box if the respondent mentions the month. If the respondent does not mention the month, place a "2" in the box.		

	QUESTION	CODE/RESPONSE	SKIP
G16.1	**January**	☐	
G16.2	**February**	☐	
G16.3	**March**	☐	
G16.4	**April**	☐	
G16.5	**May**	☐	
G16.6	**June**	☐	
G16.7	**July**	☐	
G16.8	**August**	☐	
G16.9	**September**	☐	
G16.10	**October**	☐	
G16.11	**November**	☐	
G16.12	**December**	☐	

Household Hunger

	QUESTION	CODE/RESPONSE	SKIP
G17.1	In the last 4 weeks was there a time when there was no food to eat of any kind in the house,	Yes 1	

	because of lack of resources to get food?	No 2	**2→G17.3**
G17.2	How often did this happen?	Rarelyor sometimes (1-10 times) .....1 Often (more than 10 times) 2	
G17.3	In the last 4 weeks, was there a time when you or any household member went to sleep at night hungry without eating anything at all because there was not enough food?	Yes .....1 No 2	**2→G17.5**
G17.4	How often did this happen?	Rarely or sometimes (1-10 times) .....1 Often (more than 10 times) 2	
G17.5	In the last 4 weeks was there a time when you or any household member went a whole day and night without eating anything at all because there was not enough food?	Yes .....1 No 2	**2→G18.1**
G17.6	How often did this happen?	Rarely or sometimes (1 – 10 times) .....1 Often (more than 10 times) 2	

Household Food Access: Food insecurity coping strategies

[INSTRUCTION: read each question and then ask how often the event happened in the last year.**]**

	QUESTION	CODE/RESPONSE	SKIP
G18.1	In the last year, how often did you or any of your family have to eat potato, wheat, or another grain although you wanted to eat rice (not including when you were sick)?	Never .....1 Rarely (1-6 times in last year).....2 Sometimes (7-12 times in last year).....3 Often (a few times each month) .....4 Regularly (almost or every day) 5	
G18.2	In the last 12 months how often did you yourself skip entire meals due to scarcity of food?	Never .....1 Rarely (1-6 times in last year).....2 Sometimes (7-12 times in last year).....3 Often (a few times each month) .....4 Regularly (almost or every day) 5	
G18.3	In the last 12 months how often did you personally eat less food in a meal due to scarcity of food?	Never .....1 Rarely (1-6 times in last year).....2 Sometimes (7-12 times in last year).....3 Often (a few times each month) .....4 Regularly (almost or every day) 5	
G18.4	In the past 12 months how often did your family purchase food (rice, lentils etc.) on credit (or loan)	Never 1	

	from a local shop?	Rarely (1-6 times in last year).....2 Sometimes (7-12 times in last year).....3 Often (a few times each month) .....4 Regularly (almost or every day) 5	
G18.5	In the past 12 months how often did your family have to borrow /take food from relatives or neighbors to make a meal?	Never .....1 Rarely (1-6 times in last year).....2 Sometimes (7-12 times in last year).....3 Often (a few times each month) .....4 Regularly (almost or every day) 5	

MODULE H. AGRICULTURAL PRODUCTION, FISHERIESAND LIVESTOCK REARING

[**Instructions:** Respondent should be Head of Household or Knowledgeable Adult]

Field crop production

	QUESTION	CODE/RESPONSE	SKIP
H1	Did you cultivate any field crops like cereals, ground nuts, jute, or fruits and vegetables for selling to others?	Yes.....1 No .....2 DNK 8	**2,8→ H8**
H2	In the last year did anyone in your household cultivate any of these crops? Example: **[READ THE CROPS THAT ARE LISTED]**	**Yes=1No=2** H.2.1. Rice (HYV)..... ☐ H.2.2. Rice (LIV)..... ☐ H.2.3. Rice (Local) ..... ☐ H.2.4. Rice (Hybrid) ..... ☐ H.2.5. Vegetables (commercial) ..... ☐ H.2.6. Fruits (commercial)..... ☐ H.2.7. Wheat ..... ☐ H.2.8. Groundnut..... ☐ H.2.9. Maize ..... ☐ H.2.10. Pulses ..... ☐ H.2.11. Oilseeds..... ☐ H.2.12. Spices ..... ☐ H.2.13. Jute ..... ☐ H.2.14. Tobacco..... ☐ H.2.15. Other (Specify) ..... ☐ H.2.16. Other (Specify) ..... ☐	

H3	Which improved cropping practices did you apply to any of your crops mentioned in H2 in the last year?	**Yes=1 No=2** H.3.1. Use high quality seed ..... ☐ H.3.2. Use 2-3 seedling per hill for rice. ☐ H.3.3. Maintain proper spacing ..... ☐ H.3.4. Intercrop ..... ☐ H.3.5. Use IPM..... ☐ H.3.6. Use organic fertilizers ..... ☐ H.3.7. Use recommended seed storage Methods ..... ☐ H.3.8. Balanced fertilizer use ..... ☐ H.3.9. Green manure ..... ☐ H.3.10. Other (Specify) ..... ☐	

H4	Which agricultural inputs did you purchase and/or receive before or during the last cropping season?		**Yes=1 No=2**	
		H.4.1. Improved seed	☐	
		H.4.2. Seedlings.....		
		H.4.3. Saplings.....	☐	
		H.4.4. Irrigation water		
		H.4.5. Fertilizer.....	☐	
		H.4.6. Ploughing.....		
		H.4.7. Use of pesticides	☐	
		H.4.8. Use of weedicides.....	☐	
		H.4.9. Other (Specify)	☐	
		H.4.10. Other (Specify)	☐	
			☐	

		☐ ☐	
H5	Which agricultural financial services did you or your household use in the previous cropping season?	**Yes=1No=2** H.5.1. Agricultural loan ..... ☐ H.5.2. A company provided advance inputs ☐ H.5.3. Government subsidy..... ☐ H.5.4. Other (Specify)..... ☐	
H6	Have you or any member of your household participated in any training programs on improved food crop production technologies?	Yes.....1 No .....2 DNK 8	**2,8→H8**
H7	What kind of agricultural techniques were you trained in? **[MULTIPLE RESPONSES]**	A. Use of improved seeds ..... 1 B. Use of new food crops..... 2 C. Proper use of fertilizer..... 3 D. Weed control (herbicides, weeding) ..... 4 E. Conservation agriculture (zero /minimal tillage, composting) ..... 5 F. Pest management practices (pesticides)..... 6 G. Improved post-harvest techniques ..... 7 H. Improved water management ..... 8 I. Others (Specify) 9	

Vegetable Production/Gardening

[**INSTRUCTION:** Ask to the person who normally does gardening if possible.]

	QUESTION	CODE/RESPONSE	SKIP
H9	In the previous year did any member of your household grow any vegetables in a garden?	Yes.....1 No .....2 DNK 8	**2,8 →H12**
H10	Which of the following vegetables did you grow?	**Yes=1 No=2** H.10.1. Green Gourd ..... ☐ H.10.2. Radish..... ☐ H.10.3. Birinjal ..... ☐ H.10.4. Lalshak (red amaranth) ..... ☐ H.10.5. Pumpkin (yellow) ..... ☐ H.10.6. Corriandor leaf /Kalijira/Ginger ..... ☐ H.10.7. Potato/Keshur (white potato)..... ☐ H.10.8. Data Shak (Green amaranth) ..... ☐ H.10.9. Potol/Shajina (drum stick) ..... ☐ H.10.10. Chichinga/Jhinga ..... ☐ H.10.11. Bean ..... ☐ H.10.12. Pui Shak (Indian spinach) ..... ☐ H.10.13. Kacha Kola (green banana) ..... ☐ H.10.14. Ladies Finger ..... ☐ H.10.15. Green Chili..... ☐ H.10.16. Onion ..... ☐ H.10.17. Garlic ..... ☐ H.10.18. Sweet potato..... ☐ H.10.19. Tomato..... ☐ H.10.20. Korolla (bitter gourd) ..... ☐ H.10.21. Papaya..... ☐	

		H.10.22. Other green leafy vegetables ..... ☐ H.10.23. Other (Specify) ..... ☐	
H11	Which improved practices did you apply to any of your vegetable crops in the last year?	**Yes=1 No=2** H.11.1. Improved bed system ..... ☐ H.11.2. Improved pit/heap system ..... ☐ H.11.3. Quality seed ..... ☐ H.11.4. Organic fertilizer ..... ☐ H.11.5. Compost preparation..... ☐ H.11.6. Multi storied cropping ..... ☐ H.11.7. Relay cropping ..... ☐ H.11.8. Multiple cropping ..... ☐ H.11.9. Thinning ..... ☐ H.11.10. Pruning..... ☐ H.11.11. Mulching ..... ☐ H.11.12. Bagging ..... ☐ H.11.13. Stalking/sticking/trellis ..... ☐ H.11.14. Non-chemical pesticides..... ☐ H.11.15. Artificial pollination ..... ☐ H.11.16. Weed management ..... ☐ H.11.17. Water management..... ☐ H.11.18. Other (Specify)..... ☐	

Fish Production/Rearing

[INSTRUCTION: Ask person normally engaged in fish production if possible.**]**

	QUESTION	CODE/RESPONSE	SKIP
H12	In the last year did you or your household raise/rear any fish?	Yes..... 1 No ..... 2 DNK 8	**2,8→H14**
H13	Which improved fish production practices did your household use in the last year?	**Yes=1 No=2** H.13.1. Testing water color to determine if food is adequate..... ☐ H.13.2. Maintaining stocking density..... ☐ H.13.3. Species selection..... ☐ H.13.4. Pond cleaning ..... ☐ H.13.5. Liming ..... ☐ H.13.6. Providing supplementary feed ..... ☐ H.13.7. Employing fish disease management ..... ☐ H.13.8. Using polyculture..... ☐ H.13.9. Providing fish seed..... ☐ H.13.10. Others (Specify) ..... ☐	

Livestock Production/Rearing

[**INSTRUCTION: A**sk person normally engaged in livestock production if possible.**]**

	QUESTION	CODE/RESPONSE	SKIP
H14	During the last 12 months, did you raise any livestock or poultry?	Yes raised livestock ..... 1 Yes raised poultry ..... 2 Yes raised both ..... 3 No ..... 4 DNK 8	**4,8→H16**
H15	What are the following improved practices do you apply in the last year to raising poultry and rearing livestock?	**Yes=1 No=2** H.15.1. Improved breeding ..... ☐ H.15.2. Vaccination ..... ☐ H.15.3. Supplementary poultry feed..... ☐ H.15.4. Fattening..... ☐ H.15.5. Artificial insemination..... ☐ H.15.6. Supplementary poultry feed..... ☐ H.15.7. Other (Specify) ..... ☐	

Technical support

	QUESTION	CODE/RESPONSE	SKIP
H16	Do you know where to get technical guidance for agriculture, livestock rearing, gardening, or pond/fish management?	Yes..... 1 No ..... 2 DNK 8	2,8 → I1
H17	In the past year did you or any member of your household receive any type of assistance (technical, materials, financial) from any of the following sources?	**Yes=1 No=2** H.17.1. Neighbors/relatives/other farmers ..... ☐ H.17.2. Dept. of Agriculture ..... ☐ H.17.3. Dept. of Fisheries..... ☐	

		H.17.4. Department of livestock ..... ☐ H.17.5. NGO ..... ☐ H.17.6. Seed/pesticide companies..... ☐ H.17.7. Fish/poultry/livestock feed and pharmaceutical companies..... ☐ H.17.8. PDF (Positive Deviant Farmer)..... ☐ H.17.9. Paravet..... ☐ H.17.10. Community Agriculture Volunteers..... ☐ H.17.11. Other (Specify) ..... ☐	

MODULE I. WATER AND SANITATION

[**Instructions:** Respondent should be Head of Household or Knowledgeable Adult]

	QUESTION	CODE/RESPONSE	SKIP

	QUESTION	CODE/RESPONSE	SKIP
I1	What is the main source of drinking water for members of your household? **[PROMPT IF NECESSARY]**	Hand tube well .....1 Tara pump .....2 Deep tube well .....3 Shallow tube well .....4 Ring well/ indara.....5 Pond .....6 River/canal.....7 Piped water .....8 Pond sand filter .....9 Rainwater harvesting system .....10 Other (specify) 11	
I2	Is water normally available from this source?	Yes .....1 No 2	
I3	In the last two weeks was water unavailable from this source for a day or longer?	Yes .....1 No 2	

	QUESTION	CODE/RESPONSE	SKIP
I4	How much time does it usually take to go to the drinking water source, get water, and come back?	0 (in or at house) .....1 30 minutes or less .....2 30 minutes to 1 hour .....3 1 hour to 2 hours .....4 2 to 3 hours .....5 More than 3 hours.....6	
I5	If source is a tubewell (hand, deep, shallow or Tara pump, has the well been tested for arsenic?	Yes .....1 No .....2 DNK.....8 N/A 9	2,8,9→I8
I6	If tested, does the tubewell/Tara pump have arsenic?	Yes .....1 No .....2 DNK.....8	2,8→I8
I7	If yes, is it marked red or green?	Red.....1 Green.....2 Neither.....3	
I8	Does the household have access to a toilet facility?	Yes .....1 No 2	2→J1

	QUESTION	CODE/RESPONSE	SKIP
I9	What kind of toilet facility do members of your households usually use? **[PROMPT IF NECESSARY]**	Ring-slab/offset latrine (water seal).....1 Ring-slab/offset latrine (water seal broken) .....2 Pit latrine (covered).....3 Pit latrine (uncovered).....4 Septic latrine.....5 Hanging/open latrine .....6 Local adopted hygienic latrine 7	
I10	Which members of your household use this toilet? **[SELECT MUPLTIPLE]**	A. Male adults.....1 B. Female adults.....2 C. Male children .....3 D. Female children.....4 E. All 5	
I10a	May I see your latrine?	Yes .....1 No 2	 **2→J1**
	[INSTRUCTION: Observe the latrine directly and record condition**]**		
I11	Is the latrine functioning?	Yes .....1 No 2	
I12	Does the latrine show signs of use?	Yes .....1 No 2	
I13	Is the latrine itself clean?For example, is the pan and slab (or place to sit while defecating) clean?	Yes .....1 No 2	

	QUESTION	CODE/RESPONSE	SKIP
I14	Is the surrounding area of the latrine clean?	Yes .....1 No 2	
I15	Does the latrine have an unbroken water seal?	Good water seal .....1 Broken water seal.....2 No water seal.....3	
I16	Is there a hand washing station inside the latrine or within 10 paces of the latrine?	Yes .....1 No 2	**2→J1**
I17	Is there a cleansing agent at this hand washing station? (soap, detergent, ash or clay)	Yes .....1 No 2	

MODULE J1.PARTICIPATION IN THE CARE SHOUHARDO II PROGRAM FROM 2010-2014

[INSTRUCTIONS: The respondent to module J1 should be the person in the household most knowledgeable about household's engagement with SHOUHARDO II activities.]

	QUESTION	CODE/RESPONSE	SKIP
	Agriculture, Comprehensive Homestead Development, Fisheries, and Income Generation Activities		
	Could you please tell me which of the following supports (e.g., training, inputs, technical back-stop) that the		

	QUESTION	CODE/RESPONSE	SKIP
	household has received from the SHOUHARDO II Program? Did you receive…..		
J1.1	**a. Agricultural support?**	Yes .....1 No 2	 **2→J1.2**
	b. Agriculture – field crop (Cereals)	Yes .....1 No .....2 DNK 8	
	c. Agriculture – field crop (Vegetable)	Yes .....1 No .....2 DNK 8	
J1.2	**a. Comprehensive Homestead Development (CHD)**	Yes .....1 No 2	 **2→J1.3**
	b. CHD – Vegetable garden	Yes .....1 No .....2 DNK 8	
	c. CHD – Fruit production	Yes .....1 No .....2 DNK 8	
	d. CHD – Goat	Yes .....1 No 2	

	QUESTION	CODE/RESPONSE	SKIP
		DNK 8	
	e. CHD – Poultry	Yes .....1 No .....2 DNK 8	
	f. CHD – Other livestock	Yes .....1 No .....2 DNK 8	
J1.3	**a. Fisheries**	Yes .....1 No 2	**2→J1.4**
	b. Fisheries: fish culture	Yes .....1 No .....2 DNK 8	
	c. Fish – capture/ fishing	Yes .....1 No .....2 DNK 8	

J1.4	**a. IGA (On-farm/Off-farm)**	Yes .....1 No 2	**2→J1.5**
	b. Non agriculture	Yes 1	

		No.....2 DNK 8	
	c. Agriculture - seed, technical assistance	Yes.....1 No.....2 DNK 8	
	d. Goat rearing	Yes.....1 No.....2 DNK 8	
	e. Cow rearing	Yes.....1 No.....2 DNK 8	
	f. Poultry/Bird rearing	Yes.....1 No.....2 DNK 8	
	g. Other livestock rearing	Yes.....1 No.....2 DNK 8	
	h. EDBM/ ME Value chain	Yes.....1 No.....2 DNK 8	
	i. Technical Training	Yes.....1	

		No.....2 DNK 8	
	j. Others(specify if not mentioned above/below)	Yes .....1 No.....2 DNK 8	
J1.5	**Training/Technical support**		
	a. Did anyone in your household receive any training/technical support from the SHOUHARDO II Program?	Yes .....1 No.....2 DNK 8	**2,8→J1.6**
	b. If yes, please list down all those specifically below (max major three)		
	1.	Day ..... ☐ DNK/Can't remember.....98	
	2.	Day ..... ☐ DNK/Can't remember.....98	
	3.	Day ..... ☐ DNK/Can't remember.....98	
J1.6	**Food ration beneficiary**		
	a. Did anyone in your household receive a supplementary food ration from the SHOUHARDO II Program?	Yes .....1 No.....2 DNK 8	**2,8→J1.7**

	b. If yes, did she receive it as a pregnant woman or a lactating mother or for both?	Pregnant woman .....1 Lactating mother .....2 Both .....3 DNK 8	
	c. Number of months received ration (Check Ration Card if Available)	Months ..... ☐☐	
J1.7	**Participation in SHOUHARDO II groups/membership in community group**		
	Is anyone in your household a member of the following groups? **[INTERVIEWER:** Read list one-by-one and record responses**]**		
	a. Agriculture group	Yes .....1 No .....2 DNK 8	
	b. Comprehensive Homestead Development (CHD) group	Yes .....1 No .....2 DNK 8	
	c. Income Generating Activities (IGA) group	Yes .....1 No .....2 DNK 8	
	d. Fisheries group	Yes 1	

		No .....2 DNK 8	
	e. Village Development Committees (VDC)	Yes .....1 No .....2 DNK 8	
	f. Savings Group Management Committee	Yes .....1 No .....2 DNK 8	
	g. ECCD Management Committee	Yes .....1 No .....2 DNK 8	
	h. EKATA Management Committee	Yes .....1 No .....2 DNK 8	
	i. PIC/ Food Commodity Distribution Management Committee	Yes .....1 No .....2 DNK 8	

	j. Mother's Group	Yes .....1 No .....2 DNK 8	
	k. Other (Specify)	Yes .....1 No .....2 DNK 8	

J1.8	**EKATA**		
	a. Are there any women or adolescent girls living in your household?	Yes .....1 No 2	**2→ J1.9**
	b. If yes, are they enrolled in or do they participate in a SHOUHARDO II EKATA?	Yes .....1 No .....2 DNK.....8	**2,8,→J1.9**
	c. If yes, is she is an adult woman or adolescent girl?	Adult woman .....1 Adolescent .....2 Both 3	
J1.9	**EARLY CHILDHOOD CARE DEVELOPMENT (ECCD)**		

	a. Are there any children under 7 years old living in your household?	Yes .....1 No .....2 DNK.....8	**2,8,→J1.10**
	b. Does any child attend preschool at a SHOUHARDO II Early Childhood Development Center (ECCD) (SBK, preschool)?	Yes .....1 No 2	**2→J1.10**
	c. Is the child a boy or girl?	**Boy=1, Girl=2** Child-1 .....☐ Child-2 .....☐ Child-3 .....☐	
J1.10	**WATER AND SANITATION**		
	a. Did SHOUHARDO II Program help your household get access to a latrine?	Yes .....1 No .....2 DNK.....8	
	b. Did SHOUHARDO II Program help your household get access to a tube well? (Do not count tube well platform)	Yes .....1 No .....2 DNK..... 8	
	c. Did the SHOUHARDO II Program help construct/ upgrade/ repair a sanitation drain near your home?	Yes .....1 No .....2 DNK..... 8	
J1.11	**OTHERS**		

	a. Did your household receive support for house rising from the SHOUHARDO II Program?	Yes .....1 No .....2 DNK..... 8	
	b. Did your household receive support for mound protection or extension from the SHOUHARDO II Program?	Yes .....1 No .....2 DNK..... 8	
	c. Did anyone in your household participate in the cash-for-work program of the SHOUHARDO II Program?	Yes .....1 No .....2 DNK..... 8	
	d. Did anyone in your household participate in thefood-for-work program of the SHOUHARDO II Program?	Yes .....1 No .....2 DNK..... 8	
	e. During the past two years, did anyone in your household directly receive any aid or food from programs other than SHOUHARDO II?	Yes .....1 No .....2 DNK..... 8	**2,8,→J2.1**
	f. If "yes", what was the program? **[ASK TO SEE ANY RATION CARDS AND LIST SOURCE OF AID]**	_____	

MODULE J2.FACTORS AFFECTING PARTICIPATION IN SHOUHARDO II

[**Instructions:** Respondent should be Head of Household or Knowledgeable Adult]

Shocks experienced in the last year

Now I'm going to ask you some questions about the shocks, or bad surprises, that hurt the household financially in the last year.

The first type of shock is **climate shocks**, like floods.	
J2.1 During the past 12 months did your household experience any of the following events?	
a. Floods	Yes……1 No……2
b. Cyclone	Yes……1 No……2
c. Drought	Yes……1 No……2
d. Had to move due to river erosion	Yes……1 No……2
e.Do you feel that the situation was better, the same or worse 5 years ago (before SHOUHARDO II began) than it is now with regards to these kinds of climate shocks?	Better……1 Same……2

	Worse……3
Next I'm going to ask you about **family events**.	
During the past 12 months did your household experience any of the following events?	
f. Loss of income due to illness or injury of a family member	Yes……1 No……..2
g. Divorce or abandonment	Yes……1 No……..2
h. Dowry and wedding expenses	Yes……1 No……..2
i. Court case/legal problems	Yes……1 No……..2
j. Death of family member	Yes……1 No……..2
k. Do you feel that the situation was better, the same or worse 5 years ago (before SHOUHARDO II began) than it is now with regards to these kinds of family events?	Better……1 Same……..2 Worse……3
Next I'm going to ask you about **economic shocks.**	
During the past 12 months did your household experience any of the following events?	
l. Sharp food price increase	Yes……1 No……..2

m. Very poor harvest from fields or fish ponds	Yes……..1 No……..2
n Deaths of livestock, including fish	Yes……..1 No……..2
o. Massive loss of household income	Yes……..1 No……..2
p.Do you feel that the situation was better, the same or worse 5 years ago (before SHOUHARDO II began) than it is now with regards to these kinds of economic events?	Better……..1 Same……..2 Worse……..3

Social capital

J2.2	If your household had a problem and needed TK 1000 or food urgently, would you be able to borrow it from relatives living in this community?	Yes .....1 No .....2 DNK.....8
J2.3	If your household had a problem and needed TK 1000 or food urgently, would you be able to borrow it from people in your community who are not your relatives?	Yes .....1 No .....2 DNK.....8
J2.4	Compared to five years ago (before SHOUHARDO II began) has the number of people you think you could ask for help if your household needed money or food urgently:	Increased .....1 Stayed the same .....2 Decreased.....8

J2.5	If a relative in this community had a problem and needed TK 1000 or food urgently, would you be able to lend it to them?	Yes .....1 No .....2 DNK.....8
J2.6	If someone who is not your relative, but lives in this community had a problem and needed Tk 1000 or food urgently, would you be able to lend it to them?	Yes .....1 No .....2 DNK.....8
J2.7	Compared to five years ago (before SHOUHARDO II began) has your ability to give this type of assistance:	Increased .....1 Stayed the same .....2 Decreased.....3
J2.8	Is anyone in your household a friend or relative of a government official in this area?	Yes .....1 No .....2 DNK.....8
J2.9	Is anyone in your household a Union Parishad Elected Leader?	Yes .....1 No .....2 DNK.....8
J2.10	Is anyone in your household a friend or relative of a Union Parishad elected leader?	Yes .....1 No .....2 DNK.....8

Aspirations and confidence to adapt

J2.11	Does anyone in your household communicate regularly with at least one person outside this village?	Yes ..... 1 No ..... 2 DNK..... 8
J2.12	During the past week, has anyone in your household engaged in economic activities with members of other villages? For example, farming, trading, employment, borrowing or lending money.	Yes ..... 1 No ..... 2 DNK..... 8
J2.13	How many times in the past month has anyone in your household got together with people to have food, either in their home or in a public place?	[____]
J2.14	How many DAYS in the past month has anyone in your household attended a mosque or other religious service?	[____]
J2.15	In the last year, how many times has anyone in your household stayed more than 2 days outside this village?	[____]

J2.16: Below is a series of statements that you may agree or disagree with. I'm going to ask you to tell me whether you agree with each one.

		Do you Agree?
a.	When I get what I want, it is usually because I worked hard for it.	Yes .....1 No 2

		DNK 8
b.	Some things that happen to me are God's will and some things are because of my own actions.	Yes .....1 No .....2 DNK 8
c.	To be successful, above all one needs to be lucky.	Yes .....1 No .....2 DNK 8

Personal familiarity with SHOUHARDO II project staff

	QUESTION	CODE/RESPONSE	SKIP
J2.17	For how many years has the SHOUHARDO II project had activities in your community?	[____]	
J2.18	Did you or any member of your household know a staff member of the SHOUHARDO II project before it started having activities in your community?	Yes ..... 1 No …….. 2	**2→ J2.21**
J2.19	How many staff members did you or another household member know before the SHOUHARDO II project started here?	[____]	
J2.20	How did you, or household members, know the staff members at that time? Were they…. [**INSTRUCTION**: Read all choices and circle answers) **[MULTOPLE RESPONSE]**	1. A family member or relative 2. A friend 3. A neighbor 4. An acquaintance	

Time constraints

	QUESTION	CODE/RESPONSE	SKIP
J2.21	Do you do any agricultural production, gardening, or animal raising?	Yes .....1 No 2	**2→ J2.23**
J2.22	On a typical day in the last month, how many hours did you spend on these activities?	[____]	
J2.23	Do you do any post-harvest activities like threshing?	Yes .....1 No…… 2	**2→ J2.25**
J2.24	On a typical day in the last month, how many hours did you spend on post-harvest activities?	[____]	
J2.25	Do you earn any cash income?	Yes .....1 No..... 2	**2→ J2.27**
J2.26	On a typical day in the last month, how many hours did you spend earning cash income?	[____]	
J2.27	Do you do any housework, like cooking, washing dishes and clothes, fetching wood and water?	Yes .....1 No…… 2	**2→ J2.29**

J2.28	On a typical day in the last month, how many hours did you spend on housework?	[____]	
J2.29	Do you take care of any children?	Yes .....1 No 2	**2→ J2.31**
J2.30	On a typical day in the last month, how many hours did you spend taking care of children?	[____]	
J2.31	During the daytime do you spend time doing other things like socializing, watching TV, taking naps, or reading?	Yes .....1 No 2	**2→ J2.33**
J2.32	On a typical day in the last month, how many hours did you spend in these kinds of "leisure" activities where you were not working?	[____]	
J2.33	Imagine ten steps, where on the bottom, the first step, is a person who spends no time in the day doing these leisure activities, and on the highest step, the 10th, is a person who spends the whole day doing them [**INSTRUCTION**: Show picture of steps]. On a typical day in the last month, which step were you on?	[____]	
J2.34	Which step were you on five years ago (before SHOUHARDO II began)?	[____]	

PART II. INFORMATION ON WOMEN'S EMPOWERMENT

[INSTRUCTION]: The questions in Part II should be asked of an adult woman member of the household without men present. To help find a woman, see circled line numbers from column c7 of household roster. The preferred respondent is the female head of household or spouse of the male head of household.]

MODULE K1. RESPONDENT IDENTIFICATION FOR PART II

K1.1	Name of respondent: _____	
K1.2	Line number of respondent _____ **[INSTRUCTION:** Record line number from Module C**]**	☐☐
K1.3	Relationship to household head [SEE CODES BELOW]	☐☐

Codes for K1.3:

1= Household head, 2= Wife of household head, 3= Daughter, 4=Granddaughter, 5=Niece, 6=Mother, 7= Daughter in law, 8=Sister, 9=Sister-in-law, 10=Brother's wife.

MODULE K2. INFORMATION ON WOMEN'S EMPOWERMENT

Decision making in household

	QUESTION	CODE/RESPONSE	SKIP

	QUESTION	CODE/RESPONSE	SKIP
	In the last year, to what extent have you been able to make the following kinds of decisions? **[INSTRUCTION:** First read the possible responses. Then list each item (K2.1 – K2.12) one-by-one and record code number of response.] Code list 1 = Can decide alone 2 = Can decide with husband or other adult male family member 3 = Husband makes decision after discussion with wife 4 = Not involved in decision 5 = Not applicable		
K2.1	Buying small food items, groceries, toiletries		
K2.2	Buying clothing for yourself and your children		
K2.3	Spending money that you yourself have earned		
K2.4	Buying or selling major household assets (land, livestock, crops)		
K2.5	Buying or selling jewelry		
K2.6	Use of loans or savings		
K2.7	Expenses for your children's education		
K2.8	Expenses for your children's marriage		
K2.9	Medical expenses for yourself or your children		
K2.10	Expenses for family planning (contraceptives)		
K2.11	To move to shelter during time of disaster		
K2.12	Actively participate and involved in salish decision making		

	QUESTION	CODE/RESPONSE	SKIP
K2.13	Imagine ten steps, where on the bottom, the first step, is a woman who can make none of these types of decisions, and on the highest step, the 10th, is a person who can make all of them. [**INSTRUCTION**: Show picture of steps]. On a usual day in the last month, which step were you on?	[____]	
K2.14	Which step were you on five years ago (before SHOUHARDO II began)?	[____]	

Freedom of movement

[**INSTRUCTION**: Circle code number of response.]

	QUESTION	CODE/RESPONSE	SKIP
K2.13	Are you allowed to travel to the local market to buy things	Yes ..... 1 No 2	**2→ K2.15**
K2.14	Can you go alone?	Yes ..... 1 No 2	
K2.15	Are you allowed to travel to a local health center or doctor	Yes ..... 1 No 2	**2→ K2.17**
K2.16	Can you go alone?	Yes ..... 1 No 2	
K2.17	Are you allowed to travel to homes of friends in the neighborhood	Yes ..... 1 No 2	**2→ K2.19**
K2.18	Can you go alone?	Yes ..... 1 No 2	
K2.19	Are you allowed to travel to a nearby mosque/shrine	Yes ..... 1 No 2	**2→ K2.21**

	QUESTION	CODE/RESPONSE	SKIP
K2.20	Can you go alone?	Yes ..... 1 No 2	

Earning of Cash Income

	QUESTION	CODE/RESPONSE	SKIP
K2.21	As you know, some women take up jobs for which they are paid in cash. Others sell things, have a small business or work on the farm or in the family business. In the last 12 months, have you done any of these things?	Yes..... 1 No 2	**2→ K2.23**
K2.22	If yes, did you earn any money from your work in the last 12 months?	Yes..... 1 No 2	

Attitudes about family life

[**INTRODUCTION:** Now I would like to get your opinion on some aspects of family life. Please tell me if you agree or disagree with each statement.]

	QUESTION	CODE/RESPONSE	SKIP
K2.23	The important decisions in the family should be made only by the men of the family.	Agree ..... 1 Disagree..... 2 DNK/depends 8	
K2.24	If the wife is working outside the home, then the husband should help her with household chores.	Agree ..... 1 Disagree..... 2 DNK/depends 8	
K2.25	A married woman should be allowed to work outside the home if she wants to.	Agree ..... 1 Disagree..... 2 DNK/depends 8	

K2.26	The wife has a right to express her opinion even when she disagrees with what her husband is saying.	Agree ..... 1 Disagree..... 2 DNK/depends 8	
K2.27	A wife should tolerate being beaten by her husband in order to keep the family together.	Agree ..... 1 Disagree..... 2 DNK/depends 8	
K2.28	It is better to send a son to school than it is to send a daughter.	Agree ..... 1 Disagree..... 2 DNK/depends 8	

Domestic Violence

	QUESTION	CODE/RESPONSE	SKIP
K2.29	Sometimes a husband is annoyed or angered by things his wife does. In your opinion, is a husband justified in hitting or physically abusing his wife in the following situations?		
	a. If she goes out without telling him	Yes.....1 No 2	
	b. If she neglects the children	Yes.....1 No 2	
	c. If she argues with him	Yes.....1 No 2	
	d. If she refuses to have sex with him	Yes.....1 No 2	
	e. If she burns the food	Yes.....1 No 2	
	f. If she does not obey elders	Yes.....1 No 2	
K2.30	Did any female member of your household experience being yelled at or struck during the previous year?	Yes.....1 No 2	

K2.31	What was the nature of this yelling or striking?	Physical ..... 1 Verbal..... 2	
K2.32	How often did incidences like this occur?	One time only ..... 1 Several times..... 2	
K2.33	Was any assistance sought after these incidents?	Yes..... 1	
K2.34	Did you get assistance from ….?		
	a. A medical facility?	Yes..... 1	
	b. The police	Yes..... 1	
	c. A lawyer or legal firm	Yes..... 1	
	d. A relative, friend or neighbor	Yes..... 1	
	e. A women's support group	Yes..... 1	
	f. Other	Yes..... 1	

Women's Participation in Community Groups and Local Institutions

Which of the following groups are you a member of or in a responsible position?

Example: Chairman, Secretary, Cashier, Committee member.

	QUESTION	CODE/RESPONSE	SKIP
K2.35	Savings or credit group?	Member ..... 1 Committee Member/responsible position 2	
K2.36	Community agriculture (including fishery group) or homestead garden group or IGA group?	Member ..... 1 Committee Member/responsible position 2	
K2.37	Community health group	Member ..... 1 Committee Member/responsible position 2	
K2.38	Parent-Teacher Association or School Management Committee	Member ..... 1 Committee Member/responsible position 2	
K2.39	Mother's Group	Member ..... 1 Committee Member/Officer..... 2	

K2.40	Women's support group (EKATA, VDC, ECCDMC, MCHN mothers, Women Empowerment, EVAWF Forum, BRAC PalliSamaj, NariPokkhoDorbar network etc.)	Member ..... 1 Committee Member/responsible position 2	
K2.41	UP Special Committee	Member ..... 1 Committee Member/responsible position 2	
K2.42	UP Standing Committee	Member ..... 1 Committee Member/responsible position 2	
K2.43	UP disaster committee	Member ..... 1 Committee Member/responsible position 2	
K2.44	Other_____	Member ..... 1 Committee Member/responsible position 2	
K2.45	Have you ever attended a Salish meeting in your village?	Yes..... 1 No 2	**2→Module L**
K2.46	Did you speak at the meeting?	Yes..... 1	

PART III. INFORMATION ON CHILDREN 0-59 MONTHS OLD AND THEIR MOTHERS

MODULE L. RESPONDENT AND CHILD IDENTIFICATION FOR PART III

The purpose of this module is to select the index child for administration of Modules M, N, O, P, Q, and R to identify the children to be weighed and measured for Module T (all children in the household under five).

INSTRUCTION: List all of the children living in the household who are under 6 years of age, that is, those with circled line numbers in column C8 of Module C.

*****If no child is under 6 years, then the survey is complete *****

	Names and line numbers of children identified to be under 6years from Module C.
L1	Child 1 _____ 1. Line No____ ☐ ☐
	Child 2 _____ 2. Line No____ ☐ ☐
	Child 3 _____ 3. Line No____ ☐ ☐
	Child 4 _____ 4. Line No____ ☐ ☐
	Child 5 _____ 5. Line No____ ☐ ☐

INSTRUCTION: Then read the children's names to present household members and ask: **"Are these all of the children younger than 6 years living here?"** If there are more children, add their names and line numbers.

Age verification of children and selection of children for Module T

I would like to ask you some questions about (NAME). I will need (NAME'S) vaccination or birth card.

L2.1	**CHILD 1** What is (NAME's) birth date? Verify birth date on vaccination or birth card and fill in the day, month and year. If day is not known, enter **'99'.** If a vaccination or birth card is not available, ask the mother if she knows the birth date and if she does, enter it	Day ..... ☐☐	
L2.2	Check birth date. Was child born on TODAY's DATE 2009 or later?	Yes ..... No	**1→ Enter Line number**
L2.3	**CHILD 2** What is (NAME's) birth date?	Day ..... ☐☐	
L2.4	Check birth date. Was child born on TODAY's DATE 2009 or later?	Yes	**1→ Enter Line number**
L2.5	**CHILD 3** What is (NAME's) birth date?	Day ..... ☐☐	
L2.6	Check birth date. Was child born on TODAY's DATE 2009 or later?	Yes	**1→ Enter Line number**
L2.7	**CHILD 4** What is (NAME's) birth date?	Day ..... ☐☐	
L2.8	Check birth date. Was child born on TODAY's DATE 2009 or later?	Yes	**1→ Enter Line number**
L2.9	**CHILD 5** What is (NAME's) birth date?	Day ..... ☐ Month ☐	

L2.10	Check birth date. Was child born on TODAY's DATE 2009 or later?	Yes.....	**1→ Enter Line number**

Selection of index child

INSTRUCTION: If there is only one child listed, this is the index child. If there is more than one child, use the "numbered papers in a container" method to randomly choose the index child and record the information about the child below.

	Name of index child: _____
L3	Line number of index child ☐☐
L3a	Date of birth of index child Day ..... ☐☐ Month..... ☐☐ Year ..... ☐☐☐☐

***** The index child's mother (or caretaker) is the respondent for the remainder of the questionnaire *****

Information on respondent for Part III: General

L4	Name of respondent: _____

L5	Line number of respondent Record line number from Module **C**	..... ☐☐
L6	Relationship to household head (see codes below)	..... ☐☐
L7	How old are you? (years)	..... ☐☐
L8	Are you currently pregnant?	Yes..... No ..... DNK .....
L9	What is your level of education? (see codes below)	Code..... ☐☐
L10	If the respondent is the caretaker (but not the mother) of the child, write 99 in the box.	Code.....☐☐

Codes for L6: 1= Household head, 2= Wife of household head, 3= Daughter, 4=Granddaughter, 5=Niece, 6=Mother, 7= Daughter in law, 8=Sister, 9=Sister-in-law, 10=Brother's wife.

Codes for L9: 0 = No class, 1 = Class 1, 2 = Class 2, 3 = Class 3, 4 = Class 4, 5 = Class 5, 6 = Class,6

7 = Class 7, 8 = Class 8, 9 = Class 9, 10 = SSC pass, 11 = HSC pass, 12 = Graduate, 13 = Masters.

MODULE M. ANTENATAL CARE

Now I would like to ask you some questions about your **current or most recent** pregnancy.

(Interviewer: See question L8 to determine if respondent is pregnant)

	QUESTION	CODE/RESPONSE	SKIP
M1	Did you see anyone for antenatal care during your pregnancy?	Yes ..... 1 No 2	 **2→M8**
M2	Whom did you see?	Doctor ..... 1 Nurse/midwife..... 2 Traditional birth attendant ..... 3 Skilled Birth Attended (SBA) ..... 4 Community/village health worker... 5 Other 6	
M3	Where did you receive antenatal care during your pregnancy?	Your home ..... 1 Other home ..... 2 Government hospital ..... 3 Other Government health facility ... 4 Private hospital/clinic ..... 5 Community Clinic..... 6 Other Private health facility ..... 7 Other 8	
M4	How many months pregnant were you when you first received antenatal care?	Number of months ..... ☐☐ DNK.....98	
M5	How many check-ups did you have during your pregnancy?	Number of visits ..... ☐☐	
M6	Do you have an antenatal card or a prescription sheet for your most recent pregnancy? If yes: May I see it please?	Yes, Seen.....1 Yes, Not Seen.....2	

		No Card.....3	**2,3 →M8**
M7	**Interviewer:** Verify number of antenatal visits (Is the number of documented visits on the card different than the stated number of visits in M5?)	Same as stated.....1 Different than stated .....2 Note number of documented visits..... ☐☐	
M8	During your pregnancy, do/did you take the same amount of food as you usually take or do/did you take more or less food than you usually take?	More food .....1 Less food .....2 Same as usual 3	
M9	During your pregnancy, do/did you take as much daytime rest as you usually take?	More rest .....1 Less rest .....2 Same as usual 3	
M10	Did you receive Vitamin A Capsule within 42 days (6 weeks) of delivery of the child? [**INTERVIEWER:** Show her the red vitamin A capsule]	Yes .....1 No .....2 Can't Recall .....3 Not applicable (still pregnant).... 4	
M11	In your last pregnancy, did you take any iron and folic acid tablets like this? **[INTERVIEWER:** Show her the iron tablet]	Yes .....1 No 2	**2→ M13**
M12	For how many months during your last pregnancy did you take iron and folic acid tablets?	1-2.....1 3-4.....2 5-6… .....3 > 6 4	
M13	Have you taken an iron and folic acid tablet in the last 7 days/ latest 7 days in pregnancy during your current or index child's name pregnancy?	Yes .....1 No .....2 Can't Recall 3	

MODULE N. FOOD CONSUMPTION OF MOTHER

Now I would like to ask you **(mother)** about the types of foods that you **(mother)** ate yesterday during the day or at night. Please include all foods, including the foods eaten here at your house or somewhere else.

	QUESTION	CODE/RESPONSE	SKIP
N1	Any cereals, e.g. rice, bread, wheat, wheat bread, rice flakes, puffed rice, barley, wheat grain, popcorn?	Yes..... No	
N2	Any pumpkin, carrots, squash, or sweet potatoes or vegetables that are yellow or orange inside?	Yes..... No	
N3	Any white potatoes, white yams or other foods made from roots and tubers?	Yes..... No	
N4	Any dark green, leafy vegetables, e.g. ipomoea, amaranth, spinach, parwar sag, and drumstick leaves?	Yes..... No	
N5	Any other vegetables, e.g. cucumber, radish, pepper, string beans, cabbage, cauliflower, radish, onion?	Yes..... No	
N6	Any ripe papaya, mangoes or other fruits that are yellow or orange inside?	Yes..... No	
N7	Any other fruits, e.g. banana, papaya, sithphal, grapefruit, apple, orange, jackfruit, jambu fruit, plums, melon, tomato, date, lemon, etc. ?	Yes..... No	
N8	Any meat, such as, liver, beef, poultry, lamb, pork, etc.?	Yes..... No	
N9	Any eggs?	Yes..... No	
N10	Any fresh or dried fish or shellfish?	Yes..... No	
N11	Any legumes/pulses, e.g. Bengal gram, black gram dal, lentil, Khesarl?	Yes..... No	
N12	Any Milk or Milk products, e.g. cow milk, buffalo milk, goat milk, yogurt, curd, cheese?	Yes..... No	

N13	Any foods prepared using fat, e.g., oil, butter, dalda or ghee?	Yes..... No	
N14	Any sugar or honey?Example:sugar, gur, honey, chocolate	Yes..... No	

MODULE O. MOTHER'S HAND WASHING HABITS AND DISPOSAL OF CHILD'S FECES

	QUESTION	CODE/RESPONSE	SKIP
Hand washing habits			
O1	Please mention all of the times when it is important to wash your hands. **Any other time besides this?** **Any other time besides this?** **[DO NOT READ THE ANSWERS]**	Before eating ..... 01 After eating..... 02 Before praying ..... 03 Before breastfeeding or feeding a child ..... 04 Before cooking or preparing food ... 05 After defecation/urination ..... 06 After cleaning a child that has defecated/changing a child's diaper ..... 07 When my hands are dirty ..... 08 After cleaning the toilet or potty..... 09 Other (specify) ..... 10 DNK..... 98	

O2	Can you please show me where members of your household most often wash their hands? **[OBSERVE AND CIRCLE RESPONSE CODE]**	Inside/within 10 paces of the toilet facility ..... 1 Inside/within 10 paces of the kitchen/cooking place ..... 2 Elsewhere in home or yard..... 3 Outside yard ..... 4 No specific place..... 5 No permission to see..... 6	**5,6→O5**
O3	Is water present at the place? **[OBSERVE:**If there is a tap or pump see if water comes out. If there is a container, see if water is in it.]	Yes ..... 1 No 2	
O4	Is soap, detergent, ash or clay present at the place? [OBSERVE AND CIRCLE ALL RESPONSE CODES]	None ..... 1 Bar soap..... 2 Detergent (powder/liquid/paste)..... 3 Liquid soap (including shampoo)..... 4 Ash or clay 5	
Disposal of child's feces			
O5	The last time (NAME) passed stool, where did he/she defecate?	Used potty ..... 1 Used washable diaper ..... 2 Used disposable diaper ..... 3 Went in his/her clothes ..... 4 Went in house/yard..... 5 Went outside of house/yard ..... 6 Used latrine ..... 7 Other 8	**7→ P1**

O6	The last time (NAME) passed stool, where were his/her feces disposed?	Dropped into toilet facility/latrine .... 1 Buried ..... 2 Put into container for trash ..... 3 In yard..... 4 In sink or tub..... 5 Thrown into waterway ..... 6 Washed or rinsed away ..... 7 Left at the same place where the child defecated ..... 8 Threw it away to bush/outside of the house..... 9	**7→ O7** **All Others→P1**
O7	If "washed or rinsed away", probe where the waste water was disposed.	Dropped into toilet facility ..... 1 Put into container for trash ..... 2 In yard..... 3 Outside of yard ..... 4 Into sink or tub ..... 5 Thrown into waterway 6	

MODULE P. FEEDING OF CHILDREN 0-23 MONTHS

*****For index child if 0-23 months*****

OR

*****If the index child is not 0-23 months, and another child in the household is 0-23 months, ask Module P and Module Q questions for the child that is 0-23 months*****

Check the index child's birth date (question L3a). Was the index child (or any child in the household) born on today's date in 2012 or later? If so, he/she is 0-23 months. If no children are 0-23 months, skip to Module R.

To mother: Now I would like to ask you about what your child eats and drinks.

	QUESTION	CODE/RESPONSE	SKIP
P0	Is this the index child?	Yes..... No.....	**1 → P1**
P0.1	Enter child's roster number from Module C		
P1	Has (NAME) ever been breastfed?	Yes..... No..... DNK	**2,8→ P5**
P2	Do you currently breastfeed your child?	Yes..... No..... Not applicable ..... DNK	**2,3,8→ P5**
P3	Was (NAME) breastfed yesterday during the day or at night?	Yes..... No..... DNK	
P4	Did you feed any other food even water your child without breastfeeding in last 24 hours?	Yes..... No.....	

		Not applicable ..... DNK	
P5	[Now I would like to ask you about some medicines and vitamins that are sometimes given to infants.] Was (NAME) given any vitamin drops or other medicines as drops yesterday during the day or at night?	Yes ..... No..... DNK ..... NR.....	
P6	Was (NAME) given any oral rehydration solution yesterday during the day or night? (salt/sugar saline, Labon-gur, packet saline, rice poser)?	Yes ..... No..... DNK	

Child's consumption of liquids (0-23 Months)

Read the questions below. Read the list of liquids one by one and circle applicable code.

	Next I would like to ask you about some liquids that (NAME) may have had yesterday during the day or night.			
	P7: Did (NAME) have the following water or liquids?		**P8:**How many times yesterday during the day or at night did (NAME) consume any….?	
	a. Plain water?	Yes..... 1 No ..... 2 DNK 8		
	b. Infant formula/baby formula bought with money?	Yes..... 1→ No ..... 2 DNK 8	Times ..... ☐☐ DNK..... 98	
	c. Milk, such as tinned, powdered or fresh animal milk?	Yes..... 1→ No ..... 2 DNK 8	Times ..... ☐☐ DNK..... 98	

	d. Juice or juice drinks?	Yes .....1 No ..... 2 DNK 8		
	e. Clear broth?	Yes .....1 No ..... 2 DNK 8		
	f. Yogurt?	Yes..... 1→ No ..... 2 DNK 8	Times ..... ☐☐ DNK..... 98	
	g. Thin porridge?	Yes .....1 No ..... 2 DNK 8		
	h. Any other liquids?	Yes .....1 No ..... 2 DNK 8		

Child's consumption of solids (0-23 Months)

As the respondent recalls foods, in the table below circle the response in the column next to the food group. If the food is not listed, write it down in the "OTHER FOODS" box (P9).

Ask the mother: Please describe everything that (NAME) ate yesterday during the day or night, whether at home or outside the home.

Use these probes.

(a) Think about when (NAME) first woke up yesterday. Did (NAME) eat anything then?

IF YES: Please tell me everything (NAME) ate then … anything else?

Keep asking until respondent indicates nothing else. Then continue to question (b).

(b) What did (NAME) do after that? Did (NAME) eat anything then?

IF YES: Please tell me everything (NAME) ate then… anything else?

Keep asking until respondent indicates nothing else.

Keep repeating question (b) until the respondent says the child went to sleep until the next day.

If respondent mentions anything like a porridge, sauce or stew, probe:

(c) What ingredients were in that (MIXED DISH)?

Anything else?

P9	**OTHER FOODS:** Write in other foods mentioned by mother, not listed below, here. ----------	Yes ..... 1 No 2	
P10A	Any cereals: porridge, bread, rice, noodles, or other foods made from cereals	Yes ..... 1 No ..... 2 DNK..... 8	
P10B	Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside	Yes ..... 1 No ..... 2 DNK..... 8	
P10C	White potatoes, white yams, manioc, cassava, or any other foods made from roots	Yes ..... 1 No 2	

		DNK 8	
P10D	Any dark green leafy vegetables, such as ipomoea, amaranth, spinach, parwar sag, and drumstick leaves	Yes ..... 1 No ..... 2 DNK 8	
P10E	Ripe mangoes, ripe papayas or other fruits that are yellow or orange inside	Yes ..... 1 No ..... 2 DNK 8	
P10F	Any other fruits or vegetables	Yes ..... 1 No ..... 2 DNK 8	
P10G	Liver, kidney, heart or other organ meats	Yes ..... 1 No ..... 2 DNK 8	
P10H	Any meat, such as beef, pork, lamb, goat, chicken, or duck	Yes ..... 1 No ..... 2 DNK 8	
P10I	Eggs	Yes ..... 1 No ..... 2 DNK 8	
P10J	Fresh or dried fish, shellfish, or seafood	Yes ..... 1 No ..... 2 DNK 8	
P10K	Any foods made from beans, peas, lentils, nuts or seeds, such as Bengal gram, black gram, dal, Khesari	Yes ..... 1 No ..... 2 DNK 8	
P10L	Cheese, yogurt, curd or other milk products	Yes 1	

		No ..... 2 DNK..... 8	
P10M	Any oil, butter, dalda or ghee or foods made with any of these	Yes ..... 1 No ..... 2 DNK..... 8	
P10N	Any sweet foods such as honey, chocolates, sweets, candies, pastries, cakes or biscuits	Yes ..... 1 No ..... 2 DNK..... 8	
P10O	Condiments for flavor, such as chilies, spices, herbs, or fish powder	Yes ..... 1 No ..... 2 DNK..... 8	
P10P	Grubs, snails, or insects	Yes ..... 1 No ..... 2 DNK..... 8	
P10Q	Foods made with red palm oil, red palm nuts, or red palm nut pulp sauce	Yes ..... 1 No ..... 2 DNK..... 8	
	INTERVIEWER: CHECK CATEGORY A-Q. IF NO IN ALL CATEGORIES, THEN GO TO P11.IF ONLY ONE CATEGORY IS CIRCLED AS YES OR ALL CATEGORY AS DNK, THEN GO TO P12.		
P11	Did (NAME) eat any solid, semi-sold, or soft foods yesterday during the day or at night?	Yes ..... 1 No ..... 2 DNK..... 8 If yes, probe: What kinds of foods did (NAME) eat? Go back to P7 and record foods eaten. Then continue with P10.	**2,8→ P13**
P12	How many times did (NAME) eat solid, semi-solid, or soft foods other than liquids	Number of times..... ☐☐	

	yesterday during the day or night?	DNK 98	
P13	Did (NAME) drink anything from a bottle with a nipple yesterday during the day or night?	Yes ..... 1 No ..... 2 DNK 8	

MODULE Q. IMMUNIZATION OF CHILDREN 0-23 MONTHS AND MICRONUTRIENT SUPPLEMENTATION (MONIMIX/OTHER SPRINKLES)

*****If the index child is not 0-23 months, and another child in the household is, ask Module P and Module Q questions for the child that is 0-23 months*****

Circle the code number of the response and follow the arrowed skip codes.

	QUESTION	CODE/RESPONSE	SKIP
Q1	Does the mother have a vaccination card for (NAME)? Have you seen it?	Yes, Seen ..... 1 Yes, Not Seen ..... 2 No Card 3	**2,3→ Q4**

	QUESTION	CODE/RESPONSE				SKIP
Q2	(1) Copy vaccination date for each vaccine from the card. (2) Write “44” in “Day” column if card shows that a vaccination was given but no date is recorded.		**Day**	**Month**	**Year**	**Skip to Q10 If all vaccines given and recorded in card**
		BCG	☐☐	☐	☐☐☐	
		PO (OPV)		☐	☐	
		P1 (OPV)	☐☐			
		P2 (OPV)	☐☐	☐	☐☐☐	
		P3 (OPV)		☐	☐	
		DPT/Penta-1	☐☐	☐	☐☐☐	
		DPT/Penta-2	☐☐	☐	☐	
		DPT/Penta-3				
		MEA/MM	☐☐	☐	☐☐☐	
			☐☐	☐	☐	
			☐☐	☐	☐☐☐	
			☐☐	☐	☐	
			☐☐	☐	☐☐☐	
				☐	☐	
				☐	☐☐☐	
				☐	☐	
				☐	☐☐☐	
				☐	☐	
				☐	☐☐☐	
				☐	☐	

	QUESTION	CODE/RESPONSE	SKIP
Q3	Has (NAME) received any vaccinations that were not recorded on this card? ***Record "Yes" only if respondent mentions BCG, POLIO 1-3, Pentavalent 1-3, and/or measles/MMR vaccine(s)*** **Probe for vaccinations and write "66" in the corresponding day column in Question Q2**	Yes ..... 1 No ..... 2 DNK 8	**2,8→Q10**
Q4	Please tell me if (NAME) received any of the following vaccinations: A BCG vaccination against tuberculosis, that is, an injection in the left shoulder that caused a scar?	Yes ..... 1 No ..... 2 DNK 8	
Q5	Polio vaccine that is, drops in the mouth?	Yes ..... 1 No ..... 2 DNK 8	**2,8→ Q7**
Q6	How many times did (NAME) receive polio vaccine:	Times ..... ☐	
Q7	DPT /Pentavalent vaccination, that is, an injection given in the thigh or buttocks, sometimes at the same time as polio drops?	Yes ..... 1 No ..... 2 DNK 8	**2,8→ Q9**
Q8	How many times?	Number of times ..... ☐	
Q9	An injection given to prevent measles/MMR after 9 months of age?	Yes ..... 1 No ..... 2 DNK 8	

	QUESTION	CODE/RESPONSE	SKIP
Q10	Has (NAME) received a vitamin A capsule like this in the last 6 months? **Interviewer:** ***Check vaccination card if available. Show blue and red Vitamin A capsules as either may have been given depending on child's age.***	Yes ..... 1 No ..... 2 DNK 8	

Q11	Are you or someone else adding any Moni-mix or other sprinkles packets into (NAME's) food?	Yes ..... 1 No ..... 2 DNK 8	
Q12	Do you think that children of age 6 to 59 months (less than 5 years) can suffer from micronutrient deficiencies?	Yes ..... 1 No ..... 2 DNK 8	
Q13	Do you give your child any drop/tablet/ syrup/packet so that the child does not suffer from iron deficiency?	Yes ..... 1 No ..... 2 DNK 8	**2,8→ R1**
Q14	What do you give to child to prevent iron deficiency? [MULTIPLE RESPONSE]	Iron tablet ..... 01 Iron syrup ..... 02 MNP ..... 03 Pustikona ..... 04 Monimix ..... 05 Mymix ..... 06 Multivitamin tablet ..... 07 Multivitamin syrup ..... 08 Homeopathik medicine ..... 09 Quack medicine ..... 10 Other (specify) ..... 11 DNK 98	

MODULE R. DIARRHEA AMONG CHILDREN 0-59 MONTHS

INSTRUCTIONS: Administer module R for the selected index child between 0-59 months

	QUESTION	CODE/RESPONSE	SKIP

	QUESTION	CODE/RESPONSE	SKIP
R1	Has (NAME) had diarrhea (having 3 or more loose stools in 24 hours) in the last 2 weeks?	Yes .....1 No 2	 **2→S1**
R2	Now I would like to know how much (NAME) was given to drink during the diarrhea (including breastmilk). Was he/she given less than usual to drink, about the same amount, or more than usual to drink? ++ ***If "less", probe: Was he/she given much less than usual to drink or somewhat less?***	Much less .....1 Somewhat less .....2 About the same.....3 More.....4 Nothing to drink .....5 DNK 8	
R3	When (NAME) had diarrhea, was he/she given less than usual to eat (solid/semi-solid food), about the same amount, more than usual, or nothing to eat? If "less", probe: Was he/she given much less than usual to drink or somewhat less?	Much less .....1 Somewhat less .....2 About the same.....3 More.....4 Nothing to drink .....5 DNK 8	
R4	Are you still breastfeeding (NAME**)?**	Yes .....1 No 2	 **2→R6**
R5	Did you continue to breastfeed (NAME) during diarrhea?	Continued.....1 Did not continue 2	
R6	Was anything given to (NAME) to treat the diarrhea? [MULTIPLE RESPONSE]	A. Homemade (sugar/salt) saline ..... 01 B. Homemade (Labon-gur) saline..... ... 02 C. Packet saline/ORS ..... 03 D. Rice poser..... 04 E. Pill/capsule/syrup ..... 05 F. Injection ..... 06 G. Intravenous ..... 07 H. Home remedies/herbal medicine/ plants ..... 08 I. Plain drinking water ..... 09 J. Others (Specify)..... 11 K. Did not give anything 12	

MODULE S: Additional information on respondent for Part III

Information on respondent for Part III: Participation in SHOUHARDOII

	QUESTION	CODE/RESPONSE	SKIP
S1	Are you a member of an EKATA group?	Yes..... 1 No 2	 **2→ S4**
S2	How often does the EKATA group usually meet?	Once a week ……..1 Once a month ……2 Once a year ……3	
S3	How many EKATA group meetings have you attended in the last year (since last December)?	[____]	
S4	Are you a member of a SHOUHARDO II savings group?	Yes..... 1 No 2	
S5	Have you attended a SHOUHARDO II courtyard session (UthanBoithok) with other mothers on the health and nutrition of mothers and children?	Yes..... 1 No 2	**1→ S8**
S6	How many of these courtyard sessions have you attended in the last year (since last December)?	[____]	
S7	What subjects did you learn about at the courtyard sessions? **(Read each session type to enumerator)**		
S7a	Antenatal care (care for pregnant women)	Yes..... 1 No ..... 2 DNK 8	

S7b	Food and nutrition for pregnant women and lactating mothers	Yes..... 1 No ..... 2 DNK 8	
S7c	Post-natal care for mothers and babies	Yes..... 1 No ..... 2 DNK 8	
S7d	Breastfeeding and complementary feeding of children	Yes..... 1 No ..... 2 DNK 8	
S7e	Children's illnesses: ARI, Diarrhoea	Yes..... 1 No ..... 2 DNK 8	
S7f	Immunization	Yes..... 1 No ..... 2 DNK 8	
S7g	Growth monitoring and promotion (GMP)	Yes..... 1 No ..... 2 DNK 8	
S7h	Good hygiene practices (e.g., hand washing, disposal of feces)	Yes..... 1 No ..... 2 DNK 8	
S7i	Safe drinking water/Sanitary latrine	Yes..... 1 No ..... 2 DNK 8	

S7j	Health in disaster	Yes..... 1 No ..... 2 DNK 8	
S7k	Physical and mental torture during pregnancy	Yes..... 1 No ..... 2 DNK 8	
S8	Have you attended a SHOUHARDO II cooking and feeding demonstration (khichuri) session?	Yes..... 1 No 2	
S9	Does the SHOUHARDO II project have a place where you can take your child/children to be weighed and measured each month?	Yes..... 1 No 2	**2→S11**
S10	How many months in the last year have you taken at least one of your children to be weighed and measured in the last year (since last December?).	[____]	
S11	Have you ever received a food ration (wheat, oil or split peas) from the SHOUHARDO II program?	Yes..... 1 No 2	**2→S15**
S12	Did you receive a food ration every month since last December?	Yes..... 1 No 2	**2→S15**
S13	How many months since last December did you NOT receive a food ration?	[____]	
S14	Why did you not receive a food ration in every month?	Not eligible (not pregnant or lactating) ..... 1 Did not pick up the ration ..... 2 Ration not available 3	

Information on respondent for Part III: Time constraints

	QUESTION	CODE/RESPONSE	SKIP
S14.1	Is the current respondent the same respondent to respond to Module J2?	Yes ..... No	**1→ S29**

	QUESTION	CODE/RESPONSE	SKIP
S15	Do you do any agricultural production, gardening, or animal raising?	Yes .....1 No 2	**2→ S17**
S16	On a typical day in the last month, how many hours did you spend on these activities?	[____]	
S17	Do you do any post-harvest activities like threshing?	Yes .....1 No…… 2	**2→ S19**
S18	On a typical day in the last month, how many hours did you spend on post-harvest activities?	[____]	
S19	Do you earn any cash income?	Yes .....1 No..... 2	**2→ S21**
S20	On a typical day in the last month, how many hours did you spend earning cash income?	[____]	
S21	Do you do any housework, like cooking, washing dishes and clothes, fetching wood and water?	Yes .....1 No…… 2	**2→ S23**
S22	On a typical day in the last month, how many hours did you spend on housework?	[____]	
S23	Do you take care of any children?	Yes .....1 No 2	**2→ S25**
S24	On a typical day in the last month, how many hours did you spend taking care of children?	[____]	
S25	During the daytime do you spend time doing other things like socializing, watching TV, taking naps, or reading?	Yes 1	**2→ S27**

		No 2	
S26	On a typical day in the last month, how many hours did you spend in these kinds of "leisure" activities where you were not working?	[____]	
S27	Imagine ten steps, where on the bottom, the first step, is a person who spends no time in the day doing these leisure activities, and on the highest step, the 10th, is a person who spends the whole day doing them [**INSTRUCTION**: Show picture of steps]. On a typical day in the last month, which step were you on?	[____]	
S28	Which step were you on five years ago (before SHOUHARDO II began)?	[____]	

Information on respondent for Part III: Decision making in household

INSTRUCTION: First answer Question S29 to determine whether the respondent should answer the rest of the questions in this module.

	QUESTION	CODE/RESPONSE	SKIP
S29	Is the respondent for PART III also the respondent for PART II?	Yes..... 1 No 2	**1→ T0**

Decision making in household

	QUESTION	CODE/RESPONSE	SKIP

	QUESTION	CODE/RESPONSE	SKIP
	In the last year, to what extent have you been able to make the following kinds of decisions? **[INSTRUCTION:** First read the possible responses. Then list each item (S30.1 – S30.12) one-by-one and record code number of response.] Code list 1 = Can decide alone 2 = Can decide with husband or other adult male family member 3 = Husband makes decision after discussion with wife 4 = Not involved in decision 5 = Not applicable (Decision not made)		
S30.1	Buying small food items, groceries, toiletries		
S30.2	Buying clothing for yourself and your children		
S30.3	Spending money that you yourself have earned		
S30.4	Buying or selling major household assets (land, livestock, crops)		
S30.5	Buying or selling jewelry		
S30.6	Use of loans or savings		
S30.7	Expenses for your children's education		
S30.8	Expenses for your children's marriage		
S30.9	Medical expenses for yourself or your children		
S30.10	Expenses for family planning (contraceptives)		
S30.11	To move to shelter during time of disaster		
S30.12	Actively participate and involved in salish decision making		

	QUESTION	CODE/RESPONSE	SKIP
S31	Imagine ten steps, where on the bottom, the first step, is a woman who can make none of these types of decisions, and on the highest step, the 10th, is a person who can make all of them. [**INSTRUCTION**: Show picture of steps]. On a usual day in the last month, which step were you on?	[____]	
S32	Which step were you on five years ago (before SHOUHARDO II began)?	[____]	

MODULE T. HEIGHT AND WEIGHT OF ALL CHILDREN IN HOUSEHOLD 0-59 MONTHS AND MOTHER

***** For ALL children 0-59 months in household *****

[**INSTRUCTION:** Request permission of the respondent to measure her height and weight and that of her children under 5]

	QUESTION	CODE/RESPONSE		
		Child 1	Child 2	Child 3
T0	**Interviewer:** Write in the line number of the child from the right hand column of Question L2.	☐	☐	☐
T1	**Interviewer:** Write in the birth date of the child from Question L2	Day..... ☐☐ Month..... ☐☐ Year.. ☐☐☐☐	Day ..... ☐☐ Month..... ☐☐ Year .. ☐☐☐☐	Day..... ☐☐ Month..... ☐☐ Year . ☐☐☐☐
	Interviewer: If the child was born on TODAY's DATE in 2012 or later, he/she is 0-23 months. Measure length of child lying down. If the child was born before TODAY's DATE in 2012 or earlier, he/she is 24 to 59 months. Measure standing height.			
T2	Sex of child	Male..... 1 Female 2	Male .....1 Female.....2	Male .....1 Female.....2
T3	Height or length of child in centimeters **988 = NOT MEASURED**	☐☐☐.☐cm	☐☐☐.☐cm	☐☐☐.☐cm
T4	Height of mother or caregiving centimeters	☐☐☐.☐cm	☐☐☐.☐cm	☐☐☐.☐cm

	QUESTION	CODE/RESPONSE		
		Child 1	Child 2	Child 3
T5	Weight of child (in kilograms)	☐☐.☐☐kg	☐☐.☐☐kg	☐☐.☐☐kg
T6	Weight of the mother or caregiver(in kilograms)	☐☐.☐☐kg	☐☐.☐☐kg	☐☐.☐☐kg
T7	Date of height measured/weighed (today)	Day..... ☐☐ Month..... ☐☐ Year.. ☐☐☐☐	Day ..... ☐☐ Month..... ☐☐ Year .. ☐☐☐☐	Day..... ☐☐ Month..... ☐☐ Year . ☐☐☐☐
T8	Result for child	Child measured..... 1 Child sick..... 2 Child not present ..... 3 Child refused..... 4 Mother refused ..... 5 Other (Specify)..... 6	Child measured .....1 Child sick.....2 Child not present.....3 Child refused .....4 Mother refused .....5 Other (Specify) 6	Child measured.....1 Child sick.....2 Child not present.....3 Child refused .....4 Mother refused .....5 Other (Specify) 6

	QUESTION	CODE/RESPONSE	
		Child 4	Child 5
T0	**Interviewer:** Write in the line number of the child from the right hand column of Question L2.	☐	☐
T1	**Interviewer:** Write in the birth date of the child from Question L1	Day..... ☐☐ Month..... ☐☐ Year.. ☐☐☐☐	Day ..... ☐☐ Month..... ☐☐ Year .. ☐☐☐☐
T2	Sex of child	Male..... 1 Female 2	Male .....1 Female.....2
T3	Height or length of child in centimeters **988 = NOT MEASURED**	☐☐☐.☐cm	☐☐☐.☐cm
T4	Height of mother or caregiverin centimeters	☐☐☐.☐cm	☐☐☐.☐cm
T5	Weight of child (in kilograms)	☐☐.☐☐kg	☐☐.☐☐kg
T6	Weight of the mother or caregiver(in kilograms)	☐☐.☐☐kg	☐☐.☐☐kg
T7	Date of height measured/weighed	Day..... ☐☐	Day ..... ☐☐

	QUESTION	CODE/RESPONSE	
		Child 4	Child 5
	(today)	Month..... ☐☐ Year.. ☐☐☐☐	Month..... ☐☐ Year .. ☐☐☐☐
T8	Result for child	Child measured..... 1 Child sick..... 2 Child not present ..... 3 Child refused..... 4 Mother refused ..... 5 Other (Specify)..... 6	Child measured .....1 Child sick.....2 Child not present.....3 Child refused .....4 Mother refused .....5 Other (Specify) 6

	RECORD TIME THE INTERVIEW ENDED.	HOUR ..... ☐☐ MINUTE..... ☐☐

Annex 4: Sample Weights

Calculation of sampling weights starts with construction of the design weight for units within each strata, where strata are denoted i=1,..,8. The design weights are the reciprocal of each unit's probability of selection into the sample:

$$\mathrm{w}_{i,design} = \frac{1}{p_i},$$

where p_i is the probability of selection.

A. Household-level sampling weights

The household sampling weights are constructed by first calculating the design weight and response rate (rr) for households in each stratum as follows.

$$\mathrm{w}_{i,hh,design} = \frac{Proportion\ of\ population\ of\ households\ in\ stratum\ i}{Proportion\ of\ planned\ sample\ households\ in\ stratrum\ i}$$

$$rr_{i,hh} = \frac{\#\ of\ households\ with\ completed\ questionnaires\ in\ stratum\ i}{\#\ of\ households\ sampled\ in\ stratum\ i}$$

The final weight is the design weight divided by the response rate:

$$hh\ sampling\ weight = \mathrm{w}_{i,hh} = \frac{w_{i,hh,design}}{rr_{i,hh}}.$$

B. Child sampling weights

Construction of the child-level sampling weights starts with the household-level design weight as an approximation of the child-level design weight.[4]

$$\mathrm{w}_{i,child,design} = \mathrm{w}_{i,hh,design}.$$

The response rate takes into account both the household response rate and the fact that all under-5 children listed in a household won't be available for anthropometric measurements.

$$rr_{i,child} = rr_{i,hh} * \frac{\#\ of\ completed\ child\ questionnaires\ in\ stratum\ i}{Total\ \#\ of\ hhs\ with\ completed\ hh\ \ questionnaires\ with\ children\ under\ five\ in\ stratum\ i}$$

The final weight is the design weight divided by the response rate:

$$child\ sampling\ weight = \mathrm{w}_{i,child} = \frac{w_{i,child,design}}{rr_{i,child}}$$

[4] The proportion of households with children under five in the population and sample is not known in advance.

Annex 5: IPTT matrix and SAPQ

Indicator	Target	IPTT Baseline (computed baseline)‡	Midterm	Endline	Percent Difference (Endline-Baseline)	Significance level	Target met? Percent difference (Endline-Target)
SO 1: "Availability of" and "access to" nutritious foods enhanced and protected for 370,000 poor & extreme poor (PEP) households							
Average household dietary diversity score	**6.0**	5.1 (4.8)	5.9	8.7	81.3	*	45.0
Average number of months of adequate household food provisioning	**8.0**	6.8 (5.9)	9.9	11.0	86.4	*	37.5
SO 2: Improved health, hygiene and nutrition status of 176,706 children under 2 years of age							
Percent of underweight children under five years of age (0-59 months)	**38.4**	40.8 (42.2)	34.4	35.9	-14.9	*	-8.1
Females	**34.6**	36.6 (37.2)	34.9	36.4	-2.2		5.2
Males	**42.2**	44.6 (46.7)	33.4	34.3	-26.6	*	-18.7
Percent of stunted children under five years of age (6-59 months)	**55.1**	61.7	52.7	50.4	-18.3	*	-11.4
Females	**51.2**	56.5	52.2	47.8	-15.3	*	-6.6
Males	**58.9**	66.1	53.2	49.7	-24.9	*	-15.6
Percent of children under age two who had diarrhea in the prior two weeks	**10.3**	14.7 (13.8)	11.6	8.1	-41.3		-21.4
Percent of children underweight under the age of 2 years (0-23 months)	**31.1**	35.3 (33.2)	32.1	29.5	-11.1		-5.1
Percent of children immunized against 8 diseases by 12 months of age	**82.0**	59.9 (58.6)	74.9	73.0	24.6	*	-11.0
Percent of pregnant and lactating women taking iron supplements in last 7 days	**45.0**	16.1 (15.2)	29.8	52.0	242.1	*	15.6
Prevalence of exclusive breast feeding of children under six months	**66.2**	62.2 (64.1)	66.4	62.2	-3.0		-6.0

Percent of mothers who feel it is important to wash hands at five critical times[£]	**35.0**	na (9.8)	10.9	29.8	204.1	*	-14.9
Number of people in target areas with improved access to sanitation facilities	**60.0**	26.3 (20.3)	32.4	52.8	160.1	*	-12.0
Percent of children 6–23 months of age who receive a minimum acceptable diet	**20.0**	10.6 (8.7)	17.5	47.9	450.6	*	139.5
Number of people in target areas with improved access to drinking water supply	**80.0**	61.1 (59.5)	76.3	77.9	30.9	*	-2.6
SO 3: PEP women and adolescent girls empowered in their families, communities and Union Parishad							
Percent of women control over economic resources	**25.0**	10.5 (5.7)	11.3	19.8	247.4	*	-20.8
SO 5: Targeted community members and government institutions are better prepared for, mitigate, and respond to disasters and adapt to climate change							
Percent of PEP households distress selling	**7**	12.5 (9.6)	9.5	9.8	2.1		40.0
Taka value of distress sale (PEP households)	**15000**	25,274 (19979)	21304	16231	-18.8		8.2

Note: Stars indicate difference is statistically significant at the 10% (*) level
Note: Under column "Target met?", red indicates that the target was not met and green indicates target was met (or that endline and target were not significantly different)
Note: There are no impact/outcome indicators in the SHOUHARDO II Indicator Performance Tracking Table (IPTT) under SO4.
£ The five critical times are: Before eating, before breastfeeding or feeding a child, before cooking or preparing food, after defecation/urination, and after cleaning a child that has defecated/changing a child's diaper.
‡ Values in parenthesis are the baseline numbers computed by TANGO during midterm and endline analysis. Some of these numbers differ from the baseline numbers in IPTT indicator table.

FFP Standardized Annual Performance Questionnaire (SAPQ) - FY 2011

AWARDEE FOOD AID PROGRAM INFORMATION	
Awardee Name(s)	CARE Bangladesh
Host Country *(or Countries, for Regional Programs)*	Bangladesh
Program location(s) in the host country	11 Distrcits located in the North and Mid Chars, Haor and Coast
Program Start Date *(mm/dd/yy)*	6/1/10
Program Expiration Date *(mm/dd/yy)*	5/31/15
Program Name	SHOUHARDO II (Strengthening Household Ability to Respond to Development Opportunities)
Award Number	AID-FFP-A-10-00010
AWARDEE CONTACT INFORMATION	
Contact Name (person filling out the SAPQ)	AKM Abdul Wadud
Contact Email	wadud@bd.care.org
Contact Address	CARE Bangladesh, 20-21 Kawran Bazar (Level 12), Dhaka 1215, Bangladesh
Contact Phone	+880-2-9112315

0	**Was your food aid program awarded in FY2011?**	Yes/No No

SECTION 1: Data from a Representative Population-based Survey

This section asks for impact data coming from a quantitative survey such as a baseline or final evaluation

1	**Did your food aid program conduct a quantitative, population-based, statistically representative survey such as a baseline or final evaluation in FY11 (or in FY10 and you did not report the results in last year's SAPQ)?** Answer "Yes, '11" if you conducted a survey in FY11. Answer "Yes, '10" if you conducted a survey in FY10 but you did not report on it in last year's FY10 SAPQ because the final data were not yet available. If you conducted a survey in FY10 and already reported the results in the FY10 SAPQ, choose "No".	Yes/No Yes, '11
2	**Which type of quantitative survey did your program conduct in FY11 (or in FY10 and you did not report the results in last year's SAPQ)?** Choose your answer from the drop down menu	Baseline Survey
3	**Are the final data from your program's survey available at this time?** Do not answer "Yes" if you have preliminary data only. If final data are not yet available, answer "No" and report on them in next year's SAPQ. Only final data should be entered into the SAPQ.	Yes/No Yes
4	**Does your program aim to improve household food access?** A program that aims to improve household food access generally promotes agricultural production, agricultural product processing and marketing, microcredit and other income- and employment-generation activities	Yes/No Yes

1A: Months of Adequate Food Provisioning (Impact Indicator)

5	**What is the estimated total number of households in your target geographic area?** How many households live in your target geographic area? (This is not the *sample* size, it's the *population* size)	FY 11 # households in target areas 584,003
6	**In the survey, did your program measure *average number of months of (in)adequate food provisioning,* following the standard FANTA methodology for this indicator?** See the "Definitions" tab for a description of the standard methodology for this indicator	Yes/No Yes

7 **What was the *average number of months of adequate food provisioning* ?**

Fill out the table below with the final data from your survey. If you measured INADEQUATE instead of ADEQUATE months, convert your data to ADEQUATE months (12 - number of inadequate months). Only provide data if you used the standard FANTA methodology.

If this is a baseline survey, please also provide your final evaluation target for this indicator.

If this survey is a final evaluation, please also provide the average number of months of adequate food provisioning data from the most recent population-based survey prior to FY11 (probably from your baseline survey). Indicate the year in which the data were collected.

Indicator	FY 11	Most recent FY prior to FY11 (enter n/a if FY11 was the baseline)		Final Evaluation Target	
	# months	From which FY?	# months	What FY is the final evaluation?	# of months
Average number of months of ADEQUATE food provisioning	7	FY	#	FY15	8

1B: Household Dietary Diversity (Impact Indicator)

8 **In the survey, did your food aid program measure *household dietary diversity,* following the standard FANTA methodology for this indicator?**

See the "Definitions" tab for a description of the standard methodology for this indicator.

Yes/No
Yes

9 **What was the *average household dietary diversity score* ?**

Fill out the table below with the data from your survey. Only provide data if you used the standard FANTA methodology.

If this is a baseline survey, please also provide your final evaluation target for this indicator.

If this survey is a final evaluation, please also provide the average dietary diversity score from the most recent population-based survey prior to FY11 (probably from your baseline survey). Indicate the year in which the data were collected.

Indicator	FY 11	Most recent FY prior to FY11 (enter n/a if FY11 was the baseline)		Final Evaluation Target	
	# of food groups	From which FY?	# of food groups	What FY is the final evaluation?	# of food groups
Average household dietary diversity score	5	FY	#	FY15	6

10 **Does your program aim to improve the nutritional status of children 0-24 months old?**

Yes/No
Yes

1C: Underweight (Impact Indicator)

11 **In the survey, did your food aid program measure the prevalence of underweight (WAZ <-2) in children 0 - 59 months of age?**

If you measured underweight for a different age group, or you used a different measure or cutoff, answer NO.

Yes/No
Yes

12 **What was the prevalence of underweight (WAZ <-2) in children 0 - 59 months of age?**

If this survey is a baseline survey, please also provide your final evaluation target for this indicator.

If this survey is a final evaluation, please also provide the underweight data from the most recent population-based survey prior to FY11 (probably from your baseline survey). Indicate the year in which the data were collected.

Indicator	FY 11	Most recent FY prior to FY11 (enter n/a if FY11 was the baseline)		Final Evaluation Target	
	% underweight	From which FY?	% underweight	What FY is the final evaluation?	% underweight
% of underweight (WAZ<-2) children 0-59 months of age	41%	FY	#	FY15	38%

13 **What is the estimated total number of children 0-59 months of age, living in your target geographic area?**

How many children 0-59 months live in your geographic area? (This is the *population* size, not the *sample* size)

FY 11
0-59 mo
319,683

1D: Stunting (Impact Indicator)

14	**In the survey, did your food aid program measure the prevalence of stunting (HAZ <-2) in children 6 - 59 mo of age?** If you measured stunting for a different age group, or you used a different measure or cutoff, answer NO.	Yes/No Yes

15 **What was the prevalence of stunting (HAZ <-2) in children 6 - 59 mo of age?**

If this survey is a baseline survey, please also provide your final evaluation target for this indicator.

If this survey is a final evaluation, please also provide the stunting data from the most recent population-based survey prior to FY11 (probably from your baseline survey). Indicate the year in which the data were collected.

	FY 11	Most recent FY prior to FY11 (enter n/a if FY11 was the baseline)		Final Evaluation Target	
Indicator	% stunted	From which FY?	% stunted	What FY is the final evaluation?	% stunted
% of stunted (HAZ<-2) children 6-59 months of age	59%	FY	#	FY15	55%

16	**What is the estimated total number of children 6-59 months of age, living in your target geographic area?** How many children 6-59 months of age live in your geographic area? (This is the *population* size, not the *sample* size.)	FY 11 # 6-59 mo 292,591

SECTION 2: Annual Monitoring Data

This section asks for data about direct beneficiaries, coming from your routine monitoring system

17	**Did your food aid program implement activities (deliver goods and services (assistance) to beneficiaries) in FY11?**	Yes/No Yes

2A: Anthropometry (Monitoring Indicators)

18	**Did your food aid program implement activities to maintain or improve the nutritional status of beneficiaries in FY11?**	Yes/No Yes

19 **What anthropometric indicators does your program use for regular monitoring of the nutritional status of beneficiaries?**

For each indicator, fill in the desired direction of change (increase or decrease) and the data for FY 11 and the previous year, FY 10. It is OK to leave prior year data blank if you do not have beneficiary data from the prior year.

Fill out the table below with the ANTHROPOMETRIC indicators used by your program for annual monitoring of the nutritional status of your program's beneficiaries. Please write the precise definition for each indicator, including the measure used and the age group (e.g. % of children 0 - 23 mo old with WAZ < -2). In other words, do not write simply "Malnutrition rate" or "Recovery rate" or "% graduating from feeding program" without explaining what anthropometric measure and cutoff is used.

Please provide only ANTHROPOMETRIC indicators which are a measure of the physical body. Acceptable anthropometric measures include prevalence of stunting (height for age Z - HfA), underweight (weight for age - WfA), wasting (weight for height WfH), weight gain, growth faltering (trend of weight gain), body mass index (BMI), middle-upper arm circumference (MUAC); average HfA Z score (HAZ), WfA Z score (WAZ), WfH Z score (WHZ); proportion of children/adults recuperating to defined cutoffs (e.g. WAZ 80% median). Measures such as breastfeeding, vaccination rates, or numbers of ration recipients are NOT anthropometric.

Only include data for indicators that you monitor <u>annually among direct beneficiaries.</u> These data will be based on regular monitoring of your program beneficiaries and not on a representative sample survey of a broader population. DO NOT PROVIDE DATA FROM A POPULATION BASED SURVEY SUCH AS A BASELINE OR FINAL EVALUATION

	Indicators	Desired direction (+ / -)	FY 11 actual %	FY 10 actual %
19.1	% of children 0 - 23 mo old with WAZ < -2	- decrease	%	%
19.2			%	%
19.3			%	%
19.4			%	%

2B: Behavior Change: Health, Nutrition, Hygiene (Monitoring Indicators)

20	**Did your program implement activities to improve the health, nutrition or hygiene behaviors of beneficiaries in FY11?**	Yes/No Yes

21 **What behavior change indicators does your program use for regular monitoring of beneficiaries?**

For each indicator, fill in data on the FY 11 indicator value (i.e. the result achieved) and the number of beneficiaries reached in FY11. Please provide future year targets for the indicator, as applicable.

Use the drop down menu to select the indicator on which you are reporting. Give the percentage (%) of **beneficiaries** adopting the improved health, nutrition or hygiene behaviors. You may take a census or a sample of your beneficiaries. DO NOT PROVIDE DATA FROM A POPULATION BASED SURVEY SUCH AS A BASELINE OR FINAL EVALUATION. Only the indicators on the drop down menu can be included.

See FFP Information Bulletin 07-02 (http://www.usaid.gov/our_work/humanitarian_assistance/ffp/fy08_ffpib_new_reporting.pdf) for further information on these indicators. For indicators with an *, the specific behaviors that comprise these indicators are to be defined by the awardee. See the "*Definitions*" tab for a definition of "beneficiaries".

	Indicators	FY 11		Future Targets			
				FY 12	FY 13	FY 14	FY 15
		actual %	# beneficiaries	target %	target %	target %	target %
21.1	% children 0-6 months of age exclusively breastfed	%	#	63%	64%	65%	66%
21.2	% of women taking iron supplements in last 7 days	%	#	18%	20%	23%	25%
21.3		%	#	%	%	%	%
21.4		%	#	%	%	%	%

2C: Agricultural Extension (Monitoring Indicator)

22	**Did your food aid program provide farmers with extension/outreach services in FY11?**	Yes/No Yes

23 **How many farmers (individuals, not households) received extension/outreach services in FY11?**

Please provide future year targets for number of farmer beneficiaries, as applicable.

FY 11	Future Targets			
	FY 12	FY 13	FY 14	FY 15
# farmers	# farmers	# farmers	# farmers	# farmers
4,580	60,425	75,839	75,839	75,839

24	**How many sustainable agricultural technologies did your program transfer in FY11?** See the "Definitions" tab for more information about "agricultural technologies"	# technologies 4

25 **What are the sustainable agricultural technologies your program made available for transfer in FY11?**

If you transferred more than 10 technologies, you can list the others in the comments column to the right.

25.1	Improved bed system
25.2	Improved pit/heap systems
25.3	Organic fertilizer
25.4	Compost preparation
25.5	
25.6	
25.7	
25.8	
25.9	
25.10	

26	**What is the minimum number of sustainable agricultural technologies your program would like an individual farmer to use/adopt as a result of your program's assistance?** See the "Definitions" tab for a definition of "minimum number." This number should be less than the response to question 22.	# technologies 3

27 **What percentage (%) of program beneficiaries (farmers) adopted the minimum number of technologies in FY11?**

Please provide the future year targets, as applicable.

DO NOT PROVIDE DATA FROM A POPULATION BASED SURVEY SUCH AS A BASELINE OR FINAL EVALUATION.

FY 11	Future Targets			
	FY 12	FY 13	FY 14	FY 15
% beneficiary farmers	% beneficiary farmers	% beneficiary farmers	% beneficiary farmers	% beneficiary farmers
%	44%	50%	55%	55%

2D: Disaster Early Warning Systems (Monitoring Indicator)

28 **Did your food aid program assist communities to develop disaster early warning and response systems in FY11?**

See the "Definitions" tab for a definition of "disaster early warning and response system".

Yes/No
No

29 **How many communities does your program plan to assist to develop disaster early warning and response systems over the life of the award?**

communities

30 **How many of your program's targeted communities had disaster early warning and response systems in place in FY11 as a result of your program's assistance?**

Please provide the future year targets for # of communities, as applicable. Future targets should be cumulative. For instance, if 25 communities have early warning systems in Year 1 and another 25 are added in Year 2, the Year 2 target would be 50, not 25.

DO NOT PROVIDE DATA FROM A POPULATION BASED SURVEY SUCH AS A BASELINE OR FINAL EVALUATION.

FY 11	Future Targets			
	FY 12	FY 13	FY 14	FY 15
# communities	# communities	# communities	# communities	# communities
(Automatic Calculation) % of communities with disaster early warning systems in place	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

2E: Infrastructure To Mitigate Shocks (Monitoring Indicator)

31 **Did your food aid program assist communities to improve or develop physical infrastructure to mitigate the impact of shocks in FY11?**

See the "Definitions" tab for a definition of "infrastructure"

Yes/No
Yes

32 **How many communities does your program plan to assist to improve or develop infrastructure to mitigate the impact of shocks over the life of the award?**

communities
225

33 **What kinds of physical infrastructure did your program improve or develop in FY11?**

If there are more than 5 kinds of infrastructure, you can list the others in the comments column to the right.

33.1	School Maintenance/Renovation/ Ground Raising
33.2	Flood Shelter cum School Development
33.3	Community Place Development
33.4	
33.5	

34 **How many of your program's targeted communities had improved physical infrastructure to mitigate the impact of shocks in FY11 as a result of your program's assistance?**

Please provide the future year targets for number of communities, as applicable. Future targets should be cumulative. For instance, if 25 communities have infrastructure in place in Year 1 and another 25 are added in Year 2, then the Year 2 target would be 50, not 25.

DO NOT PROVIDE DATA FROM A POPULATION BASED SURVEY SUCH AS A BASELINE OR FINAL EVALUATION.

FY 11	Future Targets			
	FY 12	FY 13	FY 14	FY 15
# communities	# communities	# communities	# communities	# communities
16	76	136	181	225
(Automatic Calculation) % of communities with disaster early warning systems in place	7%	34%	60%	80%	100%

2F: Safety Nets (Monitoring Indicator)

35 **Did your food aid program assist communities to strengthen safety nets to address the needs of their most vulnerable members in FY11?**

A community-based safety net supported under a Title II development program can be a broadly defined system for addressing the food security needs of a community's most vulnerable members during a shock. A community-based safety net is: managed and maintained by the community; internally resourced, at least in part; and can be year round or seasonal. Examples include community food banks or insurance schemes.

Yes/No
Yes

36 **How many communities does your program plan to assist to strengthen safety nets over the life of the activity?**

communities
905

37 **How many of your programs targeted communities that had safety nets in place in FY11 as a result of your program's assistance?**

Please provide the future year targets for number of communities, as applicable. Future targets should be cumulative. For instance, if 25 communities have safety nets in place in Year 1 and another 25 are added in Year 2, then the Year 2 target would be 50, not 25.

DO NOT PROVIDE DATA FROM A POPULATION BASED SURVEY SUCH AS A BASELINE OR FINAL EVALUATION.

	FY 11	Future Targets			
		FY 12	FY 13	FY 14	FY 15
	# communities	# communities	# communities	# communities	# communities
	0	452	814	905	905
(Automatic Calculation) % of communities with disaster early warning systems in place	0%	50%	90%	100%	100%

2G: Community Capacity (Monitoring Indicator)

38 **Did your food aid program assist communities to strengthen community capacity in FY11?**

Community capacity refers to a community's ability to govern itself; to organize, analyze, plan, manage, problem-solve, implement actions, and represent its interests and participate in broader fora. This goes beyond targeted efforts to strengthen communities in nutrition, agriculture, infrastructure, early warning, or other topics covered elsewhere in the SAPQ.

Yes/No
Yes

39 **How many communities does your program plan to assist to strengthen community capacity over the life of the award?**

communities
1,509

40 **What are the components of community capacity that your program strengthened in FY11?**

Select from the drop down menu. If there are more than 10 components, you can list the others in the comments column to the right.

40.1	Analysis and planning capacity
40.2	Implementation capacity
40.3	
40.4	
40.5	
40.6	
40.7	
40.8	
40.9	
40.10	

41 **How many of your program's targeted communities had strengthened community capacity in FY11 as a result of your program's assistance?**

Please provide the future year targets for number of communities, as applicable. Future targets should be cumulative. For instance, if 25 communities have strengthened capacity in Year 1 and another 25 are added in Year 2, then the Year 2 target would be 50, not 25

DO NOT PROVIDE DATA FROM A POPULATION BASED SURVEY SUCH AS A BASELINE OR FINAL EVALUATION.

	FY 11	Future Targets			
		FY 12	FY 13	FY 14	FY 15
	# communities	# communities	# communities	# communities	# communities
	1,509	1,509	1,509	1,509	1,509
(Automatic Calculation) % of communities with disaster early warning systems in place	100%	100%	100%	100%	100%

Congratulations! You have finished the SAPQ

SHOUHARDO II Final QPE

Annex 6: Quantitative Tables

SO1 Tables

SO1 PROGRAM INDICATORS

Table 1. SO1 key indicators, by region, well-being category and sex of household head

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
Average number of months of adequate household food provisioning								
All households	5.9	9.9	11.0	86.4	***	*7,085*	*6,916*	*7,148*
Region								
Coast	5.4	10.1	10.8	100.0	***	*1,885*	*1,852*	*1,907*
Haor	5.5	10.3	11.1	101.8	***	*1,672*	*1,701*	*1,689*
Mid Char	7.0	9.9	10.8	54.3	***	*1,798*	*1,745*	*1,652*
North Char	5.9	9.4	11.0	86.4	***	*1,730*	*1,618*	*1,900*
Well-being category								
Extreme poor	4.6	9.3	10.6	130.4	***	*1,195*	*1,237*	*1,333*
Poor	6.0	10.0	11.1	85.0	***	*4,566*	*4,435*	*4,511*
Middle	7.7	10.6	11.5	49.4	***	*638*	*599*	*577*
Middle rich	9.1	11.2	11.6	27.5	***	*428*	*409*	*452*
Rich	10.7	11.5	11.9	11.2	***	*252*	*235*	*274*
Sex of headship								
Female	4.2	9.0	10.6	152.4	***	*957*	*1,009*	*1,221*
Male	6.2	10.1	11.1	79.0	***	*6,128*	*5,907*	*5,927*
Average household dietary diversity score								
All households	4.8	5.9	8.7	81.3	***	*7,084*	*6,916*	*7,146*
Region								
Coast	4.7	5.7	8.1	72.9	***	*1,885*	*1,852*	*1,907*
Haor	4.8	6.8	9.0	88.9	***	*1,672*	*1,701*	*1,689*
Mid Char	4.8	5.0	8.2	71.9	***	*1,797*	*1,745*	*1,652*
North Char	4.9	5.4	8.6	76.8	***	*1,730*	*1,618*	*1,898*
Well-being category								
Extreme poor	4.5	5.6	8.3	85.0	***	*1,195*	*1,237*	*1,333*
Poor	4.8	6.0	8.7	82.6	***	*4,565*	*4,435*	*4,509*
Middle	5.4	6.4	9.1	69.2	***	*638*	*599*	*577*
Middle rich	6.0	6.6	9.3	55.1	***	*428*	*409*	*452*
Rich	6.9	7.4	10.0	44.6	***	*252*	*235*	*274*
Sex of headship								
Female	4.4	5.3	7.8	77.3	***	*957*	*1,009*	*1,221*
Male	4.9	6.0	8.8	81.1	***	*6,127*	*5,907*	*5,925*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

IR 1.1

Table 2. Indicators of agricultural production

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)	
Percent of households cultivating field crops in the previous year	33.4	27.9	44.1	32.0	*
Percent of households growing vegetables in the previous year	16.5	63.8	63.0	281.8	*
Percent of households raising livestock in the previous year	61.4	78.7	86.0	40.1	*
Percent of households raising fish in previous year	2.4	7.2	9.3	287.5	*
Total number of (the four) agricultural activities engaged in in previous year	1.1	1.8	2.0	81.8	*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 3. Percent of field crop producers adopting the minimum number of technologies (three)

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
All households	42.1	71.0	92.9	120.7	***	*2,411*	*2,051*	*2,976*
Region								
Coast	15.4	67.7	83.7	444.1	***	*296*	*334*	*517*
Haor	41.6	65.0	92.4	121.9	***	*724*	*610*	*856*
Mid Char	41.7	68.1	90.2	116.3	***	*714*	*689*	*727*
North Char	44.8	84.8	95.8	113.8	***	*677*	*418*	*876*
Well-being category								
Extreme poor	42.0	64.9	91.5	118.0	***	*182*	*181*	*373*
Poor	41.1	69.8	92.6	125.3	***	*1,286*	*1,212*	*1,804*
Middle	40.8	78.3	97.2	138.5	***	*411*	*273*	*314*
Middle rich	46.9	81.0	96.0	104.7	***	*325*	*231*	*278*
Rich	54.1	86.1	99.0	83.1	***	*206*	*153*	*207*
Sex of headship								
Female	50.4	60.9	81.6	61.8	***	*120*	*119*	*233*
Male	41.6	71.6	93.7	125.0	***	*2,291*	*1,932*	*2,743*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 4. Average number of field crops produced in previous year

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
All households	1.9	2.1	3.1	63.2	***	*2,411*	*2,051*	*2,976*
Region								
Coast	1.3	1.7	1.8	42.1		*296*	*334*	*517*
Haor	1.8	1.7	2.8	54.8	***	*724*	*610*	*856*
Mid Char	1.9	2.4	3.6	88.6	***	*714*	*689*	*727*
North Char	2.1	2.6	3.6	74.5	***	*677*	*418*	*876*
Well-being category								
Extreme poor	1.7	1.8	3.0	72.5	***	*182*	*181*	*373*
Poor	1.8	2.1	3.1	67.8	***	*1,286*	*1,212*	*1,804*
Middle	1.9	2.1	3.3	70.4	***	*411*	*273*	*314*
Middle rich	2.2	2.3	3.4	53.6	***	*325*	*231*	*278*
Rich	2.6	2.8	3.4	30.9	***	*206*	*153*	*207*
Sex of headship								
Female	1.5	1.8	2.6	77.3	***	*120*	*119*	*233*
Male	1.9	2.1	3.2	66.7	***	*2,291*	*1,932*	*2,743*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 5. Percent of vegetable producers adopting the minimum number of improved technologies (three)

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
All households	39.3	72.5	92.8	136.1	***	*1,178*	*4,286*	*4,210*
Region								
Coast	41.9	60.8	91.9	119.5	***	*235*	*948*	*938*
Haor	35.6	74.5	91.1	156.2	***	*304*	*1,212*	*1,225*
Mid Char	48.3	57.6	91.9	90.1	***	*249*	*1,054*	*802*
North Char	40.2	78.3	95.5	137.7	***	*390*	*1,072*	*1,245*
Well-being category								
Extreme poor	22.1	65.5	90.2	308.9	***	*101*	*641*	*688*
Poor	39.1	73.6	93.4	139.0	***	*630*	*2,731*	*2,705*
Middle	53.6	75.4	94.3	75.9	***	*154*	*411*	*373*
Middle rich	48.6	75.6	94.4	94.4	***	*161*	*308*	*275*
Rich	54.5	76.7	94.5	73.3	***	*131*	*195*	*188*
Sex of headship								
Female	17.3	66.4	91.2	427.2	***	*56*	*483*	*544*
Male	40.8	73.1	93.1	127.9	***	*1,122*	*3,803*	*3,666*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 6. Average number of vegetable crops produced in previous year

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
All households	3.6	5.0	8.4	133.3	***	*1,183*	*4,293*	*4,212*
Region								
Coast	3.9	4.9	7.8	99.0	***	*235*	*950*	*940*
Haor	3.7	5.0	8.4	125.3	***	*305*	*1,213*	*1,225*
Mid Char	3.1	4.5	6.5	107.4	***	*249*	*1,056*	*802*
North Char	3.6	5.3	9.2	153.3	***	*394*	*1,074*	*1,245*
Well-being category								
Extreme poor	2.7	4.6	8.4	207.1	***	*104*	*641*	*668*
Poor	3.5	5.0	8.4	143.1	***	*632*	*2,736*	*2,707*
Middle	4.4	4.9	9.0	105.0	***	*154*	*412*	*373*
Middle rich	4.7	5.5	8.5	79.0	***	*161*	*309*	*275*
Rich	5.6	6.7	9.2	65.1	***	*131*	*195*	*188*
Sex of headship								
Female	2.7	4.7	7.5	177.8	***	*57*	*483*	*544*
Male	3.7	5.0	8.5	130.8	***	*1,126*	*3,810*	*3,668*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 7. Percent of livestock producers adopting minimum number of improved technologies (three)

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
All households	2.6	12.3	44.7	1619.2		*4,468*	*5,150*	*6,117*
Region								
Coast	1.4	3.9	21.5	1435.7		*1,158*	*1,139*	*1,668*
Haor	2.4	10.0	42.1	1654.2		*946*	*1,380*	*1,489*
Mid Char	6.5	14.9	41.8	543.1		*1,098*	*1,276*	*1,265*
North Char	1.3	14.7	52.1	3907.7		*1,265*	*1,355*	*1,693*
Well-being category								
Extreme poor	1.7	7.7	39.4	2217.6	***	*606*	*826*	*1,080*
Poor	2.2	13.2	46.1	1995.5	***	*2,832*	*3,302*	*3,909*
Middle	4.8	11.7	46.2	862.5	***	*498*	*489*	*503*
Middle rich	9.8	15.0	48.8	398.0	***	*318*	*333*	*385*
Rich	10.3	24.7	49.1	376.7	***	*213*	*199*	*239*
Sex of headship								
Female	1.7	7.7	32.7	1823.5	***	*480*	*625*	*965*
Male	2.7	12.9	46.8	1633.3	***	*3,988*	*4,525*	*5,152*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 8. Percent of fish producers adopting minimum number of improved technologies (three)

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
All households	35.0	71.9	87.3	149.4	***	*173*	*390*	*575*
Region								
Coast	*n/a*	50.0	80.0			*11*	*2059*	*938*
Haor	28.7	67.5	81.7	184.7	***	*75*	*200*	*222*
Mid Char	*n/a*	63.2	95.7			*20*	*43*	*79*
North Char	43.5	81.7	94.4	117.0	***	*67*	*27*	*215*
Well-being category								
Extreme poor	*n/a*	67.8	85.0			*5*	*29*	*57*
Poor	23.5	72.3	87.3	271.5	***	*49*	*171*	*291*
Middle	23.5	65.5	90.2	283.8	***	*31*	*54*	*81*
Middle rich	50.0	71.8	94.4	88.8	***	*42*	*74*	*76*
Rich	61.5	81.8	81.8	33.0	***	*47*	*62*	*69*
Sex of headship								
Female	*n/a*	73.2	86.9			*24*	*102*	*171*
Male	45.6	69.5	88.0	93.0	***	*149*	*288*	*404*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 9. Percent of households accessing agri-inputs, finances and services

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
All households	93.1	96.5	98.4	5.7	***	*2,411*	*2,051*	*2,976*
Region								
Coast	82.7	91.9	94.6	14.4	**	*296*	*334*	*517*
Haor	89.7	97.3	98.5	9.8	***	*724*	*610*	*856*
Mid Char	94.1	95.6	96.9	3.0	**	*714*	*689*	*727*
North Char	98.4	96.2	99.3	0.9	**	*677*	*418*	*876*
Well-being category								
Extreme poor	94.6	98.0	96.9	2.4		*182*	*181*	*373*
Poor	92.4	95.9	98.6	6.7	***	*1,286*	*1,212*	*1,804*
Middle	95.7	98.3	100.0	4.5	**	*411*	*273*	*314*
Middle rich	94.5	98.0	99.2	5.0	**	*325*	*231*	*278*
Rich	94.9	98.6	99.0	4.3		*206*	*153*	*207*
Sex of headship								
Female	97.5	95.5	94.8	-2.8		*120*	*119*	*233*
Male	92.9	96.5	98.6	6.1	***	*2,291*	*1,932*	*2,743*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

IR 1.2

Table 10. Indicators of income and wealth, by region, well-being category, and sex of household head

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
Mean household monthly income per capita (2014 Taka)								
All households	647.1	951.0	980.5	51.5	***	*7,084*	*6,888*	*7046*
Region								
Coast	578.3	1015.8	1082.9	87.3	***	*1,885*	*1,841*	*1,872*
Haor	667.7	973.0	948.7	42.1	***	*1,672*	*1,697*	*1,673*
Mid Char	652.6	948.5	991.0	51.9	***	*1,797*	*1,738*	*1,625*
North Char	630.5	917.9	998.2	58.3	***	*1,730*	*1,612*	*1,876*
Well-being category								
Extreme poor	557.5	848.5	901.4	61.7	***	*1,195*	*1,237*	*1,324*
Poor	645.0	946.6	967.4	50.0	***	*4,566*	*4,418*	*4,465*
Middle	742.4	1096.3	1,123.0	51.3	***	*638*	*594*	*563*
Middle rich	874.8	1231.6	1,287.3	47.2	***	*428*	*405*	*436*
Rich	1229.4	1674.3	1,763.5	43.4	**	*251*	*233*	*257*
Sex of headship								
Female	612.3	863.4	993.3	62.2	***	*957*	*1,009*	*1,221*
Male	652.3	965.2	903.4	38.5	***	*6,121*	*5,907*	*5,927*
Mean number of months of hh employment (per capita)								
All households	2.70	3.08	3.35	24.0	***	*7,085*	*6,916*	7148
Region								
Coast	2.12	2.49	2.59	22.1	**	*1,885*	*1,852*	*1,907*
Haor	2.70	3.11	2.93	8.5	***	*1,672*	*1,701*	*1,689*
Mid Char	2.52	2.71	3.48	38.0	***	*1,798*	*1,745*	*1,652*
North Char	2.87	3.30	3.88	35.2	***	*1,730*	*1,618*	*1,900*
Well-being category								
Extreme poor	3.20	3.79	3.99	24.8	***	*1,195*	*1,237*	*1,333*
Poor	2.66	2.97	3.26	22.4	***	*4,566*	*4,435*	*4,511*
Middle	2.09	2.53	2.53	20.8	*	*638*	*599*	*577*
Middle rich	1.69	1.93	2.17	28.1	*	*428*	*409*	*452*
Rich	1.58	2.02	2.01	26.9		*252*	*235*	*274*
Sex of headship								
Female	3.72	4.29	4.50	21.1	***	*957*	*1,009*	*1,221*
Male	2.55	2.88	3.14	23.2	***	*6,121*	*5,907*	*5,927*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 11. Ownership of various assets

Type of practice	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)	
Domestic Assets	25.1	32.3	39.1	55.8	*
Productive Assets	15.9	21.5	27.9	75.5	*
Animal Assets	17.5	21.9	30.0	71.4	*
Tree Assets	137.5	224.8	443.1	222.3	*
Total Assets	196.0	300.8	540.1	175.6	*

Note: Stars indicate endline-baseline difference is statistically significant at the 5% level.

Table 12. Domestic Asset Index, by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	End line	Percent difference (Endline - Baseline)	p-value for difference		Number of observations		
							Baseline	Midterm	Endline
All households	25.1	32.6	39.0	55.5	0.000	***	*7,085*	*6,916*	*7,148*
All PEP households	22.5	30.1	36.3	61.1	0.000	***	*5,765*	*5,672*	*5,844*
Region									
Coast	27.0	31.2	40.7	50.8	0.000	***	*1,885*	*1,852*	*1,907*
Haor	23.1	30.8	37.4	61.8	0.000	***	*1,672*	*1,701*	*1,689*
Mid Char	29.6	36.6	43.8	47.9	0.000	***	*1,798*	*1,745*	*1,652*
North Char	24.9	33.0	38.5	54.6	0.000	***	*1,730*	*1,618*	*1,900*
Well-being category									
Extreme poor	16.5	22.5	22.4	35.7	0.000	***	*1,195*	*1,237*	*1,333*
Poor	24.1	32.1	32.1	33.5	0.000	***	*4,566*	*4,435*	*4,511*
Middle	42.3	46.9	46.9	10.9	0.000	***	*638*	*599*	*577*
Middle rich	53.3	65.1	65.1	22.2	0.000	***	*428*	*409*	*452*
Rich	91.1	98.6	98.6	8.3	0.076	*	*252*	*235*	*274*
Program approach									
MCHN/PEP (PEP only)	22.7	30.5	36.0	58.4	0.000	***	*2,888*	*2,766*	*2,945*
PM2A	33.0	39.6	49.5	50.0	0.000	***	*4,197*	*4,150*	*4,203*
Sex of headship									
Female	15.8	21.5	25.7	62.5	0.000	***	*957*	*1,009*	*1,221*
Male	26.5	34.4	41.5	56.5	0.000	***	*6,128*	*5,907*	*5,927*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5% (**) or 1% (***) levels.

Table 13. Mean household remittance per year (2010 Taka)

Indicator	Baseline	Midterm	End line	Percent difference (Endline - Baseline)	p-value for difference		Number of observations		
							Baseline	Midterm	End line
All households	1,666	2,454	6,185	271.3	0.000	***	*7,085*	*6,911*	7,148
All PEP households	1,285	2,230	4,868	278.8	0.000	***	5,765	5,672	5,844
Region									
Coast	4,686	5,768	27,621	489.5	0.000	***	*1,885*	*1,849*	1,907
Haor	1,670	2,571	5,417	224.4	0.002	***	*1,672*	*1,701*	1,689
Mid Char	2,275	3,184	6,029	165.0	0.004	***	*1,798*	*1,745*	1,652
North Char	963	1,512	4,369	353.7	0.001	***	*1,730*	*1,616*	1,900
Well-being category									
Extreme poor	939	1,811	1,811	92.8	0.001	***	*1,195*	*1,237*	1,333
Poor	1,371	2,095	2,342	70.8	0.000	***	*4,566*	*4,432*	4,511
Middle	3,311	4,876	6,816	105.9	0.011	**	*638*	*598*	577
Middle rich	8,837	8,202	13,324	50.8	0.083	*	*428*	*408*	452
Rich	8,427	12,589	20,323	141.2	0.024	**	*252*	*235*	274
Program approach									
MCHN/PEP (PEP only)	1,266	2,055	4,334	242.3	0.002	***	*2,888*	*2,764*	2,945
PM2A	2,977	3,767	12,457	318.4	0.000	***	*4,197*	*4,147*	4,203
Sex of headship									
Female	3,272	5,463	11,417	248.9	0.000	***	*957*	*1,008*	1,221
Male	1,423	1,969	5,224	267.2	0.000	***	*6,128*	*5,903*	5,927

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5% (**) or 1% (***) levels.

Table 14. Mean household monthly remittances per capita (2010 Taka)

Indicator	Baseline	Midterm	End line	Percent difference (Endline - Baseline)	p-value for difference		Number of observations		
							Baseline	Midterm	End line
All households	34.82	59.91	80.41	130.1	0.000	***	7,085	6,916	7,148
All PEP households	29.21	47.15	71.89	146.2	0.000	***	5,765	5,672	5,844
Region									
Coast	81.47	107.55	282.28	245.9	0.000	***	1,885	1,852	1,907
Haor	33.67	57.37	72.45	114.1	0.002	***	1,672	1,701	1,689
Mid Char	51.88	77.43	106.59	106.7	0.010	**	1,798	1,745	1,652
North Char	21.52	47.83	51.71	140.4	0.008	***	1,730	1,618	1,900
Well-being category									
Extreme poor	29.14	58.04	74.87	155.2	0.000	***	1,195	1,237	1,333
Poor	29.09	51.1	70.87	142.8	0.000	***	4,566	4,435	4,511
Middle	54.77	101.96	154.80	182.6	0.023	**	638	599	577
Middle rich	143.13	164.87	211.69	47.9	0.126		428	409	452
Rich	141.81	232.26	199.85	40.9	0.269		252	235	274
Program approach									
MCHN/PEP (PEP only)	28.74	52.94	65.91	128.3	0.000	***	2,888	2,766	2,945
PM2A	54.75	82.83	129.79	137.1	0.000	***	4,197	4,150	4,203
Sex of headship									
Female	89.53	184.3	189.28	111.0	0.000	***	957	1,009	1,221
Male	26.54	39.79	60.53	127.2	0.000	***	6,128	5,907	5,927

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5% (**) or 1% (***) levels.

Table 15. Indicators of economic vulnerability

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)	
Migration	32.2	34.4	33.8	5.0	*
Selling labor in advance	9.8	7.9	5.2	-46.9	*
Taking out interest bearing loan	21.3	19.6	16.7	-21.6	*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5% (**) or 1% (***) levels.

Table 16. Indicators of access to markets

Indicator	Baseline	Midterm	Endline	Percent difference (Endline - Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of households that purchase food for whom the nearest food vendor is close by (<30 minute walk away)								
All households	57.8	64.1	64.3	11.3	***	*6,802*	*6,643*	*6,938*
Region								
Coast	57.5	43.8	47.0	-18.2	***	*1,842*	*1,800*	*1,853*
Haor	49.6	60.7	60.0	21.0	***	*1580*	*1642*	*1,633*
Mid Char	65.0	59.5	72.0	10.7	***	*1728*	*1673*	*1,595*
North Char	63.3	73.3	67.9	7.3	***	*1652*	*1528*	*1,857*
Well-being category								
Extreme poor	58.8	60.3	58.6	-0.3		*1130*	*1185*	*1,284*
Poor	57.8	65.3	66.1	14.3	***	*4434*	*4290*	*4,396*
Middle	54.3	62.6	65.4	20.5	***	*623*	*568*	*562*
Middle rich	58.3	58.8	66.9	14.8		*393*	*387*	*433*
Rich	50.5	68.8	63.9	26.5	*	*216*	*212*	*262*
Sex of headship								
Female	60.4	61.7	67.3	11.4	***	*910*	*970*	*1,168*
Male	57.4	64.5	63.8	11.2	***	*5892*	*5673*	*5,770*
Percent of households that sell food for whom the nearest point of sale is close by (<30 minute walk away)								
All households	39.5	48.9	51.5	30.2	***	*1206*	*1572*	*2,781*
Region								
Coast	43.8	20.4	38.3	-12.5		*179*	*298*	*526*
Haor	45.5	48.4	50.7	11.4	*	*328*	*466*	*806*
Mid Char	34.2	39.5	53.6	56.8	***	*372*	*418*	*673*
North Char	34.4	57.8	52.8	53.4	**	*327*	*390*	*776*
Well-being category								
Extreme poor	45.5	39.7	43.2	-5.0		*87*	*132*	*377*
Poor	37.2	48.7	53.1	42.7	***	*558*	*880*	*1,654*
Middle	45.1	53.2	55.9	24.1	*	*206*	*211*	*295*
Middle rich	42.6	49.4	54.5	28.1	*	*207*	*193*	*268*
Rich	42.9	64.4	56.5	31.8		*147*	*155*	*196*
Sex of headship								
Female	35.2	34.0	55.9	58.9	***	*53*	*98*	*241*
Male	39.8	50.0	51.2	28.7	***	*1153*	*1474*	*2,540*

Percent of households that purchase agricultural inputs for whom the nearest vendor is close by (<30 minute walk away)								
All households	45.3	58.0	53.4	17.9	***	*2,297*	*3,022*	*3,996*
Region								
Coast	35.4	29.5	35.0	-1.2		*271*	*577*	*783*
Haor	44.0	54.3	50.2	14.2	***	*674*	*904*	*1,140*
Mid Char	42.1	49.9	61.1	45.3	***	*703*	*797*	*928*
North Char	49.8	70.3	55.9	12.3	***	*649*	*744*	*1,145*
Well-being category								
Extreme poor	51.1	55.2	41.8	-18.2	***	*169*	*302*	*573*
Poor	45.0	59.1	56.1	24.7	***	*1,226*	*1,878*	*2,461*
Middle	41.8	54.3	55.3	32.3	***	*392*	*367*	*407*
Middle rich	47.1	46.5	55.2	17.3		*306*	*287*	*327*
Rich	40.6	63.6	56.1	38.1	*	*203*	*187*	*227*
Sex of headship								
Female	38.1	51.6	59.6	56.3	***	*106*	*203*	*350*
Male	45.7	58.5	52.9	15.8	***	*2,191*	*2,819*	*3,646*

Note: Stars indicate endline-baseline difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

BY PEP/NON-PEP

Table 17. SO1 key indicators (PEP versus non-PEP)

Indicator	Non-PEP				PEP				Difference (PEP vs. non-PEP)	
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)			
Food security indicators										
Average number of months of adequate food provisioning	8.8	11.6	24.1	*	5.7	11.0	48.2	*	24.0	
Average household dietary diversity score	5.9	9.4	37.2	*	4.7	8.6	45.3	*	8.1	
Percent of households with hunger										
Agricultural production indicators										
Adoption of minimum number of technologies										
Field crops	45.9	97.3	112.0		41.2	92.3	124.0		12.0	
Vegetable production	51.9	94.4	81.9		36.6	92.7	153.3		71.4	*
Livestock rearing	7.5	47.7	536.0		2.1	44.5	2019.0		1483.0	*

Fish rearing	50.7	87.8	73.2		20.4	87.5	328.9		255.7	
Percent of households accessing agri-inputs, finances and services	95.1	99.2	4.3		92.7	98.3	6.0		1.7	*
Indicators of income and market access										
Mean household monthly income per capita	884.26	1493.7	40.8	*	626.5	1250.4	49.9	*	9.1	
Mean number of months of household employment (per capita)	1.86	2.29	18.8	*	2.8	3.4	19.5	*	0.7	
Percent of purchasing and selling households with nearest vender close by										

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.

BY MALE/FEMALE HHH

Table 18. SO1 key indicators, by sex of household head

Indicator	Male headed households				Female headed households				Difference (Female vs. male)	
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)			
Food security indicators										
Average number of months of adequate food provisioning	6.2	11.1	79.0	*	4.2	10.6	152.4	*	73.3	
Average household dietary diversity score	4.9	8.8	79.6	*	4.4	7.8	77.3	*	-2.3	
Percent of households with hunger										*
Agricultural production indicators										
Adoption of minimum number of technologies										
Field crops	41.6	93.7	125.2		50.4	81.6	61.9		-63.3	
Vegetable production	40.8	93.1	128.2		17.3	91.2	427.2		299.0	*
Livestock rearing	2.7	49.8	1744.4		1.7	32.7	1823.5		79.1	*
Fish rearing	45.6	88.0	93.0		20.7	86.9	319.8		226.8	
Percent of households accessing agri-inputs, financies and services	92.9	98.6	6.1		97.5	94.8	-2.8		-8.9	*

Indicators of income and market access								
Mean household monthly income per capita	652.3	1290.8	49.5		612.3	1152.9	46.9	*	-2.6
Mean number of months of household employment (per capita)	2.55	3.14	18.79		3.72	4.50	17.33	*	-1.5
Percent of purchasing and selling households with nearest vender close by									

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.

SO2 Tables

SO2 PROGRAM INDICATORS

Table 19. Overview: Moderate and severe malnutrition among children under five and children under two

Indicator	**Baseline**	**Midterm**	**Endline** – Index child only	**Endline** – All children	**Percent difference** (Endline index child only - Baseline)	
Under fives						
Stunting (6-59m)	61.7	52.7	48.8	50.4	-21.0	***
Wasting (6-59m)	15.6	9.0	12.2	11.2	-21.5	
Underweight (0-59m)	42.2	34.2	35.3	35.9	-16.3	***
Severe stunting (6-59m)	30.8	22.6	18.4	19.6	-40.4	***
Severe wasting (6-59m)	6.3	1.6	3.1	2.7	-51.6	***
Severe underweight (0-59m)	13.5	9.8	10.1	10.3	-25.4	**
Under twos						
Stunting (6-23m)	55.8	52.0	42.9	43.7	-23.1	***
Wasting (6-23m)	18.2	11.7	14.2	13.0	-21.9	
Underweight (0-23m)	33.2	32.1	29.5	29.5	-11.1	
Severe stunting (6-23m)	31.4	23.2	15.1	16.7	-51.9	***
Severe wasting (6-23m)	8.1	2.5	5.0	4.4	-38.9	
Severe underweight (0-23m)	10.9	9.3	10.8	10.4	-1.1	

Note: Stars indicate endline-baseline difference is statistically significant at the 5% level.

Table 20. Child malnutrition indicators (moderate), stunting by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline – Index child only	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of children under five stunted (6-59m)								
All households	61.7	52.7	48.8	-21.0	***	2,384	2,167	2,143
Sex of child								
Female	56.5	52.2	47.8	-15.3	**	1,145	1,027	1,016
Male	66.1	53.2	49.7	-24.9	***	1,239	1,140	1,127
Region								
Coast	58.1	54.0	44.5	-23.4	***	753	718	707
Haor	65.3	52.8	57.9	-11.3	*	548	583	517
Mid Char	53.1	47.8	44.6	-16.0	**	566	454	468
North Char	62.8	54.8	39.6	-37.0	***	517	412	451
Well-being category								
Extreme poor	64.2	62.2	50.9	-20.7	**	272	271	296
Poor	62.0	51.5	49.8	-19.8	***	1,704	1,545	1,493
Middle	52.9	50.6	38.1	-28.0	**	197	180	168
Middle rich	52.1	52.4	25.3	-51.5	***	133	106	119
Rich	59.5	40.6	29.2	-51.0	***	77	64	67
Program approach								
MCHN/PEP	62.2	52.7	49.6	-20.2	***	961	871	918
PM2A	59.9	52.6	45.2	-24.6	***	1423	1296	1225
Sex of headship								
Female	72.9	54.4	38.7	-46.9	***	170	165	256
Male	61.0	52.6	49.5	-18.8		2,214	2,002	1,887
Percent of children under two stunted (6-23m)								
All households	55.8	52.0	42.9	-23.1	***	727	782	845
Sex of child								
Female	50.4	46.1	41.2	-18.2		359	376	408
Male	61.0	58.5	45.0	-26.2	***	368	406	437
Region								
Coast	44.0	47.8	33.2	-24.7	**	243	277	314
Haor	59.3	48.8	50.1	-15.5		180	208	208
Mid Char	50.1	45.2	32.9	-34.4	**	142	162	175
North Char	55.9	61.7	40.6	-27.3	**	162	135	148
Well-being category								
Extreme poor	63.0	54.8	42.5	-32.6	**	72	83	115
Poor	56.3	51.3	44.9	-20.2	**	518	565	594
Middle	41.1	58.0	24.9	-39.5	**	65	77	63
Middle rich	33.9	52.8	17.1	-49.5		48	39	46
Rich	‡	‡	‡		‡	24	18	27
Program approach								
MCHN/PEP	57.9	52.1	44.1	-23.8	***	285	296	357
PM2A	49.4	51.6	39.0	-21.0	**	442	486	488
Sex of headship								
Female	68.8	35.6	41.2	-40.1	*	32	54	100
Male	55.4	52.6	43.1	-22.3	***	695	728	745

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 21. Child malnutrition indicators (severe), stunting by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline – Index child only	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of children under five severely stunted (6-59m)								
All households	30.8	22.6	18.4	-40.4	***	*2,384*	*2,167*	*2,143*
Sex of child								
Female	27.1	22.4	18.3	-32.6	***	*1,145*	*1,027*	*1,016*
Male	34.0	22.8	18.5	-45.6	***	*1,239*	*1,140*	*1,127*
Region								
Coast	30.0	23.4	17.3	-42.2	***	*753*	*718*	*707*
Haor	36.7	25.6	22.5	-38.7	***	*548*	*583*	*517*
Mid Char	22.1	20.3	15.1	-31.6	*	*566*	*454*	*468*
North Char	28.9	19.2	14.8	-48.8	***	*517*	*412*	*451*
Well-being category								
Extreme poor	37.1	27.5	20.6	-44.5	***	*272*	*271*	*296*
Poor	29.8	22.2	18.5	-37.8	***	*1,704*	*1,545*	*1,493*
Middle	28.4	22.2	12.6	-55.5	***	*197*	*180*	*168*
Middle rich	31.1	14.3	10.2	-67.2	***	*133*	*106*	*119*
Rich	33.3	16.4	5.6	-83.1	***	*77*	*64*	*67*
Program approach								
MCHN/PEP	32.5	21.8	19.2	-36.7	***	*961*	*871*	*918*
PM2A	30.3	22.9	15.7	-51.9	***	*1423*	*1296*	*1225*
Sex of headship								
Female	35.7	26.7	14.4	-59.6	***	*170*	*165*	*256*
Male	30.5	22.4	18.7	-38.8	***	*2,214*	*2,002*	*1,887*
Percent of children under two severely stunted (6-23m)								
All households	31.4	23.2	15.1	-51.9	***	*727*	*782*	*746*
Sex of child								
Female	25.1	20.0	14.6	-42.0	**	*359*	*376*	*388*
Male	37.5	26.8	15.8	-57.9	***	*368*	*406*	*358*
Region								
Coast	24.2	22.1	13.2	-45.4	***	*243*	*277*	*261*
Haor	35.6	23.8	15.1	-57.7	***	*180*	*208*	*181*
Mid Char	22.1	17.8	9.1	-59.0	**	*142*	*162*	*162*
North Char	31.4	25.6	18.8	-40.0	*	*162*	*135*	*142*
Well-being category								
Extreme poor	43.6	32.1	11.7	-73.1	***	*72*	*83*	*103*
Poor	30.3	22.3	16.8	-44.6	***	*518*	*565*	*518*
Middle	22.0	22.7	6.0	-72.6	**	*65*	*77*	*57*
Middle rich	17.4	17.4	10.2	-41.6		*48*	*39*	*45*
Rich	‡	‡	‡		‡	*24*	*18*	*23*
Program approach								
MCHN/PEP	32.6	23.3	15.9	-51.1	***	*285*	*296*	*305*
PM2A	27.8	23.0	12.5	-55.1	***	*442*	*486*	*441*
Sex of headship								
Female	39.5	11.3	7.2	-81.9	*	*32*	*54*	*88*

Male	31.2	23.6	15.8	-49.5	***	*695*	*728*	*568*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
‡ Insufficient number of observations.

Table 22. Child malnutrition indicators (moderate), wasting by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline – Index child only	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of children under five wasted (6-59m)								
All households	15.6	9.0	12.2	-21.5		2,384	2,167	*2,143*
Sex of child								
Female	15.4	9.2	11.1	-28.1	*	1,145	1,027	*1,016*
Male	15.7	8.8	13.4	-14.8		1,239	1,140	*1,127*
Region								
Coast	15.5	13.9	8.6	-44.3	***	753	718	*707*
Haor	20.3	9.2	10.5	-48.2	**	548	583	*517*
Mid Char	11.1	9.8	12.0	7.9		566	454	*468*
North Char	12.6	7.2	15.3	21.7		517	412	*451*
Well-being category								
Extreme poor	20.0	9.9	13.4	-32.9		272	271	*296*
Poor	15.1	8.8	12.3	-18.7		1,704	1,545	*1,493*
Middle	13.4	11.1	7.3	-45.3	*	197	180	*168*
Middle rich	10.3	9.7	8.9	-14.1		133	106	*119*
Rich	13.3	4.0	11.1	-16.8		77	64	*67*
Program approach								
MCHN/PEP	15.5	8.1	12.8	-17.7		961	871	*918*
PM2A	15.9	11.7	10.4	-34.6	***	1423	1296	*1225*
Sex of headship								
Female	14.2	13.5	15.2	6.9		170	165	*256*
Male	15.6	8.7	12.0	-23.0	*	2,214	2,002	*1,887*
Percent of children under two wasted (6-23m)								
All households	18.2	11.7	14.2	-21.9		727	782	*746*
Sex of child								
Female	22.8	10.9	13.1	-42.8	**	359	376	*388*
Male	13.8	12.5	15.7	13.6		368	406	*358*
Region								
Coast	18.0	15.7	11.5	-36.1	*	243	277	*261*
Haor	22.0	13.4	13.9	-36.8		180	208	*181*
Mid Char	12.8	10.7	12.2	-4.8		142	162	*162*
North Char	15.6	8.4	16.3	4.6		162	135	*142*
Well-being category								
Extreme poor	13.0	10.6	14.8	14.1		72	83	*103*
Poor	19.7	12.1	15.0	-24.1		518	565	*518*
Middle	13.6	8.3	4.1	-70.1	**	65	77	*57*
Middle rich	16.4	9.2	7.7	-52.9		48	39	*45*
Rich	‡	‡	‡			24	18	*23*
Program approach								
MCHN/PEP	18.6	10.6	15.6	-16.3		285	296	*305*

PM2A	17.1	14.6	10.0	-41.6	***	442	486	441
Sex of headship								
Female	5.1	5.9	16.7	227.8		32	54	88
Male	18.6	11.9	14.0	-24.7		695	728	658

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
‡ Insufficient number of observations.

Table 23. Child malnutrition indicators (severe), wasting by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline – Index child only	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of children under five severely wasted (6-59m)								
All households	6.3	1.6	3.1	-51.6	***	2,384	2,167	2,143
Sex of child								
Female	7.7	1.7	3.1	-60.1	***	1,145	1,027	1,016
Male	5.1	1.5	3.0	-40.8	*	1,239	1,140	1,127
Region								
Coast	5.2	5.4	1.7	-66.7	***	753	718	707
Haor	9.5	1.1	2.4	-75.1	***	548	583	517
Mid Char	4.2	1.4	3.6	-14.3		566	454	468
North Char	3.9	1.6	3.9	0.0		517	412	451
Well-being category								
Extreme poor	7.7	2.3	2.5	-67.8	**	272	271	296
Poor	6.4	1.3	3.3	-48.1	***	1,704	1,545	1,493
Middle	2.9	4.0	n/a			197	180	168
Middle rich	3.2	2.0	3.1	-2.2		133	106	119
Rich	2.7	0.4	3.4	24.1		77	64	67
Program approach								
MCHN/PEP	6.4	1.1	3.1	-51.4	***	961	871	918
PM2A	6.0	3.1	2.8	-53.2	***	1423	1296	1225
Sex of headship								
Female	6.0	5.1	3.9	-35.2		170	165	256
Male	6.3	1.4	3.0	-52.7	***	2,214	2,002	1,887
Percent of children under two severely wasted (6-23m)								
All households	8.1	2.5	5.0	-38.9		727	782	746
Sex of child								
Female	11.2	2.5	6.4	-43.3		359	376	388
Male	5.2	2.5	3.2	-38.5		368	406	358
Region								
Coast	5.4	4.8	2.5	-54.3		243	277	261
Haor	12.0	2.4	5.2	-57.1	*	180	208	181
Mid Char	4.6	2.0	1.8	-60.7		142	162	162
North Char	5.0	2.3	6.9	38.0		162	135	142
Well-being category								
Extreme poor	3.8	n/a	4.8	25.3		72	83	103
Poor	9.4	2.8	5.4	-42.2		518	565	518
Middle	4.5	3.5	n/a			65	77	57
Middle rich	5.4	1.8	1.8	-67.4		48	39	45
Rich	‡	‡	‡		‡	24	18	23

Program approach								
MCHN/PEP	8.8	1.9	5.6			*285*	*296*	*305*
PM2A	6.0	4.2	2.9	-52.2	*	*442*	*486*	*441*
Sex of headship								
Female	3.7	4.6	1.6	-57.8		*32*	*54*	*88*
Male	8.3	2.4	5.2	-37.0		*695*	*728*	*658*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

‡ Insufficient number of observations.

Table 24. Child malnutrition indicators (moderate), underweight by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline – Index child only	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of children under five underweight (0-59m)								
All households	42.2	34.2	35.3	-16.3	***	2,594	2,380	*2,326*
Sex of child								
Female	37.2	34.9	36.4	-2.2		1,265	1,132	*1,093*
Male	46.7	33.4	34.3	-26.6	***	1,329	1,248	*1,233*
Region								
Coast	40.2	36.9	31.2	-22.4	***	827	789	*764*
Haor	46.0	36.3	38.3	-16.8	**	594	633	*574*
Mid Char	35.3	32.4	35.9	1.6		616	504	*497*
North Char	42.0	31.2	31.7	-24.5	**	557	454	*491*
Well-being category								
Extreme poor	40.8	39.1	38.5	-5.5		310	301	*324*
Poor	43.0	33.6	35.7	-17.0	***	1,851	1,695	*1,613*
Middle	41.6	34.4	23.5	-43.5	***	210	197	*188*
Middle rich	32.9	31.2	21.8	-33.8	*	141	118	*127*
Rich	33.6	24.8	24.0	-28.6		81	68	*74*
Program approach								
MCHN/PEP	42.6	34.4	36.3	-14.7	**	1053	963	*989*
PM2A	41.0	33.3	31.9	-22.2	***	1541	1417	*1337*
Sex of headship								
Female	46.5	30.1	31.1	-33.2	*	187	182	*276*
Male	42.0	34.4	35.7	-15.1	***	2,407	2,198	*2,050*
Percent of children under two underweight (0-23m)								
All households	33.2	32.1	29.5	-11.1		937	995	*929*
Sex of child								
Female	29.6	29.4	29.5	-0.2		479	481	*465*
Male	36.8	34.9	29.5	-19.8		458	514	*464*
Region								
Coast	28.9	31.7	24.6	-15.0		317	348	*318*
Haor	36.0	34.4	31.4	-12.9		226	258	*238*
Mid Char	22.2	28.5	26.0	17.0		192	212	*191*
North Char	35.6	30.5	29.6	-16.9		202	177	*182*
Well-being category								
Extreme poor	33.4	32.4	29.3	-12.3		110	113	*131*
Poor	34.0	32.4	31.4	-7.6		665	715	*638*
Middle	30.7	30.4	8.7	-71.7	***	78	94	*77*
Middle rich	19.4	21.4	16.4	-15.6		56	51	*53*

Rich	‡	‡	13.8		‡	28	22	30
Program approach								
MCHN/PEP	34.1	32.9	31.0	-9.0		377	388	376
PM2A	29.9	29.6	24.8	-16.9		560	607	553
Sex of headship								
Female	14.8	9.2	32.6	120.4		49	71	108
Male	33.8	33.2	29.2	-13.6		888	924	821

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

‡ Insufficient number of observations.

Table 25. Child malnutrition indicators (severe), underweight by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline – Index child only	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of children under five severely underweight (0-59m)								
All households	13.5	9.8	10.1	-25.4	**	2,594	2,380	2,326
Sex of child								
Female	12.9	11.2	11.2	-13.1		1265	1132	1093
Male	14.1	8.5	9.0	-36.3	**	1,329	1,248	1,233
Region								
Coast	14.2	11.6	7.8	-45.0	***	827	789	764
Haor	17.8	12.1	11.5	-35.2	**	594	633	574
Mid Char	8.8	5.4	7.1	-19.4		616	504	497
North Char	11.0	8.3	10.0	-9.0		557	454	491
Well-being category								
Extreme poor	14.8	12.5	14.3	-3.6		310	301	324
Poor	13.5	9.5	9.4	-30.1	**	1,851	1,695	1,613
Middle	11.5	8.9	5.6	-51.2	**	210	197	188
Middle rich	15.0	8.4	5.6	-62.5	**	141	118	127
Rich	8.3	6.1	4.5	-45.7		81	68	74
Program approach								
MCHN/PEP	12.7	10.0	10.7	-15.6		1053	963	989
PM2A	16.2	8.0	7.8	-51.6	***	1541	1417	1337
Sex of headship								
Female	12.3	10.1	14.2	15.6		187	182	276
Male	13.6	9.8	9.7	-28.4		2,407	2,198	2,050
Percent of children under two severely underweight (0-23m)								
All households	10.9	9.3	10.8	-1.1		937	995	929
Sex of child								
Female	11.8	8.5	12.6	6.9		479	481	465
Male	10.0	10.2	8.7	-12.7		458	514	464
Region								
Coast	7.0	8.4	8.4	20.6		317	348	318
Haor	12.9	11.7	12.3	-5.0		226	258	238
Mid Char	7.4	4.9	5.8	-21.1		192	212	191
North Char	10.6	8.4	11.6	9.3		202	177	182
Well-being category								
Extreme poor	9.8	8.4	10.9	11.4		110	113	131
Poor	11.4	9.7	11.7	2.6		665	715	638
Middle	7.0	8.4	1.4	-80.1		78	94	77

Middle rich	13.4	8.3	3.4	-74.9	**	*56*	*51*	*53*
Rich	‡	‡	1.0		‡	*28*	*22*	*30*
Program approach								
MCHN/PEP	10.9	9.6	12.0	10.5		*377*	*388*	*376*
PM2A	11.0	8.7	6.9	-37.7	*	*560*	*607*	*553*
Sex of headship								
Female	0.5	2.5	10.9	2086.0	*	*49*	*71*	*108*
Male	11.3	9.7	10.8	-4.7		*888*	*924*	*821*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

‡ Insufficient number of observations.

Table 26. Child malnutrition indicators (moderate, under five), by age of mother

Indicator	Baseline	Midterm	Endline – Index child only	Percent Difference (Endline-Baseline)	Significance level	Number of observations		
						Baseline	Midterm	Endline
Percent of children under five								
Stunted (6-59m) - All	61.7	52.7	48.8	-21.0	***	*2,384*	*2,167*	*2,143*
Age of mother								
15-25 years	62.3	53.9	47.8	-23.3	***	*1,237*	*1,059*	*946*
26-49 years	60.7	51.2	49.5	-18.5	***	*1,114*	*1,062*	*1,139*
Wasted (6-59m) - All								
Age of mother								
15-25 years	16.0	10.3	12.6	-21.2		*1,237*	*1,059*	*946*
26-49 years	15.0	7.9	11.9	-20.8		*1,114*	*1,062*	*1,139*
Underweight (0-59m) - All	42.2	34.2	35.3	-16.3	***	*2,594*	*2,380*	*2,326*
Age of mother								
15-25 years	43.2	32.6	36.9	-14.5	*	*1,398*	*1,190*	*1,049*
26-49 years	40.9	35.6	34.2	-16.3	**	*1,171*	*1,142*	*1,217*
Percent of children under two						Baseline	Midterm	Endline
Stunted (6-23m) - All	55.8	52.0	42.9	-23.1	***	*727*	*782*	*746*
Age of mother								
15-25 years	55.6	49.0	42.2	-24.0	**	*466*	*472*	*385*
26-49 years	56.3	55.4	44.6	-20.9	*	*257*	*298*	*348*
Wasted (6-23m) - All	8.1	2.5	5.0	-38.9		*727*	*782*	*746*
Age of mother								
15-25 years	16.3	13.8	13.5	-16.9		*466*	*472*	*385*
26-49 years	21.2	8.9	14.4	-31.9		*257*	*298*	*348*
Underweight (0-23m) - All	33.2	32.1	29.5	-11.1		*937*	*995*	*929*
Age of mother								
15-25 years	34.9	31.1	28.1	-19.6		*618*	*603*	*488*
26-49 years	30.0	33.2	30.4	1.2		*314*	*378*	*426*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 27. Percent of children 6-23 months with diarrhea in the last two weeks

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
All	13.8	11.6	8.1	-41.1	**	*848*	*902*	*905*
PEP households	13.9	11.5	8.1	-42.1	**	*684*	*750*	*755*
Region								
Coast	23.3	15.2	5.4	-76.8	***	*282*	*319*	*329*
Haor	14.2	10.9	8.6	-40.0		*225*	*241*	*206*
Mid Char	15.3	10.0	5.7	-62.7	***	*161*	*185*	*187*
North Char	10.6	12.7	9.4	-11.8		*180*	*157*	*183*
Well-being category								
Extreme poor	13.9	13.9	11.3	-18.9		*78*	*98*	*125*
Poor	13.9	11.2	7.2	-48.4	***	*606*	*652*	*630*
Middle	13.6	8.2	7.3	-46.5		*77*	*85*	*69*
Middle rich	10.7	23.3	12.3	14.3		*61*	*45*	*51*
Rich	‡	‡	‡	‡	‡	*25*	*22*	*30*
Program approach								
MCHN/PEP	13.2	10.7	8.6	-35.0		*345*	*352*	*391*
PM2A	16.1	14.2	6.6	-58.8	***	*503*	*550*	*514*
Sex of headship								
Female	34.2	17.2	14.1	-58.9		*38*	*66*	*105*
Male	13.2	11.3	7.6	-42.9	**	*810*	*836*	*800*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
‡ Insufficient number of observations.

Table 28. Moderate and severe malnutrition among children under five and children under two, by sex of household head

Indicator	Male headed households				Female headed households				Difference (Female vs. male)
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)		
Under fives									
Stunting	61.0	49.5	-18.8		72.9	38.7	-46.9	*	148.9
Wasting	15.6	12.0	-23.0	*	14.2	15.2	6.9		-130.0
Underweight	42.0	35.7	-15.1	*	46.5	31.1	-33.2	*	120.5
Under twos									
Stunting	55.4	43.1	-22.2	*	68.8	41.2	-40.1	*	80.7
Wasting	18.6	14.0	-24.7		5.1	16.7	227.5		-1019.7
Underweight	33.8	29.2	-13.6		14.8	32.6	120.3		-983.7

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 10% level.

Table 29. Percent of women underweight, by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
All	36.8	32.2	30.7	-16.5	*	*2,881*	*2,485*	*2,467*
PEP households	37.2	32.5	31.5	-15.4	*	*2,401*	*2,088*	*2,073*
Region								
Coast	21.4	14.5	13.2	-38.1	***	*896*	*799*	*843*
Haor	37.1	36.5	39.1	5.5		*706*	*664*	*589*
Mid Char	39.8	28.5	25.7	-35.3	***	*673*	*533*	*506*
North Char	37.5	31.6	24.6	-34.4	**	*606*	*489*	*529*
Well-being category								
Extreme poor	37.4	33.9	42.9	14.7		*345*	*306*	*343*
Poor	37.2	32.3	28.5	-23.4	**	*2,056*	*1,782*	*1,730*
Middle	35.9	30.3	24.1	-33.0	*	*232*	*201*	*197*
Middle rich	29.3	29.6	23.5	-20.0		*161*	*1,213*	*125*
Rich	25.2	20.8	11.6	-53.9		*85*	*123*	*72*
Program approach								
MCHN/PEP	36.9	33.0	31.8	-13.8		*1,188*	*1,014*	*1,054*
PM2A	36.4	29.8	27.1	-25.4	***	*1,693*	*1,471*	*1,413*
Sex of headship								
Female	32.8	27.1	40.5	23.6		*212*	*204*	*283*
Male	37.0	32.6	29.9	-19.1	**	*2,669*	*2,281*	*2,184*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

IR 2.1

Table 30. Caring practices for children under two – Immunizations (Percent)

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Immunized against 8 diseases by 12 months (12-23 months)								
All	58.6	74.9	73.0	24.6	**	*392*	*480*	*489*
PEP households	58.7	75.3	72.3	23.2	**	*307*	*393*	*419*
Region								
Coast	64.0	74.0	66.5	3.9		*118*	*150*	*172*
Haor	56.1	72.1	70.3	25.3		*88*	*133*	*112*
Mid Char	58.4	65.2	73.5	25.9	*	*75*	*105*	*106*
North Char	60.0	83.1	78.1	30.1	*	*111*	*92*	*99*
Well-being category								
Extreme poor	‡	‡	‡	‡	‡	*34*	*49*	*72*
Poor	57.1	76.3	74.2	29.9	***	*273*	*344*	*347*
Middle	45.8	67.9	‡	‡	‡	*40*	*56*	*31*
Middle rich	‡	‡	‡	‡	‡	*28*	*18*	*26*
Rich	‡	‡	‡	‡	‡	*16*	*13*	*13*
Program approach								
MCHN/PEP	58.6	76.6	72.9	24.3	**	*160*	*181*	*210*
PM2A	58.3	69.8	73.6	26.1	***	*232*	*299*	*279*
Sex of headship								
Female	‡	‡	‡	‡	‡	*16*	*38*	*56*
Male	58.6	74.6	75.1	28.2	***	*376*	*442*	*433*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
‡ Insufficient number of observations.

Table 31. Overview: Access to and utilization of health and nutrition services improved to caregivers of children under 2 years of age

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of women underweight	36.8	32.2	30.8	-6.0	*	*2,881*	*2,485*	*2,467*
Dietary diversity scores of mothers of children under five (out of 14 food groups)	4.6	5.6	8.1	76.3	***	*3,105*	*2,780*	*2,861*
Percent of mothers receiving antenatal care	47.1	64.5	85.3	38.2	***	*3,119*	*2,802*	*2,885*
Percent of mothers receiving antenatal care in a medical facility [a/]	23.5	35.5	63.3	42.1	***	*3,120*	*2,797*	*2,834*
Percent of mothers taking more food during pregnancy	12.5	25.2	57.6	45.1	***	*3,119*	*2,797*	*2,835*
Percent of mothers taking more rest during pregnancy	23.5	35.5	63.3	42.1	***	*3,120*	*2,797*	*2,834*
Percent of pregnant and lactating women taking iron/folic acid in the last 7 days	15.2	29.8	52.0	36.8	***	*1,255*	*1,214*	*1,346*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
[a/] Reported only for mothers receiving any antental care.

Table 32. Indicators of caring practices for mothers during pregnancy, by region, well-being category, program approach and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of pregnant and lactating women taking iron/folic acid in the last 7 days								
All	15.2	29.8	52.0	242.1	***	*1,255*	*1,214*	*1,346*
PEP households	23.3	35.5	51.8	122.3	***	*1,043*	*1,024*	*1,139*
Region								
Coast	13.9	23.0	50.8	265.7	***	*450*	*433*	*502*
Haor	11.6	26.2	48.7	320.1	***	*332*	*330*	*333*
Mid Char	16.0	31.4	43.1	169.2	***	*226*	*238*	*260*
North Char	20.5	36.3	62.7	206.1	***	*247*	*213*	*251*
Well-being category								
Extreme poor	12.4	18.4	41.9	237.7	***	*136*	*147*	*202*
Poor	15.1	31.4	54.7	262.5	***	*907*	*877*	*937*
Middle	19.1	34.4	56.9			*100*	*108*	*97*
Middle rich	19.5	22.0	52.6	169.5	**	*77*	*57*	*66*
Rich	37.5	‡	53.2	‡		*35*	*25*	*44*
Program approach								
MCHN/PEP	15.1	30.2	51.7	242.6	***	*529*	*508*	*588*
PM2A	15.5	28.5	52.9	241.4	***	*726*	*706*	*758*
Sex of headship								
Female	15.2	30.1	52.0	241.6	***	*69*	*85*	*150*
Male	15.4	30.6	51.9	237.1	***	*1,186*	*1,129*	*1,196*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
‡ Insufficient number of observations.

Table 33. Indicators of caring practices for mothers during pregnancy, by region, well-being category, program approach and sex of household head (continued)

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of mothers receiving antenatal care								
All	47.1	64.5	85.3	81.0	***	*3,119*	*2,802*	*2,885*
PEP households	45.8	64.0	83.8	83.0	***	*2,602*	*2,367*	*2,408*
Region								
Coast	45.4	58.1	79.6	75.2	***	*1,013*	*926*	*972*
Haor	41.4	55.7	83.5	101.6	***	*777*	*751*	*705*
Mid Char	46.0	60.5	84.9	84.6	***	*695*	*598*	*584*
North Char	55.7	80.7	89.3	60.3	***	*634*	*527*	*624*
Well-being category								
Extreme poor	48.0	56.6	80.9	68.5	***	*370*	*356*	*404*
Poor	45.5	65.2	86.0	89.0	***	*2,232*	*2,011*	*2,004*
Middle	57.4	65.5	92.9	61.8	***	*249*	*222*	*227*
Middle rich	62.8	70.9	88.6	41.0	***	*175*	*136*	*154*
Rich	74.2	80.5	95.2	28.3	***	*91*	*76*	*96*
Program approach								
MCHN/PEP	45.8	64.2	84.0	83.4	***	*1,299*	*1,173*	*1,244*
PM2A	51.2	65.4	89.7	75.2	***	*1,820*	*1,629*	*1,641*
Sex of headship								
Female	53.3	64.9	80.4	50.8	***	*236*	*228*	*333*
Male	46.7	64.4	85.7	83.4	***	*2,883*	*2,574*	*2,552*

Continued.

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of mothers receiving antenatal care in a medical facility£								
All	69.8	65.2	73.7	5.5		*1,526*	*1,769*	*2,232*
PEP households	68.6	64.5	73.1	6.6		*1,192*	*1,457*	*1,827*
Region								
Coast	87.6	90.8	97.2	11.0	***	*476*	*540*	*634*
Haor	62.1	49.3	97.2	56.5	***	*329*	*424*	*581*
Mid Char	70.4	76.8	84.6	20.1	**	*334*	*365*	*471*
North Char	74.5	73.1	81.9	9.9		*387*	*440*	*546*
Well-being category								
Extreme poor	65.4	66.2	71.8	9.8		*167*	*205*	*297*
Poor	69.2	64.3	73.5	6.2		*1,025*	*1,252*	*1,530*
Middle	76.3	62.4	76.3	0.0		*148*	*150*	*197*
Middle rich	84.4	83.5	84.9	0.6		*115*	*98*	*125*
Rich	92.7	87.9	82.3	-11.2	*	*69*	*63*	*83*
Program approach								
MCHN/PEP	69.9	65.8	73.7	5.4		*572*	*720*	*922*
PM2A	69.6	63.3	73.7	5.9		*954*	*1,049*	*1,310*
Sex of headship								
Female	56.9	70.9	73.5	29.2		*120*	*142*	*229*
Male	70.7	64.8	75.7	7.1		*1,406*	*1,627*	*2,003*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
£ Reported only for mothers receiving any antental care.

Table 34. Indicators of caring practices for mothers during pregnancy, by region, well-being category, program approach and sex of household head (continued)

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of mothers taking more food during pregnancy								
All households	12.5	25.2	57.6	361.0	***	*3,119*	*2,797*	*2,835*
PEP households	12.2	24.9	57.2	368.9	***	*2,602*	*2,363*	*2,375*
Region								
Coast	7.1	10.4	38.4	441.4	***	*1,014*	*925*	*963*
Haor	11.4	24.9	60.0	426.7	***	*775*	*750*	*692*
Mid Char	14.2	19.0	51.9	265.2	***	*695*	*597*	*569*
North Char	14.0	32.0	61.0	335.6	***	*635*	*525*	*611*
Well-being category								
Extreme poor	10.7	23.6	57.5	437.6	***	*372*	*356*	*398*
Poor	12.4	25.1	57.1	360.7	***	*2,230*	*2,007*	*1,977*
Middle	13.0	29.8	68.4	426.2	***	*249*	*221*	*221*
Middle rich	15.2	26.5	54.9	261.1	***	*175*	*136*	*148*
Rich	30.4	36.1	64.4	111.8	***	*91*	*76*	*91*
Program approach								
MCHN/PEP	12.6	25.2	57.1	352.9	***	*1,297*	*1,170*	*1,229*
PM2A	11.9	25.2	61.1	413.1	***	*1,822*	*1,627*	*1,606*
Sex of headship								
Female	11.6	20.1	58.2	401.9	***	*237*	*228*	*323*
Male	12.5	25.6	50.1	300.9	***	*2,882*	*2,569*	*2,512*

Continued.

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of mothers taking more rest during pregnancy								
All households	23.5	35.5	63.3	169.5	***	*3,120*	*2,797*	*2,834*
PEP households	23.3	35.5	65.5	181.0	***	*2,603*	*2,363*	*2,374*
Region								
Coast	26.8	22.1	53.8	100.8	***	*1,014*	*926*	*964*
Haor	18.8	31.2	61.2	225.3	***	*775*	*750*	*690*
Mid Char	29.8	38.6	64.1	115.2	***	*696*	*597*	*569*
North Char	25.6	42.9	75.3	194.1	***	*635*	*524*	*611*
Well-being category								
Extreme poor	17.3	26.2	58.5	237.9	***	*372*	*356*	*398*
Poor	24.3	37.0	67.3	177.0	***	*2,231*	*2,007*	*1,976*
Middle	22.5	34.8	71.0	215.3	***	*249*	*221*	*221*
Middle rich	27.6	34.6	61.2	121.8	***	*175*	*136*	*148*
Rich	32.5	36.7	66.0	102.8	***	*91*	*76*	*91*
Program approach								
MCHN/PEP	24.1	36.0	65.1	170.0	***	*1,298*	*1,171*	*1,228*
PM2A	21.6	33.9	67.2	211.1	***	*1,822*	*1,626*	*1,606*
Sex of headship								
Female	22.5	30.3	50.9	126.4	***	*237*	*228*	*323*
Male	23.5	35.9	66.7	183.9	***	*2,883*	*2,569*	*2,511*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 35. Dietary diversity of mothers of children under five, by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Dietary diversity score (out of 14 food groups)								
All	4.6	5.6	8.4	81.6	***	*3,105*	*2,780*	*2,861*
PEP households	4.5	5.6	8.3	84.9	***	*2,592*	*2,347*	*2,387*
Region								
Coast	4.5	5.3	7.6	67.8	***	*1,011*	*923*	*967*
Haor	4.6	6.3	8.5	84.0	***	*773*	*746*	*691*
Mid Char	4.6	4.8	7.9	72.6	***	*691*	*589*	*581*
North Char	4.6	5.2	8.6	86.6	***	*630*	*522*	*622*
Well-being category								
Extreme poor	4.4	5.7	8.3	89.1	***	*368*	*352*	*404*
Poor	4.5	5.6	8.3	84.9	***	*2,224*	*1,995*	*1,983*
Middle	5.1	6.0	8.6	69.3	***	*248*	*221*	*228*
Middle rich	5.5	6.1	8.4	53.5	***	*172*	*136*	*155*
Rich	6.9	7.2	9.6	39.2	***	*91*	*75*	*91*
Program approach								
MCHN/PEP	4.5	5.6	8.3	83.9	***	*1,296*	*1,158*	*1,234*
PM2A	4.8	5.8	8.6	79.2	***	*1,809*	*1,622*	*1,627*
Sex of headship								
Female	4.5	5.4	7.7	71.7	***	*235*	*225*	*327*
Male	4.6	5.7	8.4	82.6	***	*2,870*	*2,555*	*2,534*

Continued.

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of mothers consuming foods from food groups in the previous 24 hours								
Cereals, roots and tubers	98.9	98.7	99.0	0.1		*3,108*	*2,780*	*2,328*
Pulses and legumes	16.0	33.1	57.4	258.5	***	*3,107*	*2,781*	*2,328*
Dairy products	8.2	13.8	39.3	379.4	***	*3,107*	*2,781*	*2,328*
Meat, fish/seafood & eggs	61.8	72.7	90.7	46.8	***	*3,107*	*2,781*	*2,328*
Oils and fats	69.5	72.2	92.0	32.4	***	*3,107*	*2,781*	*2,328*
Vegetables	90.6	93.1	97.0	7.0	***	*3,107*	*2,781*	*2,328*
Vitamin A -rich vegetables	20.2	22.8	34.8	72.2	***	*3,107*	*2,781*	*2,328*
Dark green leafy vegetables	39.5	49.4	74.3	88.2	***	*3,108*	*2,781*	*2,328*
Fruits	6.3	13.4	48.0	662.7	***	*3,108*	*2,780*	*2,328*
Vitamin A -rich fruits	3.6	7.8	25.5	607.1	***	*3,107*	*2,781*	*2,328*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

IR 2.2

Table 36. Caring practices for children under two - Exclusive breastfeeding (Percent)

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Exclusive breastfeeding (0-5 months)								
All	64.1	66.4	62.2	-3.0		*282*	*247*	*266*
PEP households	65.2	65.9	63.1	-3.3		*247*	*213*	*218*
Region								
Coast	57.4	63.4	71.6	24.7	**	*101*	*83*	*86*
Haor	64.0	66.7	50.8	-20.7		*70*	*58*	*77*
Mid Char	61.4	62.1	44.0	-28.4		*60*	*58*	*45*
North Char	67.2	68.9	89.2	32.7	**	*51*	*48*	*58*
Well-being category								
Extreme poor	51.0	71.5	63.5	24.4		*50*	*37*	*42*
Poor	68.4	64.5	63.0	-8.0		*197*	*176*	*176*
Middle	‡	‡	‡	‡		*15*	*17*	*30*
Middle rich	‡	‡	‡	‡		*12*	*12*	*8*
Rich	‡	‡	‡	‡		*8*	*5*	*10*
Program approach								
MCHN/PEP	67.9	65.3	66.8	-1.6		*120*	*118*	*99*
PM2A	50.4	71.1	51.1	1.3		*162*	*129*	*167*
Sex of headship								
Female	‡	‡	‡	‡		*23*	*20*	*24*
Male	65.0	66.2	61.0	-6.1		*242*	*227*	*259*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

‡ Insufficient number of observations.

Table 37. Indicators of hygiene practices, by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of mothers of children under five who feel it is important to wash their hands at all five critical times £								
All	9.8	10.9	29.8	204.4	***	*3,126*	*2,791*	*2,908*
PEP households	9.7	10.9	29.7	206.3	***	*2,608*	*2,358*	*2,423*
Region								
Coast	8.2	6.5	15.3	87.0	***	*1,014*	*923*	*976*
Haor	8.1	10.7	28.7	254.0	***	*777*	*748*	*715*
Mid Char	18.1	18.7	26.1	44.0	*	*699*	*596*	*591*
North Char	7.8	7.7	36.6	368.6	***	*636*	*524*	*626*
Well-being category								
Extreme poor	6.9	14.8	23.6	242.3	***	*372*	*355*	*408*
Poor	10.1	10.3	31.3	209.6	***	*2,236*	*2,003*	*2,015*
Middle	10.5	8.8	35.0	232.9	***	*249*	*221*	*231*
Middle rich	9.9	12.5	26.2	164.7	**	*176*	*136*	*158*
Rich	13.0	7.7	30.9	138.3	**	*91*	*75*	*96*
Program approach								
MCHN/PEP	10.0	11.3	29.3	192.9	***	*1300*	*1167*	*1251*
PM2A	9.0	9.3	31.7	252.4	***	*1,826*	*1,624*	*1,657*
Sex of headship								
Female	5.6	5.7	19.4	247.0	***	*237*	*227*	*339*
Male	10.0	11.2	30.7	207.0	***	*2,889*	*2,564*	*2,569*

Continued.

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of children under three years whose feces are disposed of safely								
All	41.4	68.2	60.3	45.5	***	*1,620*	*1,547*	*1,447*
PEP households	41.2	68.0	59.9	45.5	***	*1,365*	*1,303*	*1,216*
Region								
Coast	32.7	53.5	56.3	72.0	***	*566*	*571*	*530*
Haor	35.7	68.8	54.9	53.9	***	*408*	*401*	*360*
Mid Char	40.2	58.2	57.6	43.3	***	*323*	*305*	*269*
North Char	51.6	75.7	71.1	37.8	***	*323*	*270*	*288*
Well-being category								
Extreme poor	35.9	63.5	59.2	64.8	***	*189*	*179*	*210*
Poor	42.1	68.8	60.2	42.9	***	*1,176*	*1,124*	*1,006*
Middle	45.6	66.0	65.2	42.9	**	*123*	*127*	*107*
Middle rich	45.6	66.0	65.3	43.1	**	*85*	*79*	*76*
Rich	32.2	69.5	58.6	81.7	**	*46*	*38*	*48*
Program approach								
MCHN/PEP	42.5	68.9	59.0	38.8	***	*678*	*625*	*608*
PM2A	38.0	66.0	64.3	69.2	***	*942*	*922*	*839*
Sex of headship								
Female	38.3	67.7	51.0	33.1		*111*	*123*	*161*
Male	41.6	68.2	61.0	46.7	***	*1,509*	*1,424*	*1,286*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
£ The five critical times are: Before eating, before breastfeeding or feeding a child, before cooking or preparing food, after defecation/urination, and after cleaning a child that has defecated/changing a child's diaper.

Table 38. Caring practices for children under two (percent)

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Exclusive breastfeeding (0-5 months)								
All households	64.1	66.4	62.2	-3.0		*282*	*247*	*266*
PEP households	65.2	65.9	63.1	-3.3		*247*	*213*	*218*
Program Approach								
MCHN/PEP	67.9	65.3	66.8	-1.6		*120*	*118*	*99*
PM2A	50.4	71.1	51.1	1.3		*162*	*129*	*167*
Sex of headship								
Female	‡	‡	‡	‡		*23*	*20*	*24*
Male	65.0	66.2	61.0	-6.1		*242*	*227*	*259*
Minimum dietary diversity (6-23 months)								
All households	12.7	25.9	56.9	348.2	***	*836*	*882*	*903*
PEP households	11.2	25.0	56.7	406.1	***	*672*	*733*	*753*
Program Approach								
MCHN/PEP	11.3	25.3	56.4	399.6	***	*336*	*344*	*391*
PM2A	17.2	27.8	58.9	242.0	***	*500*	*538*	*512*
Sex of headship								
Female	26.0	30.8	46.5	78.9		*40*	*64*	*104*
Male	12.3	25.7	57.9	371.3	***	*796*	*818*	*799*
Minimum meal frequency (breastfed, 6-23 months)								
All households	47.7	45.6	65.7	37.7	***	*669*	*683*	*747*
PEP households	47.8	45.6	65.3	36.5	***	*538*	*573*	*628*
Program Apporach								
MCHN/PEP	49.1	46.7	64.7	31.7	**	*263*	*264*	*319*
PM2A	43.0	42.3	69.3	61.2	***	*406*	*419*	*428*
Sex of headship								
Female	47.6	35.7	61.4	28.9		*31*	*45*	*85*
Male	47.7	46.0	66.1	38.6	***	*638*	*638*	*662*

Continued.

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Minimum acceptable diet (breastfed, 6-23 months)								
All households	8.7	17.5	47.9	451.0	***	*669*	*683*	*747*
PEP households	7.5	17.0	47.8	537.7	***	*538*	*573*	*628*
Program Apporach								
MCHN/PEP	7.1	17.8	47.9	577.0	***	*263*	*264*	*319*
PM2A	13.8	16.5	47.9	247.9	***	*406*	*419*	*428*
Sex of headship								
Female	22.5	8.6	48.0	112.9		*31*	*45*	*85*
Male	8.2	17.8	47.9	481.7	***	*638*	*638*	*662*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
Note: Breakdowns by region and well-being category are not possible due to insufficient number of observations.
‡ Insufficient number of observations.

Table 39. Caring practices for children under two (percent)

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Monomix or other vitamin sprinkles (6-23 months)								
All households	2.5	6.6	31.7	1166.8	***	*835*	*891*	*870*
PEP households	2.4	5.9	31.9	1227.5	***	*672*	*742*	*729*
Program Apporach								
MCHN/PEP	2.7	6.0	31.5	1050.0	***	*334*	*350*	*374*
PM2A	1.9	8.4	32.2	1642.2	***	*501*	*541*	*496*
Sex of headship								
Female	13.1	3.1	15.3			*40*	*65*	*100*
Male	2.2	6.8	33.11	1405.0	***	*795*	*826*	*770*

Continued.

Indicator	Baseline	Midterm	Endline	Percent Difference		Number of observations		
						Baseline	Midterm	Endline
Vitamin A capsule in last 6 months (6-23 months)								
All households	58.3	67.3	85.2	46.1	***	*849*	*888*	*873*
PEP households	58.4	67.7	85.3	46.1	***	*684*	*738*	*733*
Program Apporach								
MCHN/PEP	58.2	69.0	86.5	48.5	***	*342*	*351*	*375*
PM2A	58.5	62.4	80.4	37.5	***	*507*	*537*	*498*
Sex of headship								
Female	82.8	70.2	83.8			*40*	*63*	*100*
Male	57.6	67.1	85.3	48.2	***	*809*	*825*	*773*
Immunized against 8 diseases by 12 months (12-23 months)								
All households	58.6	74.9	73.0	24.6	**	*392*	*480*	*489*
PEP households	58.7	75.3	72.3	23.2	**	*307*	*393*	*419*
Program Apporach								
MCHN/PEP	58.6	76.6	72.9	24.3	**	*160*	*181*	*210*
PM2A	58.3	69.8	73.6	26.2	***	*232*	*299*	*279*
Sex of headship								
Female	‡	81.6	51.6	‡		*16*	*38*	*56*
Male	58.6	74.6	75.1	28.2	***	*376*	*442*	*433*
Percent receiving ORS for diarrhea (6-24 m olds with diarrhea in last two weeks)								
All households	61.1	86.0	97.7	59.9	***	*147*	*120*	*55*
PEP households	59.3	85.4	97.5	64.5	***	*125*	*101*	*46*
Program Apporach								
MCHN/PEP	55.3	84.6	97.2	75.7	***	*58*	*46*	*32*
PM2A	76.5	89.0	100.0	30.8	***	*89*	*74*	*23*
Sex of headship								
Female	‡	‡	‡	‡		*7*	*15*	*8*
Male	61.4	87.5	97.3	58.5	***	*140*	*105*	*47*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
Note: Breakdowns by region and well-being category are not possible due to insufficient number of observations.
‡ Insufficient number of observations.

WATER AND SANITATION

Table 40. Improved drinking water and sanitation facility, by region, well-being category, program approach, and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of households with access to an improved drinking water source								
All	59.5	76.3	77.9	30.8	***	*7,085*	*6,916*	*7146*
PEP households	59.2	75.9	77.4	30.9	***	*5,761*	*5,672*	*5842*
Region								
Coast	66.4	76.2	71.4	7.4	*	*1,885*	*1,852*	*1907*
Haor	59.3	75.2	77.2	30.3	***	*1672*	*1701*	*1689*
Mid Char	61.9	74.0	73.5	18.9	***	*1798*	*1745*	*1652*
North Char	57.8	78.7	81.0	40.0	***	*1730*	*1618*	*1898*
Well-being category								
Extreme poor	54.7	73.1	79.4	45.0	***	*1195*	*1237*	*1333*
Poor	60.4	76.7	76.8	27.2	***	*4566*	*4435*	*4509*
Middle	58.5	81.6	77.3	32.1	***	*638*	*599*	*577*
Middle rich	69.0	79.6	84.2	22.0	***	*428*	*409*	*452*
Rich	68.6	80.8	78.1	13.8	*	*252*	*235*	*274*
Program approach								
MCHN/PEP	59.3	76.1	77.2	30.2	***	*2888*	*2766*	*2944*
PM2A	60.4	77.0	79.0	30.7	***	*4197*	*4150*	*4202*
Sex of headship								
Female	58.0	73.2	77.0	32.7	***	*957*	*1009*	*1221*
Male	59.8	76.8	77.7	30.0	***	*6128*	*5907*	*5925*

Continued.

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of households with access to an improved sanitation facility								
All	20.3	32.4	52.8	160.1	***	*7085*	*6916*	*7148*
PEP households	19.2	30.9	51.6	169.2	***	*5761*	*5672*	*5844*
Region								
Coast	18.9	31.3	46.0	142.7	***	*1885*	*1852*	*1907*
Haor	16.3	30.6	51.3	214.8	***	*1672*	*1701*	*1689*
Mid Char	25.4	33.9	44.1	73.8	***	*1798*	*1745*	*1652*
North Char	22.5	34.1	59.9	166.4	***	*1730*	*1618*	*1900*
Well-being category								
Extreme poor	13.6	27.7	49.5	265.1	***	*1195*	*1237*	*1333*
Poor	20.7	31.8	52.3	153.0	***	*4566*	*4435*	*4511*
Middle	27.5	39.3	62.6	127.8	***	*638*	*599*	*577*
Middle rich	30.4	54.9	68.1	124.0	***	*428*	*409*	*452*
Rich	53.7	70.0	76.9	43.1	***	*252*	*235*	*274*
Program approach								
MCHN/PEP	19.9	31.4	51.2	157.1	***	*2888*	*2766*	*2945*
PM2A	21.7	35.8	58.3	169.0	***	*4197*	*4150*	*4203*
Sex of headship								
Female	12.9	23.8	47.3	266.1	***	*957*	*1009*	*1221*
Male	21.4	33.8	53.9	151.2	***	*6128*	*5907*	*5927*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

BY PROGRAM APPROACH

Table 41. Moderate and severe malnutrition among children under five and children under two, by program approach

Indicator	Baseline					Endline				
	MCHN/PEP	PM2A	Difference	Percent difference (PM2A-MCHN/PEP)		MCHN/PEP	PM2A	Difference	Percent difference (PM2A-MCHN/PEP)	
Under fives										
Stunting (6-59m)	62.2	59.9	2.3	-3.7		49.6	45.2	4.5	-9.0	
Wasting (6-59m)	15.5	15.9	-0.4	2.6		12.8	10.4	2.4	-18.5	
Underweight (0-59m)	42.6	41.0	1.6	-3.7		36.3	31.9	4.4	-12.2	*
Under twos										
Stunting (6-23m)	57.9	49.4	8.5	-14.6	*	44.1	39.0	5.1	-11.6	
Wasting (6-23m)	18.6	17.1	1.4	-7.8		15.6	10.0	5.6	-35.9	*
Underweight (0-23m)	34.1	29.9	4.2	-12.2		31.0	24.8	6.2	-19.9	

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

BY PEP/NON-PEP

Table 42. PEP participation by region

	Baseline		Midterm		Endline	
Number of PEP participants	PEP	Non-PEP	PEP	Non-PEP	PEP	Non-PEP
Region						
Coast	200	1,685	183	1,669	179	1,728
Haor	330	1,340	329	1,372	335	1,354
Mid Char	366	1,431	336	1,408	354	1,298
North Char	422	1,305	395	1,223	435	1,464

Table 43. Moderate and severe malnutrition among children under five and children under two (PEP versus non-PEP)

Indicator	Non-Poor				PEP				Difference (PEP vs. non-PEP)
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)		
Under fives									
Stunting	53.8	32.3	-39.9	*	62.3	50.0	-19.8	*	20.2
Wasting	12.3	8.5	-30.8		15.8	12.5	-21.0		9.8
Underweight	37.0	23.1	-37.7	*	42.7	36.3	-15.0	*	22.8
Under twos									
Stunting	38.9	23.7	-39.1	*	57.3	44.4	-22.5	*	16.6
Wasting	13.6	5.3	-61.1	*	18.6	14.9	-19.9		41.2
Underweight	24.3	12.1	-50.4	*	33.9	31.0	-8.4		42.0

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 10% level.

Table 44. Indicator of diarrhea incidence (PEP versus non-PEP)

Indicator	Non-PEP				PEP				Difference (PEP vs. non-PEP)
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)		
Percent of children 6-23 months with diarrhea in the last two weeks	12.8	9.2	-28.0		13.9	8.1	-42.3	*	14.22

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.

Table 45. Access to and utilization of health and nutrition services improved to caregivers of children under 2 years of age (PEP versus non-PEP)

Indicator	Non-PEP				PEP				Difference (PEP vs. non-PEP)	
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)			
Percent of women underweight	31.3	21.4	-31.7	*	37.2	31.5	-15.2	*	16.4	31.3
Dietary diversity scores of mothers of children under five (out of 14 food groups)	5.6	8.4	51.8		4.5	8.3	83.6		31.8	5.6
Percent of mothers receiving antenatal care	64.1	89.6	39.7		45.8	83.8	83.0		43.3	64.1
Percent of mothers receiving antenatal care in a medical facility£	84.6	80.0	-5.5	*	68.6	73.1	6.6	*	12.1	84.6
Percent of mothers taking more food during pregnancy	17.2	63.2	266.5	*	12.2	57.2	368.9	*	102.4	17.2
Percent of mothers taking more rest during pregnancy	27.5	66.7	142.6	*	23.3	65.5	181.0	*	38.3	27.5
Percent of pregnant and lacatating women taking iron/folic acid in the last 7 days	22.5	55.0	143.8	*	14.5	51.8	257.8	*	114.0	22.5

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.
£ Reported only for mothers receiving any antental care.

Table 46. Indicators of hygiene practices (PEP versus non-PEP)

Indicator	Non-PEP				PEP				Difference (PEP vs. non-PEP)
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)		
Percent of mothers of children under five who feel it is important to wash their hands at all five critical times £	10.8	31.5	192.5	*	9.7	29.7	206.9		14.45
Percent of children under three years who feces are disposed of safely	45.3	64.1	41.5	*	41.2	59.9	45.6	*	4.11

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.
£ The five critical times are: Before eating, before breastfeeding or feeding a child, before cooking or preparing food, after defecation/urination, and after cleaning a child that has defecated/changing a child's diaper.

Table 47. Caring practices for children under 2 (PEP versus non-PEP)

Indicator	Non-PEP				PEP				Difference (PEP vs. non-PEP)
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)		
Exclusive breastfeeding (0-5 months)	45.7	53.9	17.9		65.2	63.1	-3.3		21.25
Minimum dietary diversity (6-23 months)	28.8	60.1	108.9	*	11.2	56.7	406.1	*	297.17
Minimum meal frequency (Breastfed, 6-23 months)	46.9	71.6	52.7	*	47.8	65.3	36.7	*	16.00
Minimum acceptable diet (breastfed, 6-23 months)	21.5	49.4	129.4	*	7.5	47.8	542.0	*	412.65
Monomix or other vitamin sprinkes (6-23 months)	4.5	29.2	546.3	*	2.4	31.9	1255.7	*	709.40
Vitamin A capsule in last 6 months (6-23 months)	56.7	82.7	46.0	*	58.4	85.3	46.1		0.13
Immunized against 8 diseases by 12 months (12-23 months)	56.7	85.7	51.2	*	58.7	72.3	23.2	*	27.94
Percent receiving ORS for diarrhea (6-24 m olds with diarrhea in last two weeks)	‡	‡	‡		59.3	97.5	64.5	*	‡

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.

‡ Insufficient number of observations.

Table 48. Indicators of improved water and sanitation (PEP versus non-PEP)

Indicator	Non-PEP				PEP				Difference (PEP vs. non-PEP)
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)		
Percent of households with access to an improved drinking water source	63.9	79.7	24.7	*	59.2	77.4	30.9	*	6.17
Percent of households with access to an improved sanitation facility	33.8	67.6	100.3	*	19.2	51.6	169.2	*	68.94

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.

BY MALE/FEMALE HHH

Table 49. Moderate and severe malnutrition among children under five and children under two, by sex of household head

Indicator	Male headed households				Female headed households				Difference (Female vs. male)
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)		
Under fives									
Stunting	61.0	50.9	-16.6		72.9	44.1	-39.5		138.6
Wasting	15.6	11.0	-29.5		14.2	14.9	4.9		-116.7
Underweight	42.0	36.1	-14.0		46.5	33.8	-27.3		94.4
Under twos									
Stunting	55.4	43.7	-21.1		68.8	43.9	-36.2		71.4
Wasting	18.6	12.7	-31.7		5.1	17.0	233.3		-835.6
Underweight	33.8	29.4	-13.0		14.8	31.5	112.8		-966.8

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.

Table 50. Access to and utilization of health and nutrition services improved to caregivers of children under 2 years of age, by head of household

Indicator	Male headed households				Female headed households				Difference (Female vs. male)
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)		
Percent of women underweight	37.0	30.1	-18.7		32.8	40.0	21.9		40.6
Dietary diversity scores of mothers of children under five (out of 14 food groups)	4.6	7.5	63.9	*	4.5	7.4	64.0	*	0.1
Percent of mothers receiving antenatal care	46.7	85.7	83.4	*	53.3	80.4	50.8	*	-32.6
Percent of mothers receiving antenatal care in a medical facility£	70.7	75.7	7.1		56.9	73.5	29.2		22.1
Percent of mothers taking more food during pregnancy	12.5	50.1	300.9	*	11.6	58.2	401.9	*	101.0
Percent of mothers taking more rest during pregnancy	23.5	66.7	183.9	*	22.5	50.9	126.4	*	-57.5
Percent of pregnant and lactating women taking iron/folic acid in the last 7 days	15.4	51.9	237.1	*	‡	53.0	‡	*	‡

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.
£ Reported only for mothers receiving any antenatal care.
‡ Insufficient number of observations.

Table 51. Water and sanitation key indicators, by sex of household head

Indicator	Male headed households				Female headed households				Difference (Female vs. male)
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)		
Percent of households with access to an improved drinking water source	59.8	77.7	30.0	*	58.0	77.0	32.7	*	2.7
Percent of households with access to an improved sanitation facility	21.4	53.9	151.3		12.9	47.3	266.3		115.0

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.

SO3 Tables

SO2 PROGRAM INDICATORS

Table X. Indicators of women's empowerment, by region, well-being category, and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of women earning cash income/control over economic resources								
All	5.7	11.3	19.8	249.65	***	*6492*	*6795*	*7146*
Region								
Coast	4.5	8.5	19.5	338.20	***	*1852*	*1835*	*1907*
Haor	4.3	9.8	14.0	227.04	***	*1639*	*1654*	*1689*
Mid Char	5.9	8.2	18.4	210.44	***	*1766*	*1710*	*1652*
North Char	7.2	14.9	27.2	277.92	***	*1685*	*1596*	*1898*
Well-being category								
Extreme poor	10.3	14.1	23.4	128.07	***	*1170*	*1208*	*1333*
Poor	4.8	11.1	19.8	315.55	***	*4481*	*4363*	*4509*
Middle	2.9	7.9	10.4	259.31	***	*621*	*590*	*577*
Middle rich	2.9	3.8	7.7	162.24	**	*419*	*401*	*452*
Rich	1.3	1.4	8.2	530.77	***	*245*	*232*	*274*
Sex of headship								
Female	16.4	20.9	31.9	94.57	***	*954*	*1006*	*1221*
Male	4.0	9.7	17.6	340.35	***	*5988*	*5789*	*5925*

Continued.

Percent of women participating in any group								
All	20.72	26.97	20.70	-0.10		*6943*	*6795*	*7146*
Region								
Coast	13.18	11.97	24.03	82.32	***	*1852*	*1835*	*1907*
Haor	12.67	30.32	16.51	30.31		*1640*	*1654*	*1689*
Mid Char	29.52	28.98	21.34	-27.71	**	*1766*	*1710*	*1652*
North Char	26.32	24.14	24.82	-5.70		*1685*	*1596*	*1898*
Well-being category								
Extreme poor	13.58	23.39	18.56	36.67	**	*1170*	*1208*	*1333*
Poor	22.80	28.13	22.59	-0.92		*4482*	*4363*	*4509*
Middle	20.15	25.66	10.33	-48.73	***	*621*	*590*	*577*
Middle rich	18.97	19.18	11.50	-39.38	**	*419*	*401*	*452*
Rich	16.26	25.69	9.66	-40.59	*	*245*	*232*	*274*
Sex of headship								
Female	12.23	14.14	17.36	41.95	*	*954*	*1006*	*1221*
Male	22.03	29.09	21.31	-3.27		*5989*	*5789*	*5925*
Index of women's freedom of movement								
All	8.06	8.93	10.48	30.02	***	*6942*	*6795*	*7146*
Region								
Coast	7.52	8.29	9.39	24.87	***	*1851*	*1835*	*1907*
Haor	7.52	8.72	10.4	38.30	***	*1640*	*1654*	*1689*
Mid Char	8.37	8.98	10.09	20.55	***	*1766*	*1710*	*1652*
North Char	8.57	9.23	10.92	27.42	***	*1685*	*1596*	*1898*
Well-being category								
Extreme poor	8.43	9.24	10.58	25.50	***	*1170*	*1208*	*1333*
Poor	7.96	8.87	10.46	31.41	***	*4481*	*4363*	*4509*
Middle	8.14	8.8	10.46	28.50	***	*621*	*590*	*577*
Middle rich	7.99	8.58	10.46	30.91	***	*419*	*401*	*452*
Rich	7.6	8.42	10.1	32.89	***	*245*	*232*	*274*
Sex of headship								
Female	9.11	9.7	10.72	17.67	***	*953*	*1006*	*1221*
Male	7.89	8.8	10.44	32.32	***	*5989*	*5789*	*5925*

Continued.

Index of freedom from patriarchal beliefs among women								
All	1.55	1.70	1.91	23.23	***	*6722*	*6795*	*7007*
Region								
Coast	1.21	1.53	1.57	29.75	***	*1803*	*1835*	*1871*
Haor	1.51	1.75	1.97	30.46	***	*1514*	*1654*	*1658*
Mid Char	1.45	1.59	1.74	20.00	***	*1748*	*1710*	*1622*
North Char	1.68	1.73	1.98	17.86	***	*1657*	*1596*	*1856*
Well-being category								
Extreme poor	1.60	1.68	1.83	14.38	***	*1119*	*1208*	*1299*
Poor	1.54	1.70	1.93	25.32	***	*4342*	*4363*	*4418*
Middle	1.48	1.74	2.06	39.19	***	*606*	*590*	*570*
Middle rich	1.58	1.78	2.01	27.22	***	*412*	*401*	*447*
Rich	1.71	1.91	1.99	16.37	***	*237*	*232*	*272*
Sex of headship								
Female	1.60	1.66	1.83	14.38	***	*908*	*1006*	*1193*
Male	1.54	1.71	1.93	25.32	***	*5814*	*5789*	*5814*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

IR 3.1

Table 52. Indicators of women's empowerment for IR 3.1, by region, well-being category, and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Decision making score for women in household								
All	2.28	2.38	2.84	24.56	***	*6528*	*6440*	*6612*
Region								
Coast	2.21	2.40	2.66	20.36	***	*1797*	*1775*	*1721*
Haor	2.24	2.24	2.84	26.79	***	*1588*	*1550*	*1596*
Mid Char	2.38	2.18	2.74	15.13	***	*1560*	*1640*	*1548*
North Char	2.29	2.42	2.93	27.95	***	*1583*	*1475*	*1747*
Well-being category								
Extreme poor	2.64	2.63	2.98	12.88	***	*1013*	*1059*	*1173*
Poor	2.19	2.33	2.81	28.31	***	*4264*	*4200*	*4217*
Middle	2.29	2.31	2.79	21.83	***	*595*	*567*	*545*
Middle rich	2.30	2.33	2.84	23.48	***	*410*	*394*	*422*
Rich	2.34	2.32	2.76	17.95	***	*240*	*219*	*254*
Sex of headship								
Female	3.17	3.22	3.51	10.73	***	*827*	*842*	*1060*
Male	2.16	2.26	2.73	26.39	***	*5701*	*5598*	*5552*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

IR 3.2

Table 53. Indicators related to domestic violence against women for IR 3.2, by region, well-being category and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)		Number of observations		
						Baseline	Midterm	Endline
Percent of households in which female member was yelled at or struck during last year								
All	27.73	12.19	7.18	-74.11	***	*6507*	*6515*	*6947*
Region								
Coast	20.54	17.47	10.20	-50.34	***	*1763*	*1758*	*1826*
Haor	23.10	12.32	5.88	-74.55	***	*1507*	*1554*	*1646*
Mid Char	23.90	14.53	15.35	-35.77	***	*1656*	*1626*	*1621*
North Char	35.66	10.25	4.28	-88.00	***	*1581*	*1577*	*1854*
Well-being category								
Extreme poor	16.30	11.24	5.75	-64.72	***	*1083*	*1138*	*1305*
Poor	31.38	12.85	7.84	-75.02	***	*4207*	*4189*	*4367*
Middle	25.04	9.46	5.15	-79.43	***	*587*	*577*	*567*
Middle rich	20.18	6.96	7.60	-62.34	***	*393*	*390*	*437*
Rich	16.90	7.70	3.72	-77.99	***	*232*	*220*	*270*
Sex of headship								
Female	7.84	5.85	3.26	-58.42	**	*884*	*945*	*1194*
Male	30.74	12.21	7.91	-74.27	***	*5623*	*5570*	*5753*
Percent of women who believe a man is justified in hitting/abusing wife (across 6 situations)								
She goes out without telling him	50.08	25.68	11.74	-76.56	***	6837	6737	7047
She neglects the children	51.00	30.99	12.72	-75.06	***	6856	6730	7047
She argues with him	54.40	34.36	14.74	-72.90	***	6835	6722	7021
She refuses to have sex with him	20.81	9.22	3.16	-84.81	***	6404	6360	7004
She burns the food	18.18	11.04	4.28	-76.46	***	6760	6702	7044
She does not obey elders	61.44	45.75	22.98	-62.60	***	6823	6697	7045

Continued.

Percent of households for which assistance was sought following an incident								
All	14.17	12.34	7.93	-44.04	**	*1637*	*837*	*597*
Region								
Coast	14.56	19.99	11.63	-20.12		*353*	*296*	*192*
Haor	11.27	17.84	9.89	-12.24		*349*	*183*	*85*
Mid Char	23.10	0.50	5.77	-75.02	***	*381*	*206*	*244*
North Char	13.19	11.33	7.43	-43.67		*554*	*152*	*76*
Well-being category								
Extreme poor	14.43	14.95	11.14	-22.80		*178*	*120*	*77*
Poor	14.51	11.94	6.78	-53.27	***	*1209*	*622*	*429*
Middle	‡	‡	‡	‡		*138*	*51*	*39*
Middle rich	‡	‡	‡	‡		*73*	*28*	*40*
Rich	‡	‡	‡	‡		*39*	*16*	*12*
Sex of headship								
Female	‡	‡	‡	‡		*71*	*58*	*66*
Male	13.93	11.08	6.90	-50.47	***	*1566*	*779*	*531*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
‡ Insufficient number of observations.

BY PEP/NON-PEP

Table 54. SO3 key indicators (PEP versus non-PEP)

Indicator	Non-PEP				PEP				Difference (PEP vs. non-PEP)	
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)			
Women's empowerment indicators										
Percent of women earning cash income/control over economic resources	2.59	9.03	248.65	*	5.91	20.71	250.42	*	1.77	*
Index of women's freedom of movement	7.98	10.38	30.08	*	8.06	10.49	30.15	*	0.07	
Index for freedom from patriarchal beliefs among women	1.56	2.03	30.13	*	1.55	1.90	22.58	*	-7.55	*
Decision making score for women	2.30	2.80	21.74	*	2.28	2.85	25.00	*	3.26	
Domestic violence indicators									0.0	
Percent of households in which a female member was yelled at or struck during last year	21.80	5.80	-73.39	*	28.26	7.30	-74.17	*	-0.77	
Percent of households for which assistance was sought following an incident	9.09	11.74	29.15		14.50	7.67	-47.10	*	-76.26	

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.

BY MALE/FEMALE HHH

Table 55. SO3 key indicators, by sex of household head

Indicator	Male headed households				Female headed households				Difference (Female vs. male)	
	Base-line	End-line	Percent difference (Endline - Baseline)		Base-line	End-line	Percent difference (Endline - Baseline)			
Women's empowerment indicators										
Percent of women earning cash income/control over economic resources	3.99	17.57	340.35	*	16.38	31.87	94.57	*	-245.78	*
Index of women's freedom of movement	7.89	10.44	32.32	*	9.11	10.72	17.67	*	-14.65	*
Index for freedom from patriarchal beliefs among women	1.54	1.93	25.32	*	1.60	1.83	14.38	*	-10.95	*
Decision making score for women	2.16	2.73	26.39	*	3.2	3.5	10.73	*	-15.66	*

Continued.

Domestic violence indicators									
Percent of households in which a female member was yelled at or struck during last year	30.73	7.91	-74.26	*	7.84	3.26	-58.42	*	15.84
Percent of households for which assistance was sought following an incident	13.93	6.90	-50.47	*	20.22	21.37	5.69		56.15

Note: Stars indicate different in the endline-baseline (percent) difference is statistically significant at the 5% level.

SO4 Tables

Note: Baseline and midline values were changed due to a coding error.

IR 4.1 (no outcome indicators)

IR 4.2

Table 56. Utilization of services, by region, well-being category, program approach and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)	Significance level	Number of observations		
						Baseline	Midterm	Endline
Average number of services utilized								
All households	5.3	6.8	8.4	58.1	***	*7,085*	*6,916*	*7,148*
PEP households	5.2	6.8	8.3	59.4	***	*5,765*	*5,672*	*5,844*
Region								
Coast	5.1	6.5	6.6	28.5	***	*1,885*	*1,852*	*1,907*
Haor	5.2	7.0	7.9	54.2	***	*1,672*	*1,701*	*1,689*
Mid Char	5.8	7.2	8.8	52.6	***	*1,798*	*1,745*	*1,652*
North Char	5.2	6.5	8.8	69.9	***	*1,730*	*1,618*	*1,900*
Well-being category								
Extreme poor	4.5	6.0	7.4	65.2	***	*1,195*	*1,237*	*1,333*
Poor	5.4	7.0	8.6	59.4	***	*4,566*	*4,435*	*4,511*
Middle	6.2	6.8	9.2	49.9	***	*638*	*599*	*577*
Middle rich	6.2	7.1	9.0	45.2	***	*428*	*409*	*452*
Rich	6.5	7.2	9.1	40.8	***	*252*	*235*	*274*
Program approach								
MCHN/PEP	5.2	6.9	8.3	59.4	***	*2,888*	*2,766*	*2,945*
PM2A	5.6	6.7	8.7	54.6	***	*4,197*	*4,150*	*4,203*
Sex of headship								
Female	3.6	5.1	5.8	61.8	***	*957*	*1,009*	*5,927*
Male	5.5	7.1	8.8	59.2	***	*6,128*	*5,907*	*1,221*

Continued.

Percent of households utilizing various services [a/]								
Primary Health Care Services	85.7	86.4	92.6	8.0	***	*6,344*	*6,718*	6,815
Union Parishad	75.2	87.8	86.6	15.1	***	*6,926*	*6,880*	7,031
Gov. Family Planning	73.6	83.4	75.9	3.2		*6,167*	*6,555*	6,686
Family Planning Services	73.3	80.5	75.8	3.5		*6,378*	*6,887*	6,856
Grammo Shalish	64.0	65.5	71.9	12.4	***	*6,439*	*6,815*	6,792
Gov. Land Office	53.3	52.0	66.7	25.3	***	*3,689*	*5,367*	5,655
Gov. Immunization Services	69.4	74.3	65.9	-5.1	*	*6,591*	*6,838*	6,966
Dept. of Livestock	23.6	30.7	62.8	166.6	***	*1,158*	*2,582*	4,652
Dept. of Ag Extension	22.5	40.0	61.5	172.7	***	*911*	*3,614*	5,292
BADC Seed Department	33.7	34.2	59.1	75.7	***	*679*	*1,920*	3,910
Primary School	56.4	59.0	58.7	4.1		*6,994*	*6,883*	7,066
Dept. of Social Services	24.4	26.3	55.5	127.3	***	*683*	*1,703*	4,331
Dept. of Women's Affairs	18.9	24.8	54.4	188.1	***	*596*	*1,270*	4,032
Dept. of Cooperatives	19.3	30.7	39.0	102.0	***	*445*	*688*	2,945
Dept. of Fisheries	11.4	22.9	35.5	210.6	***	*610*	*2,498*	4,155
Dept. of Youth Development	15.9	19.4	34.0	114.3	***	*434*	*904*	3,019
Pre-School	32.0	35.0	33.4	4.6		*5,795*	*6,667*	6,591

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
a/ Calculated only for households for which each service is available.

Table 57. Utilization of safety nets, by region, well-being category, program approach and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)	Significance level	Number of observations		
						Baseline	Midterm	Endline
Average number of safety nets engaged in (out of 11) [a/]								
All households	0.2	0.4	0.6	255.7	***	*7,085*	*6,916*	*7,148*
PEP households	0.2	0.4	0.7	216.2	***	*5,765*	*5,672*	*5,844*
Region								
Coast	0.1	0.3	0.5	455.1	***	*1,885*	*1,852*	1,907
Haor	0.1	0.4	0.6	386.6	***	*1,672*	*1,701*	1,689
Mid Char	0.2	0.3	0.4	94.3	***	*1,798*	*1,745*	1,652
North Char	0.2	0.5	0.8	233.1	***	*1,730*	*1,618*	1,900
Well-being category								
Extreme poor	0.3	0.5	0.8	188.7	***	*1,195*	*1,237*	1,333
Poor	0.2	0.4	0.6	282.4	***	*4,566*	*4,435*	4,511
Middle	0.1	0.2	0.3	189.4	**	*638*	*599*	577
Middle rich	0.0	0.1	0.2	436.2	**	*428*	*409*	452
Rich	0.1	0.1	0.0	-50.0		*252*	*235*	274
Program approach								
MCHN/PEP	0.2	0.4	0.7	260.9	***	*2,888*	*2,766*	2,945
PM2A	0.1	0.3	0.5	229.5	***	*4,197*	*4,150*	4,203
Sex of headship								
Female	0.3	0.5	0.9	231.7	***	*957*	*1,009*	5,927
Male	0.2	0.4	0.6	257.0	***	*6,128*	*5,907*	*1,221*

Continued.

Percent of households engaged in various safety nets								
SHOUHARDO II[b/]	b/	b/	75.5	--	--	--	--	7,146
Government VGF	4.0	13.3	39.6	879.0	***	7,085	6,916	7,146
Aged allowance	5.2	7.8	8.0	52.7	***	7,085	6,916	7,146
Government VGD	4.0	6.0	6.3	57.8	**	7,085	6,916	7,146
40 days work	a/	4.6	4.0	--	--	--	6,916	7,146
Widow allowance	2.3	2.5	2.8	--		7,085	6,916	7,146
100 days work	1.9	0.8	1.7	-7.4		7,085	6,916	7,146
Govt. cash-for-work	0.5	0.7	1.4	167.1	***	7,085	6,916	7,146
Non-Govt. cash-for-work	0.3	0.5	1.0	220.4	***	7,085	6,916	7,146
Self-help group[b/]	b/	b/	0.9	--	--	--	--	7,146
Comm. based savings group	0.1	0.8	0.9	1690.4	***	7,085	6,916	7,146
Other	0.9	3.1	0.8	-5.9		7,085	6,916	7,146
Maternal allowance	a/	0.5	0.7	--	--	--	6,916	7,146
Non-Govt. food-for-work	0.4	0.7	0.6	32.0		7,085	6,916	7,146
Disability allowance	2.2	2.5	0.5	-77.5		7,085	6,916	7,146

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

a/ The midterm survey included two additional safety nets not in the baseline: widow allowance and 40 days of work.
b/ The end line survey included two safety nets, SHOUHARDO II and self-help groups, neither of which was in baseline or midterm.

Table 58. Utilization of common property resources by region, well-being category, program approach and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)	Significance level	Number of observations		
						Baseline	Midterm	Endline
Average number of common property resources utilized (out of 12)								
All households	0.75	1.05	1.84	146.3	***	7,085	6,916	7,148
PEP households	0.75	1.06	1.86	148.0		5,765	5,672	5,844
Region								
Coast	1.03	1.50	1.78	73.8	***	1,885	1,852	1,907
Haor	0.37	1.14	1.83	396.1	***	1,672	1,701	1,689
Mid Char	1.39	1.33	1.88	35.6	***	1,798	1,745	1,652
North Char	0.82	0.76	1.84	125.4	***	1,730	1,618	1,900
Well-being category								
Extreme poor	0.64	1.06	1.79	177.7	***	1,195	1,237	1,333
Poor	0.77	1.05	1.88	145.9	***	4,566	4,435	4,511
Middle	0.91	1.00	1.76	92.6	***	638	599	577
Middle rich	0.80	1.02	1.55	93.6	***	428	409	452
Rich	0.71	1.25	1.47	107.6	***	252	235	274
Program approach								
MCHN/PEP	0.76	1.05	1.86	146.3	***	2,888	2,766	2,945
PM2A	0.72	1.08	1.76	145.7	***	4,197	4,150	4,203
Sex of headship								
Female	0.59	0.73	1.39	134.7	***	957	1,009	1,221
Male	0.77	1.11	1.92	149.5	***	6,128	5,907	5,927

Continued.

Percent of households using various resources [a/] (type of common property)								
River/Canal	44.6	48.8	67.9	52.2	***	*4,152*	*5,365*	*5,414*
Beel/Haor	41.5	42.5	63.4	52.9		*2,813*	*4,062*	*3640*
Forest land	34.3	45.3	61.9	80.4	***	*274*	*273*	*1,034*
Grazing Land	32.5	34.0	59.4	83.0		*700*	*1,302*	*1,900*
Hills	42.7	51.7	50.8	19.1		*391*	*358*	*1,549*
Roadside Sloping	23.2	19.7	46.0	98.6	***	*2,782*	*4,160*	*5,780*
CBO Water Body	12.2	25.7	45.1	271.4	***	*275*	*282*	*1,012*
Embankments	32.8	27.5	42.1	28.3	*	*2,002*	*2,152*	*1,985*
Khas Pond	17.7	13.4	32.6	84.8	***	*596*	*1,016*	*1,098*
Khas Land	21.8	15.9	31.8	46.2	***	*1,340*	*2,532*	*2,448*
Railway Grounds	11.9	19.0	29.7	148.8	*	*370*	*670*	*280*
Other	‡	‡	‡	‡	‡	*39*	*141*	*296*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.
a/ Calculated only for households for which each common property is available.

‡ Insufficient number of observations.

SO5 Tables

Table 59. Households sold assets to meet urgent household needs and taka value of distress sales, by region, well-being category, program approach and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)	Significance level	Number of observations		
						Baseline	Midterm	Endline
Percent of households distress selling								
All households	10.0	10.1	9.8	-1.5		*649*	*689*	*638*
PEP households	9.6	9.5	9.8	1.7		*473*	*505*	*507*
Region								
Coast	6.9	9.2	7.9	14.0		*131*	*161*	*145*
Haor	8.6	9.7	12.6	46.2		*140*	*190*	*200*
Mid Char	10.9	6.3	9.5	-12.9		*184*	*115*	*146*
North Char	11.4	12.5	7.2	-36.8	**	*194*	*223*	*147*
Well-being category								
Extreme poor	8.5	7.4	8.6	1.1		*76*	*96*	*114*
Poor	9.9	10.1	10.2	2.7		*397*	*409*	*393*
Middle	11.8	14.1	9.7	-18.0		*67*	*79*	*54*
Middle rich	14.5	19.2	9.8	-32.2		*61*	*66*	*40*
Rich	20.3	18.5	14.2	-30.0		*47*	*39*	*37*
Program approach								
MCHN/PEP (PEP only)	10.2	9.6	10.0	-1.7		*274*	*262*	*277*
PM2A	9.4	11.8	9.3	-1.2		*375*	*427*	*361*
Sex of headship								
Female	8.5	9.0	7.8	-8.3		*58*	*87*	*85*
Male	10.2	10.3	10.2	0.0		*591*	*602*	*553*

Continued.

2010 taka value of household assets sold to meet urgent household need [a/]								
All households	19,979	21,304	16,231	46.0		649	689	637
PEP households	17,132	18,512	12,559	-26.7		473	505	506
Region								
Coast	34,427	26,207	19,453	-43.5		131	161	145
Haor	30,559	30,522	13,446	-56.0	**	140	190	200
Mid Char	14,200	21,423	17,861	25.8		184	115	146
North Char	13,392	12,210	20,202	50.9		194	223	146
Well-being category								
Extreme poor	15,360	13,038	12,930	-15.8		76	96	114
Poor	17,546	19,581	12,451	-29.0		397	409	392
Middle	25,488	32,583	38,664	51.7		67	79	54
Middle rich	40,555	47,240	42,270	4.2		61	66	40
Rich	64,427	42,609	93,430	45.0		47	39	37
Program approach								
MCHN/PEP (PEP only)	14,706	19,511	12,277	-16.5		274	262	276
PM2A	38,201	25,994	30,544	-20.0		375	427	361
Sex of headship								
Female	6,462	16,535	8,351	29.2		591	602	552
Male	21,735	21,981	17,346	-20.2		58	87	85

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Note: Two extreme cases (more than 4 times greater than the next largest value) of value of assets sold were excluded from the analysis as outliers.

a/ Includes only households reporting sale of assets.

Table 60. Information on natural disasters collected from endline survey respondents, by region, well-being category, program approach and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)	Significance level	Number of observations		
						Baseline	Midterm	Endline
Percent of households that experienced any disaster in the last 12 months								
All households	64.2	62.3	74.9	16.6	***	*7,085*	*6,916*	*7,106*
PEP households	65.0	62.4	74.9	15.2	***	*5,694*	*5,644*	*5,806*
Region								
Coast	95.0	75.2	15.6	-83.6	***	*1,885*	*1,852*	1,881
Haor	46.9	44.5	74.1	58.0	***	*1,672*	*1,701*	1,686
Mid Char	73.3	77.6	79.9	9.0		*1,798*	*1,745*	1,647
North Char	75.0	73.9	80.3	7.0		*1,730*	*1,618*	1,892
Well-being category								
Extreme poor	71.9	64.4	75.9	5.6		*1,195*	*1,237*	*1,324*
Poor	62.1	62	74.5	20.0		*4,566*	*4,435*	*4,482*
Middle	68.3	61.2	73.1	7.1		*638*	*599*	*575*
Middle rich	62.1	58.9	69.0	11.1		*428*	*409*	*450*
Rich	61.5	59.9	72.3	17.6		*252*	*235*	*274*
Program approach								
MCHN/PEP (PEP only)	64.0	62.0	76.7	19.8	***	*2,888*	*2,766*	*2,917*
PM2A	65.1	63.4	67.7	4.0		*4,197*	*4,150*	*4,189*
Sex of headship								
Female	65.8	61.3	76.7	16.5	***	*957*	*1,009*	*1,212*
Male	64.0	62.5	67.7	5.8		*6,128*	*5,907*	*5,894*
Percent of households experiencing various types of disasters (types of disasters)								
None	34.8	37.3	25.4	(26.9)	***	*7,085*	*6,916*	*7,106*
Floods	37.8	38.9	56.6	49.9	***	*7,085*	*6,916*	*7,106*
Heavy Rains	23.1	23.2	23.8	2.9		*7,085*	*6,916*	*7,106*
Wind Storms	27.8	18.8	23.1	(16.7)	***	*7,085*	*6,916*	*7,106*
Drought			6.7					*7,106*
Hail			3.3					*7,106*
Erosion	2.4	3.4	2.5	4.1	***	*7,085*	*6,916*	*7,106*
Cold Wave	4.4	2.3	1.7	(61.3)	***	*7,085*	*6,916*	*7,106*
Earthquake	7.9	9.2	1.3	(83.4)	*	*7,085*	*6,916*	*7,106*
Wildfire	3.3	4.1	1.2	(64.2)	***	*7,085*	*6,916*	*7,106*
Hurricane	0.1	0.1	0.2	136.9	***	*7,085*	*6,916*	*7,106*
Cyclone	0.3	0.2	0.2	(27.6)	*	*7,085*	*6,916*	*7,106*
Other	0.9	3	0.0	(97.0)	--	*7,085*	*6,916*	*7,106*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.

Table 61. Information on natural disasters collected from endline survey respondents (continued), by region, well-being category, program approach and sex of household head

Indicator	Baseline	Midterm	Endline	Percent Difference (Endline-Baseline)	Significance level	Number of observations		
						Baseline	Midterm	Endline
Mean number of disasters experienced								
All households	1.1	1.0	1.2	11.7	*	*7,085*	*6,916*	*7,148*
PEP households	1.1	1.0	1.2	11.9	*	*5,765*	*5,672*	5,844
Region								
Coast	2.0	1.0	0.2	-90.5	***	*1,885*	*1,852*	*1,907*
Haor	0.7	0.6	1.2	62.5	***	*1,672*	*1,701*	*1,689*
Mid Char	1.2	1.3	1.4	18.4		*1,798*	*1,745*	*1,652*
North Char	1.3	1.4	1.3	-1.7		*1,730*	*1,618*	*1,900*
Well-being category								
Extreme poor	1.2	1.1	1.1	-6.0		*1,195*	*1,237*	1,333
Poor	1.1	1.0	1.0	-3.5	**	*4,566*	*4,435*	4,511
Middle	1.1	1.0	1.0	-9.2		*638*	*599*	577
Middle rich	1.0	0.9	0.9	-9.6		*428*	*409*	452
Rich	1.1	1.0	1.0	-8.8		*252*	*235*	274
Program approach								
MCHN/PEP (PEP only)	1.1	1.0	1.3	16.4	*	*2,888*	*2,766*	*2,945*
PM2A	1.1	1.0	1.0	-5.0		*4,197*	*4,150*	*4,203*
Sex of headship								
Female	1.1	1.0	1.1	5.6		*957*	*1,009*	*5,927*
Male	1.1	1.0	1.2	13.0	*	*6,128*	*5,907*	*1,221*

Continued.

Percent of households citing perceived mitigation measures that could reduce the impact of future disasters (types of mitigation measures)								
None	47.1	41.2	6.7	(85.9)	***	*7,085*	*6,916*	*7,148*
Structural Improvement to Home	3.5	3.3	48.2	1,277.1	***	*7,085*	*6,916*	*7,148*
Improvement to infrastructure	1.6	1.5	15.9	894.8	***	*7,085*	*6,916*	*7,148*
Community disaster response plan	3.1	2.5	5.8	87.8	***	*7,085*	*6,916*	*7,148*
Food stocks	1.5	1.6	38.5	2,464.6	***	*7,085*	*6,916*	*7,148*
Water stocks	0.1	0.2	17.6	17,538.0	***	*7,085*	*6,916*	*7,148*
Medical supplies stocks	0	0	7.1	-	***	*7,085*	*6,916*	*7,148*
First aid training	0.1	0.2	2.4	2,327.3	***	*7,085*	*6,916*	*7,148*
Increased collaboration w/ neighbors	2.2	0.8	6.3	188.1	***	*7,085*	*6,916*	*7,148*
Increased collaboration w/ communities	0.5	0.4	4.4	770.4	***	*7,085*	*6,916*	*7,148*
Better forecasting	0.6	0.7	6.2	932.9	***	*7,085*	*6,916*	*7,148*
Earlier/better warning	0.6	1.6	3.9	542.8	***	*7,085*	*6,916*	*7,148*
Increased collaboration w/ local gov't	0.4	0.2	1.7	327.4	***	*7,085*	*6,916*	*7,148*
Diversified income	0.1	0.1	1.6	1,523.2	***	*7,085*	*6,916*	*7,148*
Evacuation routes/plans	0	0.2	3.4	-	***	*7,085*	*6,916*	*7,148*
Improved modes of communication	0	0.1	0.9	-	***	*7,085*	*6,916*	*7,148*
Other	0.3	0.3	1.8	486.3	***	*7,085*	*6,916*	*7,148*

Note: Stars indicate difference is statistically significant at the 10% (*), 5%(**) or 1%(***) levels.