SHOUHARDO II Final Quantitative Performance Evaluation

SHOUHARDO II Multi-Year Assistance Program

May 2015

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Acronyms

ANC	Antenatal Care
CAP	Community Action Plan
CBO	Community Based Organization
CDRM	Climate and Disaster Risk Management
CHV	Community Health Volunteer
C-IMCI	Community-Based Integrated Management of Childhood Illnesses
CMAM	Community Based Management of Acute Malnutrition
COG	Core Occupational Group
CVCA	Climate Vulnerability and Capacity Analysis
DRR	Disaster Risk Reduction
ECCD	Early Childhood Care and Development
EKATA	Empowerment Knowledge and Transformative Action
EPI	Expanded Program on Immunization
FFP	Food For Peace
GMP	Growth Monitoring and Promotion
GOB	Government of Bangladesh
IPTT	Indicator Performance Tracking Table
IR	Intermediate Result
IYCF	Infant and Young Child Feeding
LoA	Life of Award
M&E	Monitoring and Evaluation
MCHN	Mother Child Health and Nutrition
MDG	Millennium Development Goal
MoH&FW	Ministry of Health and Family Welfare
NBD	Nation Building Department
NGO	Non-Governmental Organization
PACC	Program Advisory and Coordination Committee
PEP	Poor and Extreme Poor
PM2A	Prevention of Malnutrition among Children under 2 Years of Age
PNGO	Partner Non-Governmental Organization
QPE	Quantitative Performance Evaluation
RTC	Randomized Control Trial
SBTB	School-based Teen Brigades
SO	Strategic Objective
TK	Bangladesh Taka
UDMC	Union Disaster Management Committee
UP	Union Parishad
USAID	United States Agency for International Development

USD	United States Dollar
VAW	Violence Against Women
VGF	Vulnerable Group Feeding
VDC	Village Development Committees

Executive Summary

Despite progress on combating poverty and improving a number of other human development indicators, Bangladesh remained ranked 142nd out of 187 countries in the 2014 Human Development Index (HDI).[1] Similarly, it ranked 57th out of 76 countries listed in the 2014 Global Hunger Index (GHI), placing the country in the category of "serious" levels of food insecurity.[2] Although Bangladesh has meet the Millennium Development Goals (MGDs) for prevalence of undernourishment, there are still some 25 million people undernourished and progress has been slowing since the mid-2000s due to the inadequate consumption of the minimum daily-recommended amount of food and/or intake of high-value food products. In addition to extreme poverty and food insecurity, vulnerable populations throughout the country cope with limited access to education and health services, widespread gender inequity, and repeated exposure to natural disasters and climate change. Despite improvement in economic indicators and progress toward the MGDs over the previous decade, undernourishment especially among women and children remains a major impediment to further development of the country.[3]

It was within this context that CARE Bangladesh and Partner NGOs first designed and implemented the SHOUHARDO Development Assistance Program (DAP) from 2005-2010.[4] The final evaluation of the first phase confirmed that it was largely effective in addressing not only the availability, access and utilization issues that lead to food insecurity, but also the underlying factors that contribute to vulnerability such as a lack of social participation and disempowerment that prevent people from realizing their full potential to lead healthy and productive lives.

The second phase, SHOUHARDO II, implemented from June 2010 to May 2011 in 11 of the poorest and most marginalized districts of the country[5], builds upon the successes of the initial SHOUHRDO program by maintaining a strong emphasis on improving livelihood security, food security, nutrition, poor and extreme poor (PEP), and women's empowerment at the community level, while adding components aimed at strengthening local governance and improving adaptation to climate change. CARE Bangladesh implemented SHOUHARDO II with the assistance of 16 NGOs and 4 Technical Partners.

Objectives of the Quantitative Performance Evaluation (QPE):

The primary objectives of the QPE were to:

- Assess the overall impact of the project including effectiveness of program strategies and implementation of interventions;
- Compare results of the two programming approaches (MCHN/PEP and PM2A) implemented separately in randomly selected sites;

[1] UNDP. 2014. Human Development Report 2014: Sustaining human progress: Reducing vulnerabilities and building resilience. New York, UNDP.

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

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

[4] SHOUHARDO is an acronym that stands for *Strengthening Household Ability to Respond to Development Opportunities*. SHOUHARDO is also a Bengali word for "amity."

[5] Kurigram, Nilphamari, Rangpur, Dinajpur, Bogra, Sirajganj, Pabna, Mymensingh, Jamalpur, Sunamganj, Cox's Bazar.

- Evaluate progress of SHOUHARDO II towards its objectives.

Methodology

In order to meet these objectives, the QPE team measured the program's "population-based" performance on key indicators with comparisons to baseline and midterm survey results. To ensure comparability and the validity of findings in the baseline and midterm, the quantitative methodology utilized the same household survey instrument and sampling frame. In addition, two levels of stratification were employed. The first was the division of SHOUHARDO II impact population into four regions – Coast (Cox's Bazar), Haor (Mymensingh), Mid Char (Sirajganj) and North Char(Rangpur) – reflecting the distinct geographic areas where the program is operational. The second level of stratification was into the different service delivery strategies termed MCHN/PEP and PM2A. MCHN services across the entire program were provided under either one or the other of these two approaches.

The findings and analysis contained in the full QPE report are intended to draw lessons learned for the selection, design and implementation of future programs in Bangladesh. CARE will also make extensive use of the findings from the survey to document and disseminate best practices and lessons learned. The discussion that follows is a brief summary of QPE results that directly corresponds to the objectives of the review as laid out in the Terms of Reference.

A. Effectiveness of strategies and implementation of interventions

The overall goal of the SHOUHARDO II program is to:

> *"Transform the lives of 370,000 Poor and Extreme Poor (PEP) households (HH) in 11 of the poorest and marginalized districts in Bangladesh by reducing their vulnerability to food insecurity."*

In order to achieve this goal, CARE-Bangladesh and partner collaborations have established the following Strategic Objectives (SO) and Intermediate Results (IR):

SO1: "Availability of" and "access to" nutritious foods enhanced and protected for 370,000 PEP households.

IR1.1: Improved and diversified agriculture systems developed and linked with private and public services.

IR1.2: Increased household income among PEP in the target communities.

SO2: Improved health, hygiene and nutrition status of 281,000 children under 2 years of age.

IR2.1: "Access to" and "utilization of" health and nutrition services improved to care givers of children under 2 years of age.

IR2.2: Care givers of children under 2 adopt improved health, hygiene and nutrition behavior and caring practices.

SO3: PEP women and adolescent girls empowered in their families, communities and Union Parishad.

IR3.1: Influence of PEP women and adolescent girls in decision making increased.

IR3.2: Local support systems strengthened to reduce Violence Against Women (VAW).

SO4: Local elected bodies and government service providers responsiveness and accountability to the

PEP increased.

IR4.1: Nation Building Departments (NBD) and Union Parishads proactively work to address the needs of the PEP, especially women.

IR 4.2: PEP access to entitlements and services increased, including safety nets and natural resources.

SO5: Targeted community members and government institutions are better prepared for, mitigate, and respond to disasters and adapt to climate change.

IR5.1: Disaster contingency systems in place and functioning.

IR5.2: Influence local and national humanitarian assistance initiatives.

SHOUHARDO II prioritized community-based interventions and placed considerable emphasis on the capacity of Village Development Committees (VDCs) to not only assess local factors constraining food security but to also oversee program efforts to address them. In particular VDC, with program staff, were charged with coordinating the efforts of four thematic groups in target communities. They included:

- *Core Occupational Groups* aimed at increases in food production, and/or income (targeting both men and women);
- *Growth Monitoring and Promotion (GMP) Groups* aimed at improved nutrition and health status of children under 5 years of age;
- *Early Childhood Community Development (ECCD) Groups* for mothers and children between 0 and 8 years of age); and
- *Empowerment, Knowledge and Transformative Action (EKATA) Groups* focused on educating women and girls on empowerment and protection.

B. Comparison between implemented program designs

A critical new element of SHOUHARDO II's efforts to improve child nutrition was the trial of the Prevention of Malnutrition in Children under 2 Approach – (PM2A). Under PM2A all pregnant women, mothers of children 0-23 months and children under 2, regardless of nutritional and economic status received a monthly food ration, in addition to a package of health promotion and preventative and curative health services. Meanwhile, SHOUHARDO II continued to implement a more targeted approach to improving maternal and child health and nutrition (MCHN), under which food rations are only provided to pregnant women, mothers and children in the PEP well-being categories. The comparison of nutrition outcomes under these approaches was intended to provide insight into the relative costs and benefits of each in the context of Bangladesh.

C. Progress of the SHOUHARDO II Program towards its objectives

Overall, SHOUHARDO II has made significant progress toward each of its SOs. However, a number of targets were not met by the close of the program despite gains made between baseline and endline. The table below provides comparable quantitative information on key impact and outcome indicators collected during the baseline, midterm, and endline surveys. It shows improvements across a number of indicators, especially for household food security and child nutrition under SO1 and SO2. Yet, despite

substantial gains, indicators for hygiene and sanitation, child immunizations, and women's empowerment fell significantly short of meeting performance targets. Note that there were no impact/outcome indicators in the SHOUHARDO II Indicator Performance Tracking Table (IPTT) under SO4. Also, the change in taka value of distress sales from baseline to endline shown in SO5 was not statistically significant.

In the following table and throughout the full report, all statistical significance compares endline values to baseline values. If an endline value in a figure has an asterisk next to it, this indicates that endline value is statistically significant compared to the baseline value of that indicator (not to the Life of Award (LoA) target).[6]

Progress toward impact/outcome indicators[7]

Indicator	Target	Base-line	Mid-term	End-line	Difference (Endline-Baseline)	
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**	4.8	5.9	8.7	3.9	*
Average number of months of adequate household food provisioning	**8.0**	5.9	9.9	11.0	5.1	*
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**	42.2	34.4	35.9	-6.3	*
Females	**34.6**	37.2	34.9	36.4	-0.8	
Males	**42.2**	46.7	33.4	34.3	-12.4	*
Percent of stunted children under five years of age (6-59 months)	**55.1**	61.7	52.7	50.4	-11.3	*
Females	**51.2**	56.5	52.2	47.8	-8.7	*
Males	**58.9**	66.1	53.2	49.7	-16.4	*
Percent of children under age two who had diarrhea in the prior two weeks	**10.3**	13.8	11.6	8.1	-5.7	
Percent of children underweight under the age of 2 years	**31.1**	33.2	32.1	29.5	-3.7	
Percent of children immunized against 8 diseases by 12 months of age	**82.0**	58.6	74.9	73.0	14.4	*
Percent of pregnant and lactating women taking iron supplements in last 7 days	**45.0**	15.2	29.8	52.0	36.8	*
Prevalence of exclusive breast feeding of children under 6 months	**66.2**	64.1	66.4	62.2	-1.9	
Percent of mothers who feel it is important to wash hands at five critical times[£]	**35.0**	9.8	10.9	29.8	20.0	*
Number of people in target areas with improved access to sanitation facilities	**60.0**	20.3	32.4	52.8	32.5	*

[6] Refer to Annex 5 for a comparison of endline results to LoA targets and for 95% confidence intervals of indicators .

[7] Baseline and midterm numbers in this table were computed by TANGO during endline analysis. Some of these numbers differ from the baseline and midterm numbers in IPTT indicator table. The IPTT indicator is included as an annex to this report, with original and revised baseline numbers included.

Percent of children 6–23 months of age who receive a minimum acceptable diet	**20.0**	8.7	17.5	47.9	39.2	*
Number of people in target areas with improved access to drinking water supply	**80.0**	59.5	76.3	77.6	30.3	*
SO 3: PEP women and adolescent girls empowered in their families, communities and Union Parishad						
Percent of women control over economic resources	**25.0**	5.7	11.3	19.8	247.4	*
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	**7.0**	9.6	9.5	9.8	2.1	
Taka value of distress sale (2010)	**15000**	19979	21304	16,321	46.0	

Note: Stars (*) indicate difference is statistically significant at the 10% (*) 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.

Conclusions

1. In SO1, SO2, and SO3, there have been strong improvements in all impact/outcome indicators from baseline to endline. However, it should be noted that for some indicators, improvements were largely seen from baseline to midterm, and stabilized from midterm to endline, especially those under SO2. However most indicators showed a steady trend from baseline to midterm to endline.
2. These improvements may be explained, at least in part, by changes in behaviors of households (adoption of improved agricultural practices, improved access to markets and agricultural services, adoption of child feeding practices, changes in attitudes about violence to women, etc.).
3. The household-level indicators for SO5 showed no statistically significant change from baseline to endline survey rounds. However, these indicators cannot capture the main short-term impacts of the interventions of these SOs, which are directed toward improving the performance of community and local government stakeholders.
4. Direct comparisons of results between the two SO2 programming approaches indicate that the PM2A programming approach had greater impact on nutritional status of children than the targeted MCHN/PEP approach. However, several factors other than the different programming approaches may explain the differences between these two groups. In particular, there significant differences in characteristics of households between the two groups that may explain the differences in nutritional outcomes. In addition, there is evidence that households in the PM2A group had greater access to all project services, not just access to food rations. In particular, a greater proportion of households in the PM2A group participated in EKATA groups, and their overall higher proportion of non-poor households than compared to MCHN/PEP villages. Given these circumstances, no strong conclusions can be drawn regarding the relative impacts of the PM2A and MCHN/PEP approaches on nutritional status. It must be emphasized that although there are no clear differences in nutritional benefits, the relative cost of the PM2A is substantially higher than the targeted MCHN/PEP approach.

Recommendations for further research

The findings from the quantitative performance evaluation survey raised a number of issues that should be further pursued in qualitative evaluation of SHOUHARDO II. Generally, these questions are around understanding why project outcome and impact indicators did or did not change, and how project interventions may have affected the changes in these indicators. Some more specific questions that were raised from the quantitative findings include the following:

- The Haor Region stands out compared to other regions because of smaller improvements or negative outcomes. Qualitative inquiry should follow up to find explanations for the differences in patterns of changes across project regions.
- Many indicators – especially impact-level measures – progressed more between baseline and midterm than from midterm to endline. Can this be explained by program implementation, household factors, or other factors?
- Was there a significant difference in impact-level indicators between participants and non-participants in project activities? Note that CARE has commissioned both qualitative and quantitative impact evaluation studies to address this question.
- Adoption of improved technologies increased substantially for both SO1 participants and non-participants. Further research is needed to understand the causes of this adoption, and the role that SHOUHARDO II interventions have played in promoting the observed increases in adoption.

1. Introduction

The Strengthening Household Ability to Respond to Development Opportunities (SHOUHARDO) II Program was implemented by CARE Bangladesh from June 2010—September 2015. The project is funded by the United States Agency for International Development (USAID) and the Government of Bangladesh (GOB) at nearly US$130 million,[8] making SHOUHARDO II one of the largest non-emergency food security programs in the world. The program extended across four regions (North Char, Mid-Char, Haor and Coastal), 11 districts, 30 Upazilas and 172 Unions to reach 370,000 households. The five-year Food for Peace (FFP) Title II Multi-Year Assistance Program (MYAP) advanced the model from the previous SHOUHARDO Program (2005-09) that successfully reduced child malnutrition, and strengthened livelihoods and women's empowerment.

Technical Assistance to Non-Governmental Organizations (TANGO) International, Inc. in collaboration with Dhaka-based Mitra and Associates conducted the population-based quantitative performance evaluation survey that is the topic of this report from 17 November through 12 December 2014. The primary purpose of the endline survey was to collect and compare data on key project indicators with the baseline (conducted in December 2010) and midterm (conducted in December 2012) data to measure progress towards SHOUHARDO II's strategic objectives and intermediate results. The primary audiences for the findings are CARE, USAID and program partners, who will draw on the lessons learned to inform future programming. The Government of Bangladesh (GOB) is a secondary user of the findings.

This report describes the survey methodology and process, assesses progress made since the baseline and midterm studies, examines key successes and challenges, and provides recommendations for improved performance. A compendium of annexes is included with this report.

1.1. Country Context

Bangladesh has made important social gains in recent years, yet as a low-income country, poverty and food insecurity remain major challenges. Bangladesh is one of the world's most densely populated countries, with a total population of approximately 159 million. Forty-three percent of the population is poor, living on less than US$ 1.25/day, and about one in five (21 percent) is severely poor. The 19 percent of the population that is above the poverty line nevertheless hovers close to impoverishment (2011).[9] Bangladesh will reach middle-income country (MIC) status in coming years, though inequality in development persists. Gross Domestic Product (US$ 150 billion in 2013) steadily increased over the past decade.[10] Bangladesh is ranked 142 out of 187 countries on the 2013 Human Development Index (HDI), just reaching the medium development category (>0.55) with a score of 0.558; however, when the HDI is adjusted for the loss of human development due to inequality in income, education and life expectancy, the value is 0.396. The sex-disaggregated HDI is 0.528 for females compared to 0.582 for males of Bangladesh.[11]

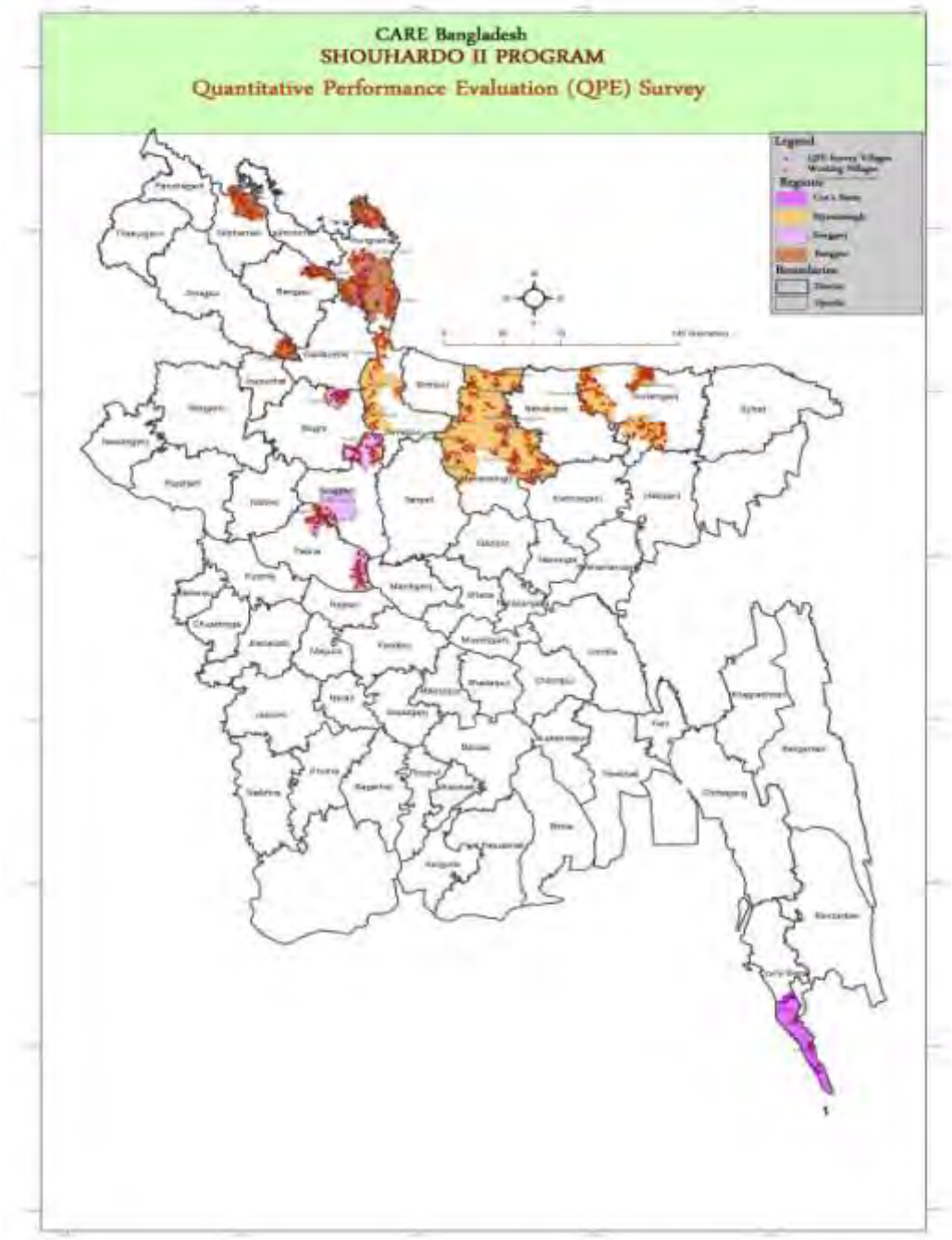
[8] Plus 287,420 MT worth of commodities for both direct distribution and monetization (80 percent).
[9] UNDP. 2013. Note: The Millennium Development Goal (MDG) target by 2015 is 35.1% below US$1 (PPP) per day.
[10] World Bank. 2014.
[11] UNDP. 2013.

The Government's long-term development strategy (2010-2021) is implemented through two medium-term development plans. This strategy focusses on poverty and income, education, nutrition, health and women's empowerment, among others,[12] which have been key areas of emphasis of the SHOUHARDO programs. Bangladesh has seen considerable improvements in universal primary education with a special focus on female education, achieving the Millennium Development Goal (MDG) in this area. School attendance for all age groups is on the rise and is currently on track to meet the MDG 2015 target. Attendance is highest at age 10 for boys and at age 11 for girls. Incomplete primary education from drop-out is a critical issue particularly for poor and ultra-poor households.[13] Bangladesh has also met the MDG targets for under-five underweight and mortality rates and is on track to meet the goal for reducing infant and maternal mortality.[14] Yet food insecurity continues to be a challenge for many households due to natural and political/economic shocks. Bangladesh is a low-lying country and increasingly vulnerable to flooding, erosion and cyclones as sea levels rise with climate change.[15] Strikes and blockades, political violence, market and food price volatility have regularly occurred, compounding these risk factors.[16]

The four operational regions of SHOUHARDO II shown in Figure 1—Coast, Haor, Mid Char and North Char—share common risk factors of high food insecurity and malnutrition rates, high natural disaster risk, remoteness, high presence of the country's most marginalized groups, low literacy, and high poverty rates. The regions are nevertheless distinct in their topography and determinants of risk. The North (Rangpur) and Mid (Sirajganj) *Chars* are riverine islands surrounded by water most of the year. They are prone to dramatic erosion and floods, which result 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 (Mymensingh), characterized by vast expanses of depressed wetlands with scattered, elevated mounds that become largely inhabitable islands during the wet season. The waterlogged areas have fish, but poor households often lack access to this source of income and/or protein, and all transport is by boat. In the dry season, the water subsides to harsh terrain that must be crossed by foot. According to the baseline and midterm studies, the most common livelihoods in these northern regions are farming and agricultural contract labor. In addition, many households reside on khas land, which by law gives first priority to the poor to access, utilize, and reside, but often sources of conflict arise with elites and organized groups. The delta-like *Coast* region (Cox's Bazar) is in the deep southeast of the country where fishing and non-agricultural labor are common occupations. 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.

[12] Government of the People's Republic of Bangladesh (Ministry of Planning, General Economics Division). 2012.
[13] NIPORT, Mitra and Associates, and ICF International. 2013. DHS 2011. (P.11, 23-25)
[14] Government of the People's Republic of Bangladesh and UNDP Bangladesh. 2014.
[15] Karmalkar, A., C. McSweeney, M. New and G. Lizcano. 2010.
[16] BBC. 2014.

Figure 1. Map of SHOUHARDO II intervention areas



1.2. Program description

CARE has been working in Bangladesh (previously East Pakistan) since 1949 and has implemented Title II programs in the country for four decades in collaboration with the GOB and local partners. The integrated design of the SHOUHARDO II program has drawn from CARE's longstanding presence, experience and commitment to Bangladesh and its mission to address both humanitarian and developmental needs with a strong focus on the most vulnerable populations. The program operated from 1 June 2010 to 31 May 2015 in the districts of Rangpur, Kurigram, Nilphamari and Dinajpur in the North Char region; Sirajganj, Bogra and Pabna districts in Mid Char; Mymensingh, Jamalpur and Sunamganj districts in Haor; and Cox's Bazar in the Coastal region.

The overall goal of the SHOUHARDO II program was to:

> *"Transform the lives of 370,000 Poor and Extreme Poor (PEP) households (HH) in 11 of the poorest and marginalized districts in Bangladesh by reducing their vulnerability to food insecurity."*

In order to achieve SHOUHARDO II's program goal, CARE partnered with 16 NGOs and in close collaboration with a dozen government ministries to achieve the following Strategic Objectives (SO) and Intermediate Results (IR):[17]

SO1: "Availability of" and "access to" nutritious foods enhanced and protected for 370,000 PEP households.

IR1.1: Improved and diversified agriculture systems developed and linked with private and public services.
IR1.2: Increased household income among PEP in the target communities.

SO2: Improved health, hygiene and nutrition status of 176,706 children under 2 years of age.[18]

IR2.1: "Access to" and "utilization of" health and nutrition services improved to care givers of children under 2 years of age.
IR2.2: Care givers of children under 2 adopt improved health, hygiene and nutrition behavior and caring practices.

SO3: PEP women and adolescent girls empowered in their families, communities and Union Parishad.

IR3.1: Influence of PEP women and adolescent girls in decision making increased.
IR3.2: Local support systems strengthened to reduce Violence Against Women (VAW).

SO4: Local elected bodies and government service providers' responsiveness and accountability to the PEP increased.

IR4.1: Nation Building Departments (NBD) and Union Parishads proactively work to address the needs of the PEP, especially women.
IR 4.2: PEP access to entitlements and services increased, including safety nets and natural resources.

SO5: Targeted community members and government institutions are better prepared for, mitigate, and respond to disasters and adapt to climate change.

[17] The internal logic will be described in more detail in each of the SO-specific sections of the report.
[18] Note: Footnote in Endline Evaluation TOR states revision to 176,706.

IR5.1: Disaster contingency systems in place and functioning.
IR5.2: Influence local and national humanitarian assistance initiatives.

1.3. SHOUHARDO II Implementation Mechanism

The program follows a standard set of procedures and guidelines to interact with participating communities and identify ways and means of transferring services and resources to beneficiaries. As with any program of this scale, the implementation mechanism is fairly consistent.

The targeted governance structure at the community level (and entry point) is the establishment of a Village Development Committee (VDC) – with elected members, including both men and women – that jointly develop a Community Action Plan (CAP) through a participatory process. Prior to developing the action plan the VDC helps facilitate the process of identifying community problems, conducting Climate Vulnerability and Capacity Analysis (CVCA) and gender analysis, and prioritization of community needs. An action plan is then drafted to address identified needs that fall within the scope of the program (e.g. shortage of food, ending violence against women, ending dowry, water, sanitation, and climate and disaster risk management (DRM) – with construction of infrastructure such as embankments, bridges, etc.). Field facilitators then work with VDCs and other specific groups in the community to develop strategies for addressing individual items on the CAP. Each VDC reviews its progress on an annual basis using results from the CVCA, gender analysis and action planning process to hold itself accountable. Once established, the VDC also helps monitor progress made by four thematic groups in the communities. These are:

- *Core Occupational Groups* (COGS) aimed at increases in food production, and/or income (targeting both men and women);
- *Growth Monitoring and Promotion (GMP) Groups* aimed at improved nutrition and health status of children under 5 years of age;
- *Early Childhood Community Development (ECCD) Groups* for mothers and children between 0 and 8 years of age); and
- *Empowerment, Knowledge and Transformative Action (EKATA) Groups* focused on educating women and girls on empowerment and protection.

Each group is facilitated by a paid volunteer recruited from within the community.[19] As such there are a total of 8,000 paid volunteers across the 1,573 SHOUHARDO II target villages, divided into four categories; 1) Community Health Volunteer (CHV), 2) EKATA, 3) ECCD volunteer, 4) Agriculture volunteer. Following training provided by SHOUHARDO II, volunteers are tasked with facilitating group sessions, counseling during courtyard sessions and home visits and referral to specific government services such as health clinics and hospitals. Each volunteer is responsible for servicing a large number of households (>250 households). Full-time employed "field facilitators" oversee a specific geographic area and provide technical support and oversight to volunteers from the four different groups. Field

[19] As an incentive volunteers receive 2,000 TK per month.

facilitators are employed by private non-governmental organizations (PNGOs) and, in areas of direct delivery, by CARE. They receive technical support from technical managers within these organizations.

The MCHN/PEP and PM2A approaches to service delivery

Project activities falling under SO2, "Improved health, hygiene and nutrition status of 176,706 children under 2 years of age" were delivered following two different approaches in order to test which is most effective at reducing child malnutrition. The first, the MCHN/PEP (Maternal and Child Health and Nutrition/PEP) approach, follows the traditional SHOUHARDO model of including only poor and extreme-poor (PEP) households as participants in MCHN activities, including food ration receipts, educational activities, and growth monitoring and promotion. Food rations are made available to pregnant PEP women, PEP women with children under two, and children under two living in PEP households. The second approach, the Preventing Malnutrition in Children Under 2 (PM2A) approach, includes as participants all pregnant women and children under two years of age in project villages, regardless of socio-economic status. Both approaches are based on the basic PM2A ideas that (a) the first "1000 days", from conception to age 24 months is the window of opportunity for preventing malnutrition; (b) efforts should be focused on the *prevention* of malnutrition rather than its cure; and (c) such prevention should take place by addressing malnutrition's three underlying causes (access to adequate food, the quality of caring practices for children and mothers, and access to health services and a healthy environment).[i] SHOUHARDO II project villages were randomly selected into the MCHN/PEP and PM2A groups, with roughly 17 percent of villages chosen to follow the PM2A approach.

1.4. Performance evaluation methodology

As with the earlier survey rounds, the purpose of the endline QPE survey is to provide statistically representative estimates of project impact and outcome level indicators that are measured at the household level. To provide statistically valid estimates of these indicators, the survey was conducted on a sufficiently large, randomly selected sample of households from within the SHOUHARDO II implementation area.

Sampling design: The sampling approach for the SHOUHARDO II household surveys was first formulated in August of 2010, prior to the baseline study. It was then reviewed by TANGO and finalized with feedback and suggestions from FANTA II and CARE Bangladesh. This agreed upon sampling approach was applied during the baseline and midterm studies. To ensure comparability, this sampling approach was also applied for the endline survey.

The methodology utilizes two levels of stratification. The first was a division of the SHOUHARDO II operational area into its four geographical regions – Coast (Cox's Bazar), Haor (Mymensingh), Mid Char (Sirajganj), and North Char (Rangpur) – reflecting the distinct geographic areas where the program is operational. The baseline and midterm reports had shown that stratification by region captures significant variation in results since these regions have distinct and different physical features and resources were spread out over large distances.

The second level of stratification is by programming approach (MCHN/PEP and PM2A) discussed above. The design was based on sampling an equal number of villages (clusters) and households for both PM2A and MCHN/PEP areas and across the four regions, that is the four geographic strata were then further stratified by programming approach to provide a total of eight stratat. For analysis, cases were weighted to account for the different proportions of sampled households drawn for the survey in relation to the total number of households in each stratum. Application of these sampling weights allowed for statistically valid comparisons between PM2A and MCHN/PEP target areas and across the four regions.

The sampling frame for the survey is a comprehensive list of all households in villages where SHOUHARDO II is operational. At the beginning of implementation, the project conducted a census of households in the project implementations area to obtain these household listings. Because the households have been randomly drawn from the sample frame, the results of the study are generalizable to all households in the SHOUHARDO II operational area. Note that villages included in the project were selected by CARE Bangladesh based on their vulnerability characteristics and therefore were not necessarily representative of the regions as a whole.

The baseline sample size was computed to be able to detect a 10 percentage point difference in stunting prevalence across sample strata. This request for statistically representative comparisons across geographic sub-groups was from the SHOUHARDO II project, and resulted in an overall sample size much larger than required by FFP. An initial assumed value of stunting prevalence of 50% was used, along with a 95 percent confidence level, 80 percent power, and a design effect of 2.0 to estimate the minimum required sample of children 6-59 months old. Using these parameters yielded a minimum sample size of 606 children 6-59 months old per stratum. Following the FANTA Sampling Guide, the required number of households to be interviewed to ensure a minimum sample of 606 6-59 month old children was estimated on the basis of proportion of the population in Bangladesh that is aged 6-59 months and the average household size. The national data (Population Census, 2001) revealed that children aged 6-59 months comprise 11.9 percent of the overall Bangladesh population and the average household size is five persons. Applying t these factors resulted in a minimum required sample [606/(0.119*5)] or 1,017 households per stratum. An additional 10 percent was added to this sample size in order to account for non-response, thus resulting in a final target sample size of 1,119 households per stratum. Applying this sample requirement across the eight cells (four regions by two areas) yielded a total target sample size of 8,952 households.

In order to achieve this target sample size, the sample design employed a cluster design of 200 X 45. A total of 50 clusters (villages) from each of the four regions (25 villages from PM2A areas and 25 villages from MCHN/PEP areas within each region) were selected using probability proportionate to size (PPS) methods. In each of the selected villages, 45 households were randomly selected, without replacement from the village sampling frames developed by the SHOUHARDO II program for all villages in the intervetion areas. Table 1 provides details of the sample by program strata.

Table 1. Target sample size by program strata

Program strata		Target # Households	Number of villages	Sample HH per Village
Region	Approach			
Coast	MCHN/PEP	1125	25	45
	PM2A	1125	25	45
Haor	MCHN/PEP	1125	25	45
	PM2A	1125	25	45
Mid Char	MCHN/PEP	1125	25	45
	PM2A	1125	25	45
North Char	MCHN/PEP	1125	25	45
	PM2A	1125	25	45
Total Sample		9000	200	9000

This same sample size was used for the endline survey in order to have comparable levels of precision of estimates between the survey rounds, and to allow comparisons across the survey rounds.

This sample size is much larger than the required minimum size to be able to detect a change of 10 percentage points in the prevalence of stunting from baseline to endline at the level of the program as a whole. The minimum sample size required per survey round is computed using the following formula:

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

where:

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

P_1 = stunting rate at baseline, 61.7% = **0.617**

P_2 = the *expected* level of stunting at endline for the program area such that the quantity (P_2 - P_1) is the size of the magnitude of change it is desired to be able to detect, SHOUHARDO II life of award (LOA) target reduction of 10 percentage points , 51.7% = **0.517**

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

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

D = Actual SHOUHARDO baseline design effect for stunting = **2.43**

N_f = Non-response factor (assuming a 10% non-response rate) = **1.10**

Based on these parameter values, the estimated minimum sample size (n) is 729 children 6-59 months old. Considering that not all households have children 6-59 months, the sample size of households must be adjusted according to the Addendum to Fanta Sampling Guide to ensure that a sufficient number of

children 6-59 months old are included in the sample.[20]. Assuming that the average number of children 6059 months old in the population is 11.5 percent and the average households size is 4.6[21], the total number of households required to be interviewed to reach 729 U5s is 1,639 households.[22] This sample size is adequate to detect a reduction of 10 percentage points (from 61.7% to 51.7%) in the stunting rate of children 6-59 months old at the program level (LOA target in IPTT). The actual target sample size of the endline survey of 9,000 households is substantially larger than this minimum required sample size.

The anthropometric data were collected following FFP guidance that data be collected from all children under five in a household rather than only one randomly-selected index child as had been the method followed for the baseline and midterm surveys. However, for comparability to the baseline and midterm results, anthropometric measures for the index child in the endline survey were used in this analysis. Indicators computed from all under-5 children in the sampled households are reported in Annex 6.

The analytic sample (n=7,148) did not meet the target number of households estimated for MCHN/PEP.[23] Nevertheless, significant differences in the anthropometric indicators were detected in the *ex post* analysis. Because the sample size calculation was based on the required number of under-*five* children for the main stunting indicator, the number of under-*two* children was inadequate to be able to detect threshold differences for this age group by region for some of the MCHN indicators.

Data treatment and quality assurance: Editing and processing of the completed paper questionnaires was done by 17 editors to verify that they were correctly filled in and completed, the correct numbers of households per village were interviewed, and the items of information recorded were consistent in each questionnaire. A senior professional staff member with Mitra then checked 10 percent of edited questionnaires after verification. This system ensured high quality data processing during the editing work.

For questions with pre-coded categorical responses, a possible response of 'other' was also permitted, and interviewers wrote in specific responses when the 'other' code was selected. These written responses for 'other' were translated from Bangla to English and then post- coded by creating additional code values that were added sequentially to the pre-coded responses. Translation, post-coding and editing were simultaneous tasks, beginning two weeks after the start of data collection.

Data entry and cleaning: Data processing was conducted by trained staff of Mitra and Associates. The team consisted of one computer programmer, one data entry supervisor and ten data entre operators. Completed questionnaires were brought to the Mitra office where a registration officer (questionnaire administrator) logged them prior to entry by the data-entry team. All data were entered using CSPro with double entries, resolving discrepancies (100 percent verification) through referral to the original

[20] Stukel, Diana & Deitchler, Megan. Addendum to FANTA Sampling Guide by Robert Magnani (1999): Correction to Section 3.3.1 Determining the Number of Households that need to be Contacted. March 2012.
[21] From SHOUHARDO II Baseline.
[22] All U5s in a selected household were measured for anthropometric indicators. The estimate for the proportion of children U5 per household is consistent with the baseline sample and data from the most recent Demographic and Health Survey (DHS).
[23] Target: 1,017 households; MCHN/PEP Analytic Sample: North Char=794, Mid Char=609, Haor=679, Coast=863

questionnaire. Data editing included a set of checks for internal consistency. The clean dataset was converted into SPSS database for tabulation and analysis.

***Data analysis*:** TANGO staff conducted the analysis using STATA and SPSS statistical software. Sampling weights were applied in the calculation of all statistics in order to compensate for unequal probabilities of selection and for non-response, both of which varied across the eight survey strata (Annex 4). Weights were needed at two levels of analysis: the household level (for data collected in Parts I and II of the questionnaire) and the child level (for that collected in Part III). Following the procedures applied in the baseline and midterm surveys, the analytic sample included eligible program participants by excluding households in the MCHN/PEP component that were not poor or extremely poor. The analytic sample was thus reduced from 8,415 to 7,148 households. This was a reduction of 1,267 households.

Throughout the full report, all statistical significance compares endline values to baseline values. If an endline value in a figure has an asterisk next to it, this indicates that endline value is statistically significant compared to the baseline value of that indicator (not to the Life of Award (LoA) target).[24]

Sampling weights were used to correct for the fact that different proportions of households were selected from different sampling strata. The weights were computed as the inverse of the proportion of the sampled households to the total number of households within the strata. The weights were normalized to a provide an overall weighted sample size equal to the actual sample size. The weighting was based actual responses, so accounts for non-response.

Limitations: The analytic sample (n=7,148) did not meet the target number of households estimated for MCHN/PEP.[25] While the target number of households needed to adequately detect specified threshold differences in under-five children across comparison groups was not met, significant differences in the anthropometric indicators were detected in the *ex post* analysis. Additionally, because the sample size calculation was based on the required number of under-five children for the main stunting indicator, the number of under-two children was inadequate to be able to detect threshold differences for this age group by region for some of the MCHN indicators. Furthermore, for certain indicators like exclusive breastfeeding, the sample size was found to be too small to detect the difference between the baseline results and the LoA target. To detect a change from 62.2 percent at baseline to 66.2 percent for the target would require a sample size of 3,542 mothers.

1.5. Household participation in interventions

Household participation in SHOUHARDO II interventions focused heavily on SO1 and SO2 (Table 2). About two-thirds of households took part in SO1. The encompassing livelihoods focus with activities targeted at both men and women accounts for this. Coast and Haor households participated at a marginally higher rate than those in Mid Char and North Char. SO2, which included some non-poor households, had the greatest participation (See Section 1.3). The proportion of households participating ranged from 70 to 75 percent, regionally.

[24] Refer to Annex 5 for a comparison of endline results to LoA targets.

[25] Target: 1017 households; MCHN/PEP Analytic Sample: North Char=794, Mid Char=609, Haor=679, Coast=863

SO3 also included a notable proportion of households, though the drop-off is clear. Just over one-fifth of households in Coast, Mid Char and North Char were included in SO3, while just 13 percent in Haor participated.

Table 2: Percent of households participating in SHOUHARDO II interventions under SO1, SO2, SO3, by region

	All	Coast	Haor	Mid Char	North Char
SO1: Availability of and access to nutritious foods	60.9	67.4	64.6	58.6	57.5
SO2: Improved health, hygiene and nutrition of children under 2 years of age	72.8	70.2	72.6	70.6	74.6
SO3: PEP women and adolescent girls empowered	17.5	22.4	13.4	19.4	20.5

SO4 and SO5 were both generally more focused on community-level or higher interventions, and household-level information does not provide a complete picture of the degree of participation in these SOs by other key stakeholders.

2. Results/ Program Effectiveness

This section presents summary results for several indicators. Each SO is introduced with a brief description of activities. This is followed by discussion and bar chart figures comparing baseline, midterm, and endline analysis for impact, outcome and output indicators. Each SO also includes a discussion and break down of differences between male-headed households and female-headed households. SO4 and SO5 include discussion comparing PEP and non-poor households. A short summary of main findings concludes each segment. More detailed quantitative tables are in Annex 6.

2.1. SO1: Availability of and access to nutritious foods

2.1.1. Description of project activities

SO1 sought to enhance 370,000 PEP households' access to and the availability of nutritious foods by improving and diversifying household agriculture systems and increasing household income. The SO1 program component delivered various sizes of packages of inputs for various types of livelihood activities (agriculture, fisheries, homestead development, other income-generating activities) and training to COGs and target households. Non-poor community members and PEP households received the same training and technical assistance) but only PEP households received input packages, which varied by PEP status. The SO1 also included self-help savings groups.

2.1.2. Progress towards key impact indicators

The months of adequate household food provisioning (MAHFP)[26] and household dietary diversity score (HDDS)[27] are the two main indicators for measuring household food access.[28] The number of MAHFP and

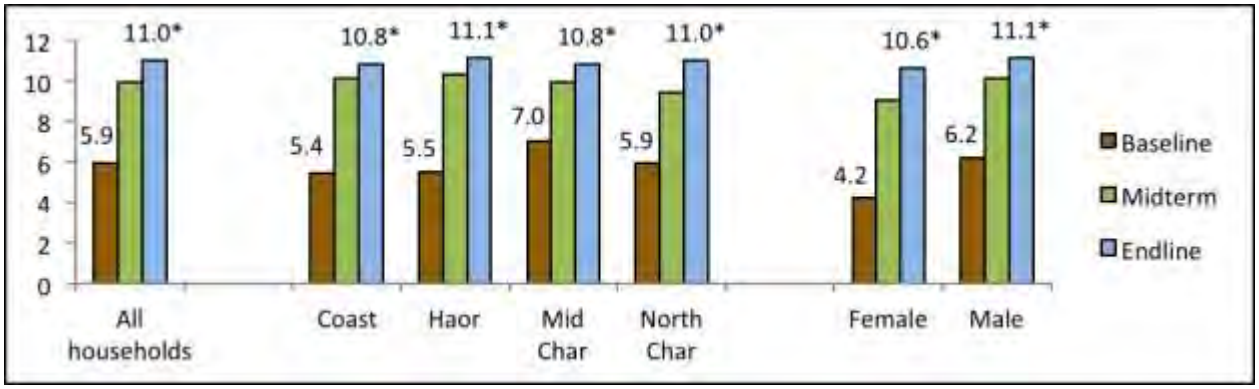
[26] MAHFP is a measure of a household's ability to manage vulnerability in such a way as to ensure that food is available above a minimum level for up to one year. The indicator is a self-reported number of months by the person in the household who is responsible for preparing the food. Source: Bilinsky, P. and A. Swindale. 2010.

[27] HDDS is measured on a scaled of 0-12. It is a measure of the diversity of the diets of members of a household over a given time. Twelve food groups are included in the measure: cereals, roots and tubers, vegetables, fruits, meat/poultry/ offal, eggs,

the average HDDS increased significantly across the baseline, midterm and endline surveys in all four regions and for both male- and female-headed households (Figure 2 and Figure 3). On average, households had enough food to meet their family's needs for 11 months out of the year, up from about 10 months at midterm and six months at baseline; little variation was observed between regions (Figure 2).

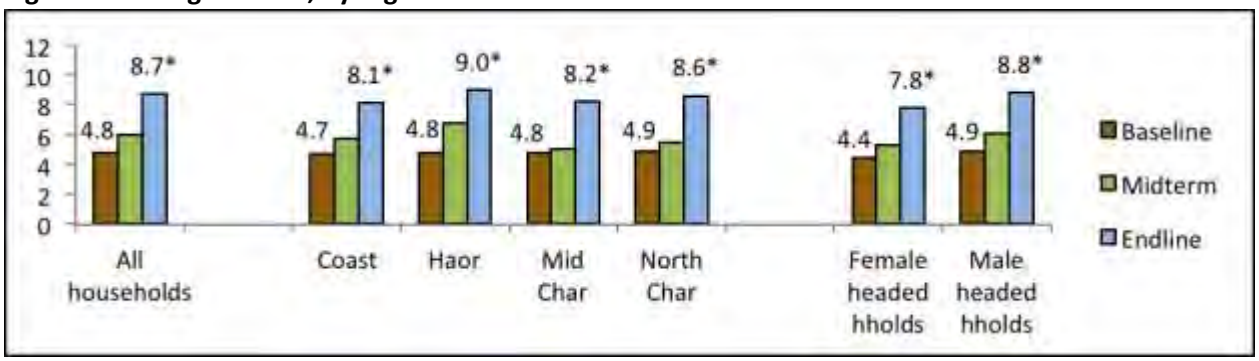
The HDDS nearly doubled from baseline to endline for the project participant group as a whole (Figure 3). By endline, the measure ranged from 8.1 in the Coast region to 9.0 in Haor (on a scale of 1-12). This is an improvement from an average score just under five at baseline. Interestingly, MAHFP saw the greatest increase between baseline and midterm, while HDDS showed larger improvement from midterm to endline. Notably, both HDDS and MAHFP endline values are well above the LoA targets of six and eight, respectively.

Figure 2: Number of MAHFP by region and sex of household head



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Figure 3: Averaged HDDS, by region and sex of household head



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

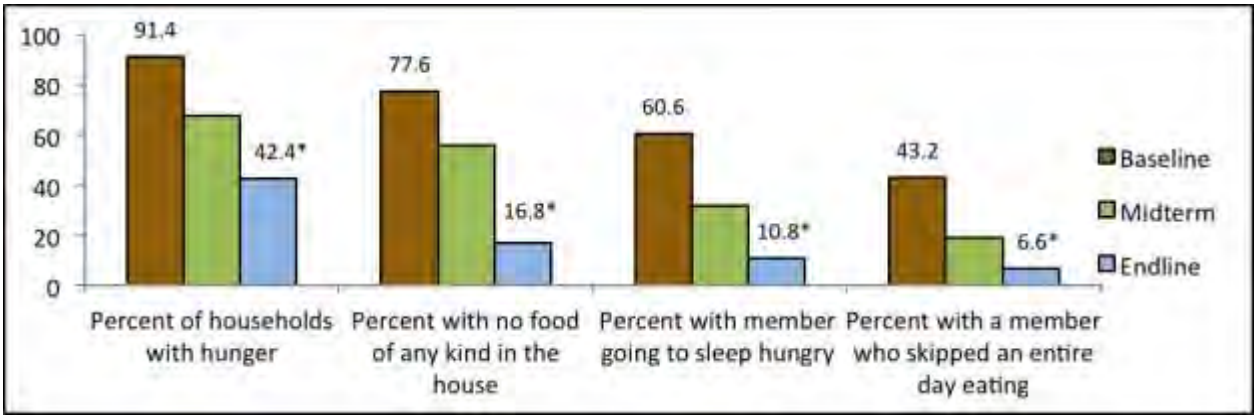
Consistent with the measured increases in MAHFP and HDDS, the prevalence of households experiencing hunger, as well as each of the three experiential indicators used to measure hunger (no

fish and seafood, pulses/legumes/ nuts, milk and milk products, oils/fats, sugar/honey, and miscellaneous. Source: Swindale, A., and Bilinsky, P. 2006.

[28] Bilinsky, P. and A. Swindale. 2010. FANTA III

food in the house, go to sleep hungry, any household member went entire day without eating), decreased significantly (Figure 4). The percentage of households with hunger dropped to less than half (42 percent), down from 91 percent at baseline. Likewise, 17 percent of households reported having no food in the house while more than three-quarters (78 percent) reported this at baseline. The percentage of households with a member going to sleep hungry dropped from 61 to 11, and that with a member who skipped an entire day of eating fell from 43 to 7. Overall, these indicators point to a marked improvement in household food security conditions within the SHOUHARDO program area from baseline to endline.

Figure 4: Indicators of hunger in the last four weeks

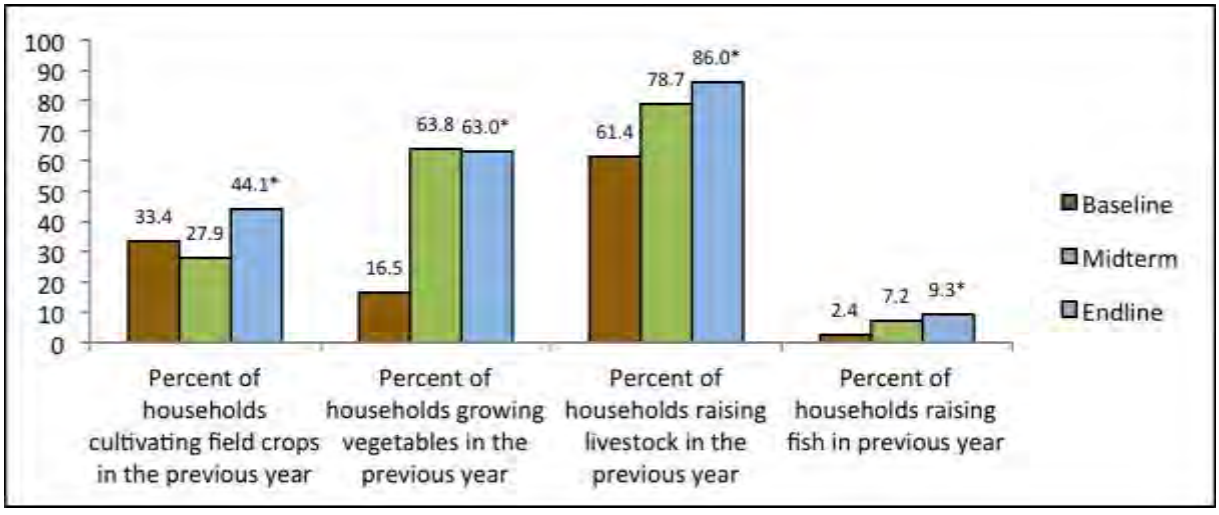


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.1.3. IR 1.1 Improved and diversified agriculture systems

Though some fluctuation exists between midterm and endline, several descriptive indicators providing background information on agricultural production improved significantly from baseline (Figure 5). In particular, the percentage of households growing vegetables increased to 63 percent from 17 percent at baseline. Field crop and livestock production also gained popularity (44 percent and 86 percent, respectively), while fish production increased to nine percent of households.

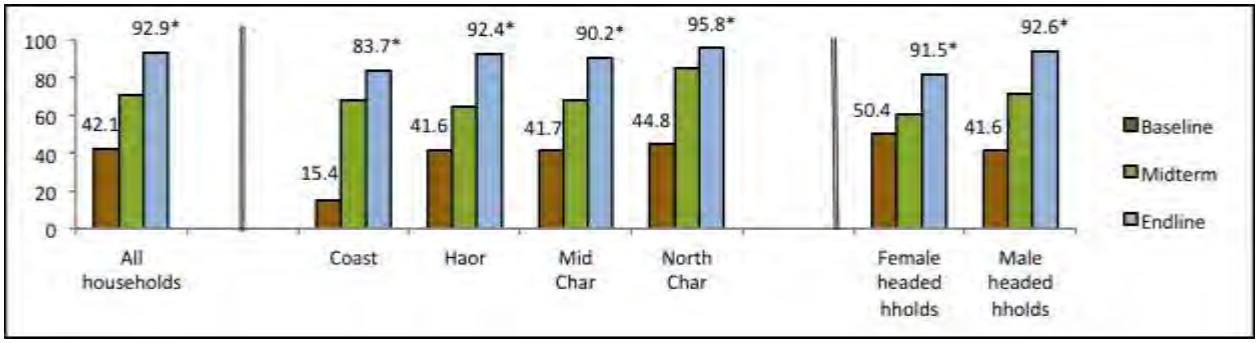
Figure 5: Percent of households engaged in agricultural activities



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Looking at progress made in key SO1 outcome indicators regarding technology adoption, the proportion of field crop producers adopting at least three new technologies more than doubled between the baseline and endline, rising to 93 percent (Figure 6). The percentage of Coast producers adopting new technologies more than quadrupled to 84 percent of producers, with a large part of that increase between baseline and midterm. All other regions increased adoption more than 100 percent. Both male- and female-headed households experienced significant increases in technology adoption, although increases were greater for male-headed households. Among the four practices for which data were collected, adoption rates for every one increased significantly. Regarding specific practices, intercropping increased the most from three percent at baseline to 30 percent, followed by using recommended seed storage practices, which increased from two percent at baseline to 21 percent at endline (Annex 6). Other practices for which marked increased was observed include: maintain proper spacing (331 percent increase), use of integrated pest management (244 percent increase), and use of 2-3 seedlings per hill for rice (215 percent increase).

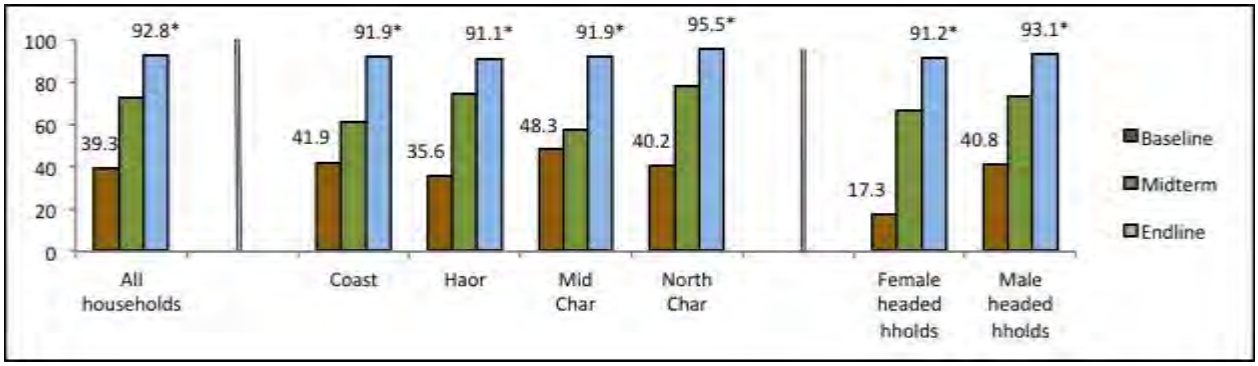
Figure 6: Percent of field crop producers adopting the minimum number of technologies (three), by region and by sex of household head



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Vegetable producers saw an almost identical significant increase in adoption of at least three new technologies to more than 90 percent of all vegetable producing households at the endline. Figure 7 shows that in contrast to field crops, female-headed households increased adoption of technologies at a higher rate compared to male-headed households.[29]

Figure 7: Percent of vegetable producers adopting the minimum number of technologies (three), by region and by sex of household head



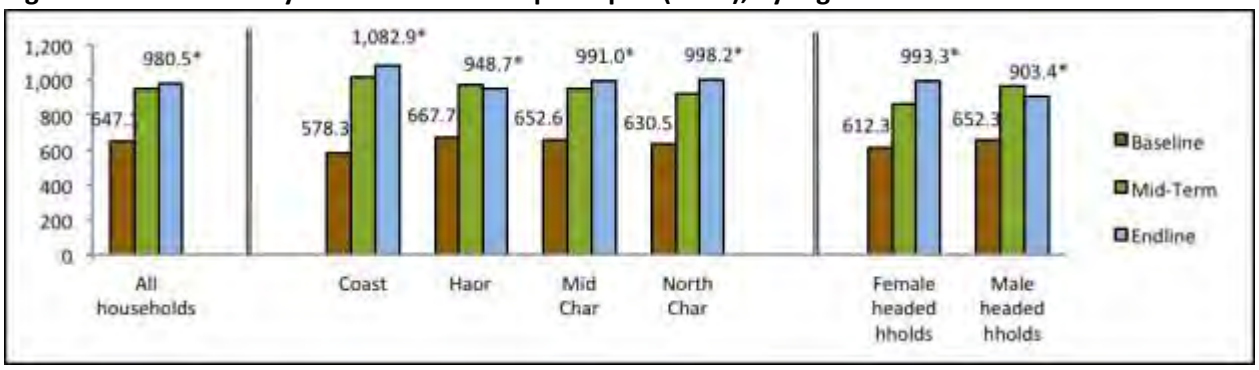
[29] This study did not collect information on yield. Annex 6 includes tables on the percentage of vegetable producers that adopted at least three improved technologies and the average number of vegetable crops produced in the last year.

Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.1.4. IR 1.2 Increased household income among PEP

Strong and significant gains in income were observed in every group (Figure 8). Overall, monthly per capita household income grew more than 50 percent to 981TK. Coast households reported the highest monthly income per capita (1,083TK) and the largest increase from baseline (87 percent). Conversely, Haor households experienced the smallest increase, 42 percent. Male- and female-headed households saw income increases of 39 percent and 62 percent, respectively.

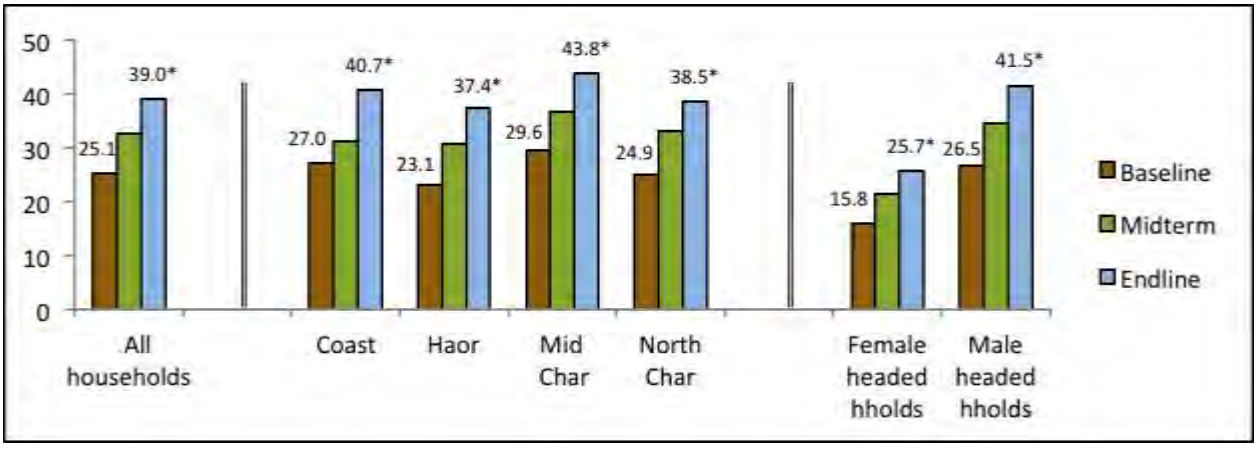
Figure 8: Mean monthly household income per capita (in TK), by region and sex of household head



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

The pattern for ownership of domestic assets mirrors that seen for income (Figure 9). Overall, survey households' domestic asset index[30] climbed 56 percent. All groups saw significant increases in the domestic asset index. Regionally, Haor experienced the largest increase (62 percent), but maintained the lowest overall value at endline (37.4).

Figure 9: Index of domestic assets, by region and sex of household head

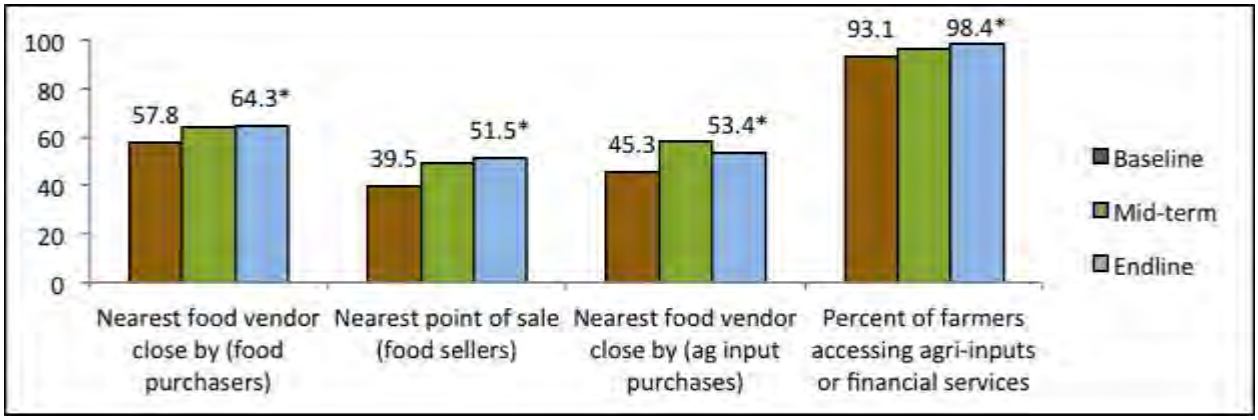


[30] Domestic asset index is a proxy indicator for measuring livelihoods and food security status. This index generally included non-productive assets, such as jewelry and households goods (e.g. furniture, radios, TVs, etc.). Each asset is assigned an associated weight based on its relative value. Each item owned in a household is multiplied by its weight, then values for all assets are summed to generate the index.

Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Figure 10 reports on four indicators of market access, including: 1) percent of households that purchase food for whom the nearest food vendor is close by (<30 minute walk), 2) percent of households that sell food for whom the nearest point of sale is close by, 3) percent of households that purchase agricultural inputs for whom the nearest vendor is close by, and 4) percent of households accessing agri-inputs and financial services. While each indicator increased significantly from baseline, growth from midterm to endline is less marked (and actually decreased for one indicator). By endline, nearly all farmers (98 percent) reported access to agri-inputs or financial services, which is a key SO1 outcome indicator. However, this measure decreased among female-headed-households, though the result is not statistically significant. Also of note is a highly significant drop (18 percent) among Coast households for percentage of households that purchase food for whom the nearest food vendor is close by (Annex 6).

Figure 10: Indicators of access to markets and services, percent of households at endline

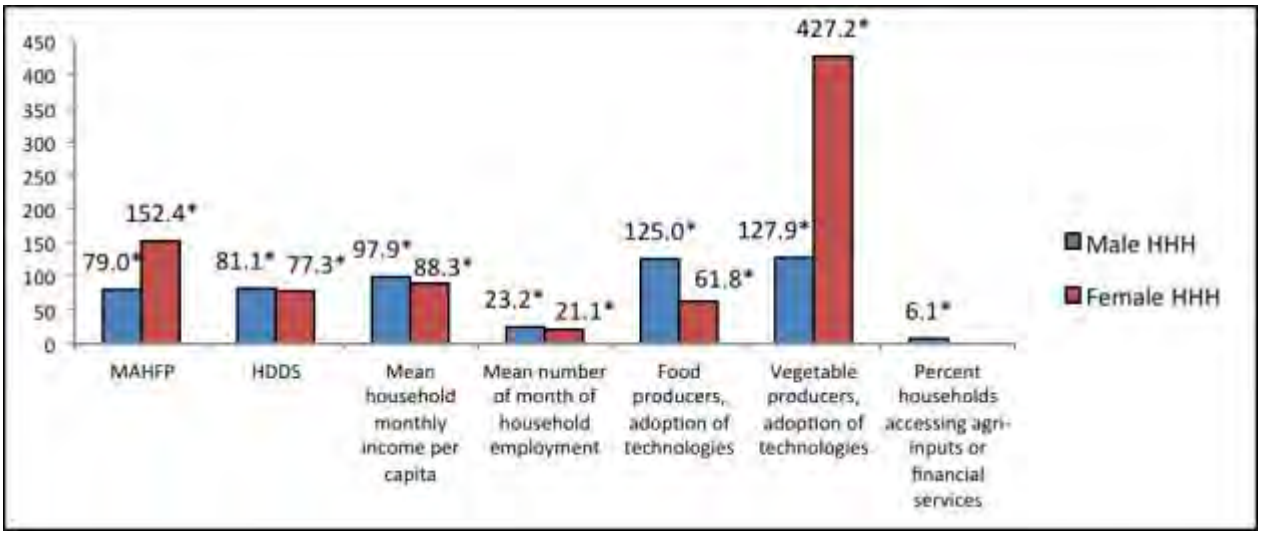


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.1.5. Differences in progress made for female- and male-headed households

Both male- and female-headed-households showed large significant gains in key indicators (Figure 11). Male-headed households generally saw slightly larger increases from baseline to endline. Among field crop producers, male-headed households increased adoption of at least three new technologies twice as much as females. Meanwhile, increase in adoption of new technologies among vegetables producers was substantially higher for female-headed households than male-headed households, primarily because these activities were targeted at women. Female-headed households increased MAHFP almost twice as much as male-headed households, with both groups reporting about 11 months at endline. Finally, the percent of female-headed households that accessed agri-inputs, finances services decreased from baseline (though the change was not statistically significant), while it increased for male-headed households.

Figure 11: Percent difference from baseline to endline of key livelihood indicators by sex of household head



Blue bar: % change from baseline to endline, Male HH Red bar: % change from baseline to endline, Female HHH

Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Note: For 'Percent of households accessing agri-inputs or financial services', female-headed-households decreased 2.8 percent from baseline to endline. This change was not significant.

2.1.6. Impact and outcome activities by participation in SO1 activities

The midterm and endline QPE surveys collected information about household participation in project interventions. Table 3 provides information about key SO1 impact and outcome indicators broken down by households that did and did not participate in SO1 interventions from the midterm and endline rounds. In particular, participants are households that reported having received either training or training plus inputs for livelihood activities supported by SHOUHARDO II. The results from this table show that both impact and outcome indicators increased substantially for both participants and non-participants. Interestingly, the average per-capita income of participants was just over 90 percent of that of non-participants at the midterm, but by the endline, the income of participants had relatively more than non-participants so that their income levels were actually slightly higher than those of non-participants.

Adoption of improved technologies by participants and non-participants shows generally similar patterns of change. At the time of the mid-term the rate of adoption of technologies was higher for participants than non-participants for field crops, vegetable production, and livestock production. However, the rate of increase of adoption of non-participants from med-term to endline was higher than for participants. There are at least two possible interpretations of these results. The first is that the adoption of technologies by non-participants is the result of demonstration effects from participants to non-participants, with some time lag. This interpretation is supported by the fact that the adoption rates at the mid-term are substantially lower for non-participants, but by the time of the endline adoption by

non-participants is closer to that of participants. An alternative explanation is that adoption of these practices are the result of factors other than the SHOUHARDO interventions. A more study into the reasons for adoption of recommended technologies by both participants and non-participants is needed to more fully understand these trends.

Table 3: S01 key indicators , by S01 program participation

Indicator	Midterm	Endline	Percent Difference (Endline-Midterm)		Number of observations	
					Midterm	Endline
MAHFP by participation in S01 activities						
Participant	9.8	11.0	12.1%	***	*2,909*	*5,062*
Non-participant	10.1	11.1	10.1%	***	*4,007*	*2,082*
HDDS by participation in S01 activities						
Participant	5.1	8.7	71.8%	***	*2,909*	*5,062*
Non-participant	5.1	8.4	65.8%	***	*4,007*	*2,082*
Monthly per capita income (2010 Taka) by participation in S01 activities						
Participant	791.8	998.7	26.1%	***		
Non-participant	866.5	978.5	12.9%	***		
Adoption of three or more field crop production technologies by field crop program participation						
Participant	33.4	60.3	80.8%	***	*714*	*978*
Non-participant	17.7	37.2	110.2%	***	*6,202*	*6,168*
Adoption of three or more vegetable production technologies by vegetable crop program participation						
Participant	68.7	69.3	0.9%		*898*	*2,499*
Non-participant	41.9	51.4	22.6%	***	*6,018*	*4,649*
Adoption of three or more livestock production technologies by livestock program participation						
Participant	12.8	41.2	222.7%	***	*1,380*	*2,857*
Non-participant	8.7	36.1	314.6%	***	*5,536*	*4,291*

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

2.1.7. Summary of progress toward SO1

SO1: "Availability of" and "access to" nutritious foods enhanced and protected for 370,000 poor & extreme poor households.

- At endline, almost all households reported nearly 11 months of adequate food provisioning, compared with only about six months at baseline.
- Likewise, HDDS was improved for all households, with female-headed increasing the most of all sub-groups.
- Regionally, Coast and Haor households experienced the largest increased in MAHFP, while Haor improved the most in HDDS.

- While indicators of overall hunger decreased significantly between the baseline and endline, household food insecurity was still an issue that needs addressed, as more than 40 percent of households reported hunger at endline.
- Regarding technology adoption[31], both field crop producers and vegetable producers actively adopted new technologies. Regionally, North Char households showed the largest increase in adoption of at least three technologies in both field crops and vegetables. The remarkable increase in adoption among Coast field crop producers was not reflected among vegetable producers in the region.
- Monthly income grew substantially, with most of the increase coming between baseline and midterm.
- All indicators for access to markets and services significantly improved since baseline. Nearly all farmers (98 percent) reported access to agri-inputs or financial services by the time of the endline, though only about half (52 percent) reported access to the nearest point of sale.
- Female-headed households were far more likely to adopt technologies related to vegetable production while male-headed households adopted field crop technologies at a greater rate. Both groups improved significantly across almost all indicators.
- Adoption of improved technologies has increased substantially from midterm to endline by both participants and non-participants in SO1 interventions.

2.2. SO2: Improved health, hygiene and nutrition of children under 2 years of age

2.2.1. Description of project activities

SO2 has built on the best practice of SHOUHARDO I, which delivered a comprehensive package that positively impacted the health, hygiene and nutrition of children under two and pregnant and lactating women. The impact was made through the results of increasing access to and utilization of health and nutrition services, and through health and nutrition behavior changes among target PEP households. The package included: monthly food ration; promotion of infant and young child feeding (IYCF) practices; linking preventative and curative health and nutrition services; building capacity for community based integrated management of childhood illnesses (C-IMCI); facilitating linkages with the Ministry of Health and Family Welfare (MoH&FW) program to provide micro-nutrient supplementation for pregnant and lactating mothers; screening and referral for community based management of acute malnutrition (CMAM); and promotion and provision of water and sanitation infrastructure (identified by partners and VDCs). CHVs were trained and recruited to deliver most of the interventions through community-based GMP sessions and court yard sessions, home visits, and referrals. PNGOs were also responsible for making referrals and linkages with MoH&FW programs for the Expanded Program on Immunization (EPI), and vitamin A and iron folate supplementation.

[31] The QPE used the IPTT definition of this indicator, which is defined as adoption of three improved technologies.

2.2.2. Progress towards key impact indicators

LoA targets for all malnutrition indicators by endline were met with the exception of underweight females. The target for underweight females under the age of five years was set at 34.6 percent and at endline, 36.4 percent of females were underweight. However, when the target and endline values were tested for significance, it was found that the difference of 5 percent was not significant. Underweight male children under five years of age, on the other hand, far exceeded their LoA target of 42.2 percent at endline by 19 percent (endline value of 34.4 percent). For stunting rates, targets set for all children and those disaggregated by sex were achieved (target: 55.1 percent; females: 51.2 percent; males: 58.9 percent). The overall endline results for stunting among children under five years of age was 48.8 percent with females at 47.8 percent and males at 49.7 percent (Figure 12). The endline underweight target was also met for children under two, with 39.5 percent of children underweight, an 11 percent decrease from baseline to endline.

Other LoA targets met included prevalence of diarrhea for children 6-23 months, percent of pregnant and lactating women taking iron supplements, and children 6-23 months of age who receive a minimum acceptable diet. The prevalence of diarrhea for children 6-23 months of age at endline was 8 percent, which exceeded the target of 10.3 percent. This may be attributed to increases in hygiene beliefs of mothers and improved access to water and sanitation (Figure 23, Figure 24, Figure 25, and Figure 26). The percent of pregnant and lactating women exceeded the target with a difference of 16 percent. Most impressive, however, was the percent difference between target and endline results for children receiving a minimum acceptable diet. The target was set at 20 percent and at endline, the program surpassed it at 48 percent, a 140 percent difference. LoA targets were not met for the following indicators: percent of children immunized against 8 diseases by 12 months of age, and number of people with improved access to sanitation facilities and improved access to drinking water. For exclusive breastfeeding and mothers who feel it is important to wash hands at five critical times, the LoA target and endline values were not significantly different and thus were considered meeting target.

***Malnutrition among under-fives*:** Children under five, overall, experienced significant reductions in all measures of malnutrition—stunting, wasting and underweight (Figure 12). The12.9 percentage point decrease in the stunting prevalence from baseline to endline is impressive especially when compared to BDHS data. Sunting rates SHOUHARDO II showed a yearly decrease of 3.2 percent[32] while the BDHS data suggest that the national trend was only 0.5 percent per year between 2007 and 2011.[33, 34] The reduction in the wasting prevalence was 22 percent from baseline to endline; however, the endline value of 12.2 percent was greater than the midterm value at 9.0 percent. The percentage of underweight children also increased slightly between midterm and endline, but decreased overall, with

[32] TANGO calculated using baseline and endline values divided by 4 years (dates from which the baseline and endline results were gathered).

[33] National Institute of Population Research and Training, Mitra and Associates & MEASURE DHS. 2013. *Bangladesh demographic and health survey 2011.* Dhaka, Bangladesh, and Calverton, MD, USA: National Institute of Population Research and Training, Mitra and Associates, and Macro International.

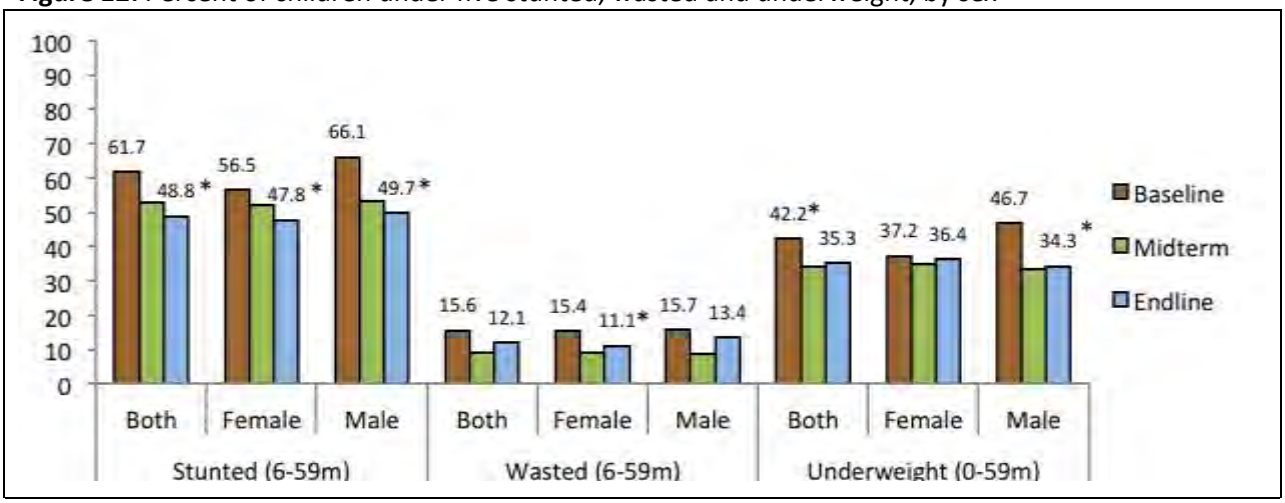
[34] National trend was calculated from 2007 to 2011, over a four-year time period, where there was only a decrease from 43 to 41 percent.

an annual reduction of 1.7 percent per year.[35] Overall, most gains were made for all malnutrition indicators by the midterm. Differences in the patterns of change in child malnutrition indicators by programming approach are discussed in section 3 below.

When comparing male and female children under five, males saw greater reductions in stunting and underweight whereas female children saw greater reductions in wasting. For both male and female stunting, the difference from baseline to endline was significant (25 percent and 15 percent, respectively). Wasting was only significant for female children with a reduction of 28 percent (15.4 percent at baseline to 11.1 percent at endline). However, for underweight children, only males saw a significant reduction of 27 percent (Annex 6).

When data for child malnutrition was disaggregated by age of mother (15-25 years and 26-49 years), it was found that both age groups had significant reductions in stunted and underweight children from baseline to endline. No statistical differences were found for wasting (Annex 6).

Figure 12: Percent of children under five stunted, wasted and underweight, by sex

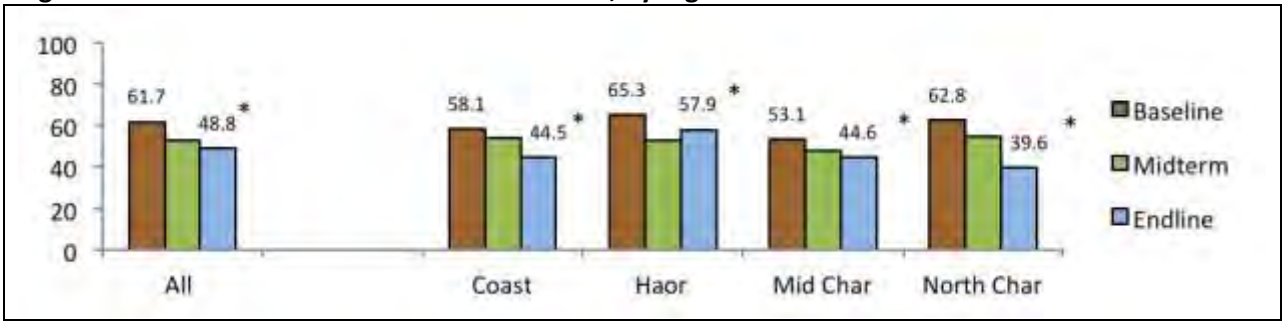


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Decreases in malnutrition prevalence varied regionally depending on the malnutrition indicator. For stunting, all regions saw significant decreases ranging from 11 to 37 percent from baseline to endline. (Figure 13). In comparison, significant decreases for wasting were only found in the Coast and Hoar regions, with percent decreases at 44 and 48 percent, respectively (Figure 14). For underweight children, decreases were significant in the Coast, Haor and North Char regions. (Figure 15). Notably, the Coast and Hoar regions showed significant decreases in all three indicators.

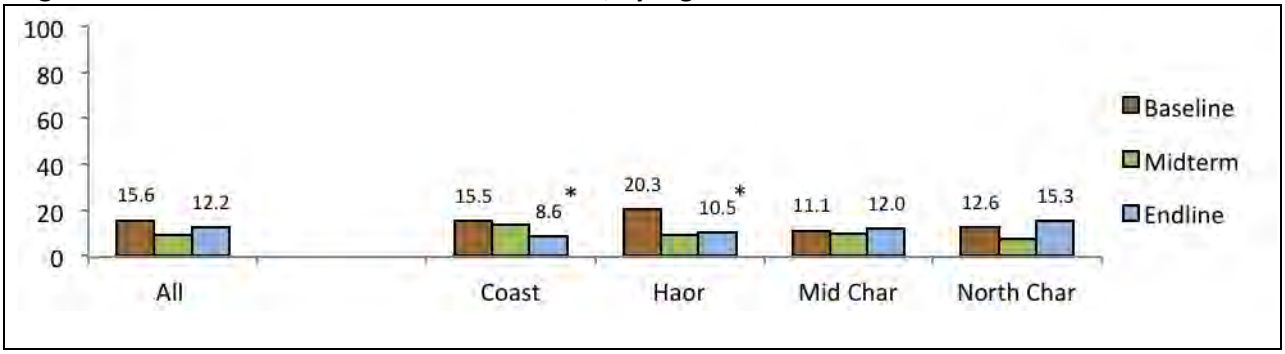
[35] This is comparable to similar declines for the country as a whole between 2007 and 2011 with an annual percentage-point reduction of 1.3. Source: National Institute of Population Research and Training, Mitra and Associates & MEASURE DHS.

Figure 13: Percent of children under-five stunted, by region[36]



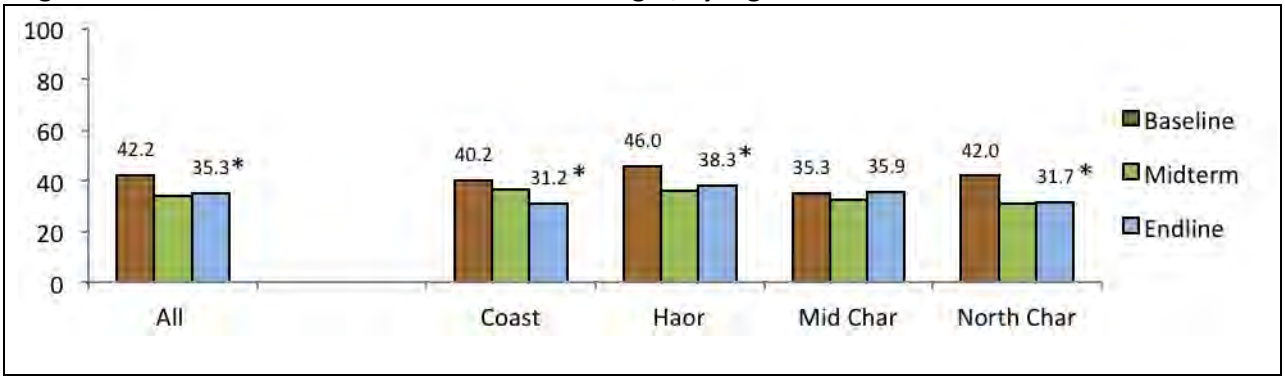
Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Figure 14: Percent of children under-five wasted, by region



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Figure 15: Percent of children under-five underweight, by region

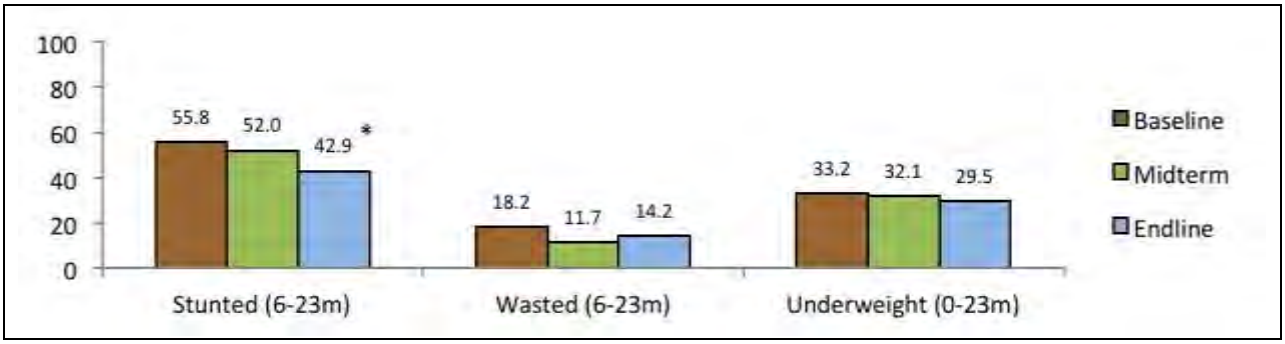


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Malnutrition among under-twos: Children under two saw significant reductions from baseline to endline in stunting, but not for wasting or underweight (Figure 16). This reduction may be partially attributed to the improved nutrition, nutritional status and dietary diversity of mothers, which can affect children's birth weights and mother's breast milk quality. The prevalence of underweight among mothers of children under five declined from 37 to 31 percent.

Figure 16: Percent of children under-two stunted, wasted and underweight

[36] Figure 13 includes all children moderately stunted (<2SD). Haor region did experience a significant decrease (p=.001) in stunting among severely stunted (<3SD) children. (Annex 6)



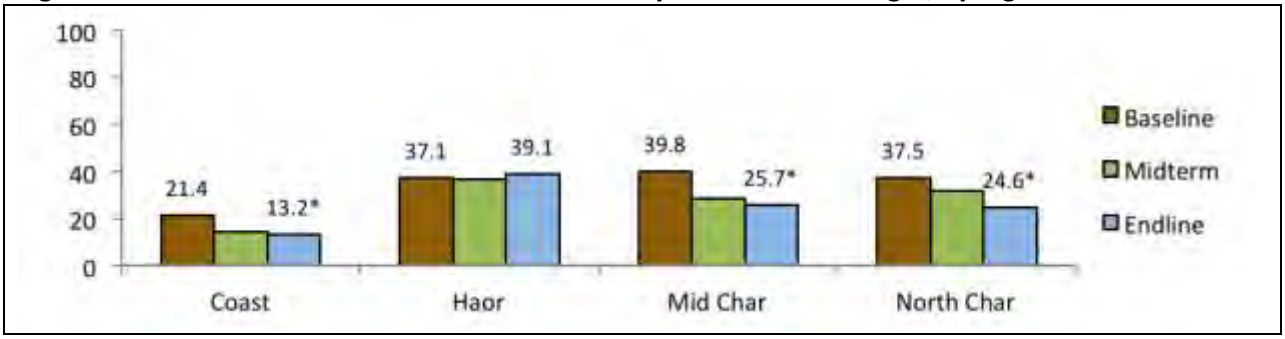
Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater..

For wasting, although the overall reduction was not significant from baseline to endline, an increase was noted from midterm to endline. Likewise, the greatest reduction for wasting was seen from baseline to midterm at 6.5 percent. This reduction was found to be significant.

When comparing values across children under 5 and children under 2, it was found that the only significant indicator for both age groups was stunting. Decreases in stunting rates were greater for children under 2 years of age with a percent difference of 23 percent from baseline to endline. The percent difference for children under 5 years of age was 21 percent. Data were further disaggregated by age of mother. It was found that both younger mothers (between the ages of 15-25 years) and older mothers (between the ages of 26-49 years) were statistically significant for reducing stunting in children under two from baseline to endline. Wasting and underweight were not significant for either mother age groups (Annex 6).

Caregiver's nutrition: Significant reduction in underweight women was observed for all households. Regionally, the Coast, Mid Char and North Char (Figure 17) also saw significant reductions. Further, the quality of mothers' diets has improved as well: overall Mothers' Dietary Diversity Score increased 82 percent to 8.4.

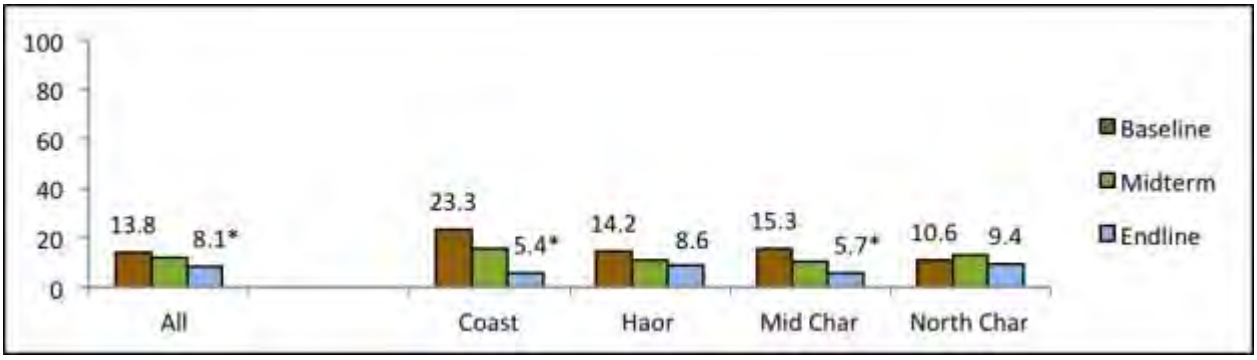
Figure 17: Percent of mothers of children under five years old underweight, by region



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Prevalence of Diarrhea: The percentage of children age 6-23 months with diarrhea declined significantly to less than 10 percent. This may be one reason why stunting has seen significant declines for children.[37] However, Figure 18 shows that decreases in diarrheal incidences were only seen in two regions, Coast and Mid Char.

Figure 18: Percent of children 6-23 months with diarrhea in the last two weeks, by region

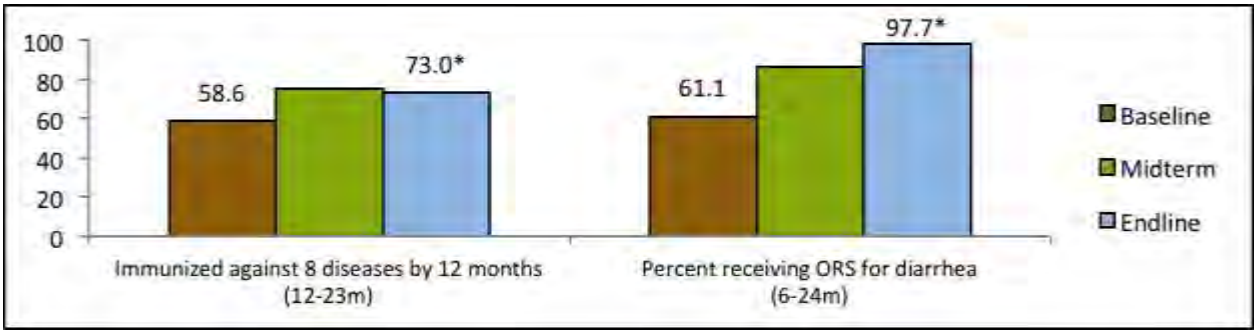


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.2.3. IR 2.1 Access to and utilization of health and nutrition services improved

Immunization and ORS: Figure 19 shows significant gains in the percentage of children immunized against eight diseases. However, these gains were slightly less than those achieved at midterm. Improvements have also been made in the percentage of children age 6-23 months receiving ORS for diarrhea since baseline. This indicates that SHOUHARDO II has been successful at linking children to the MoH EPI program and basic health services.

Figure 19: Immunization and ORS for diarrhea among children under two



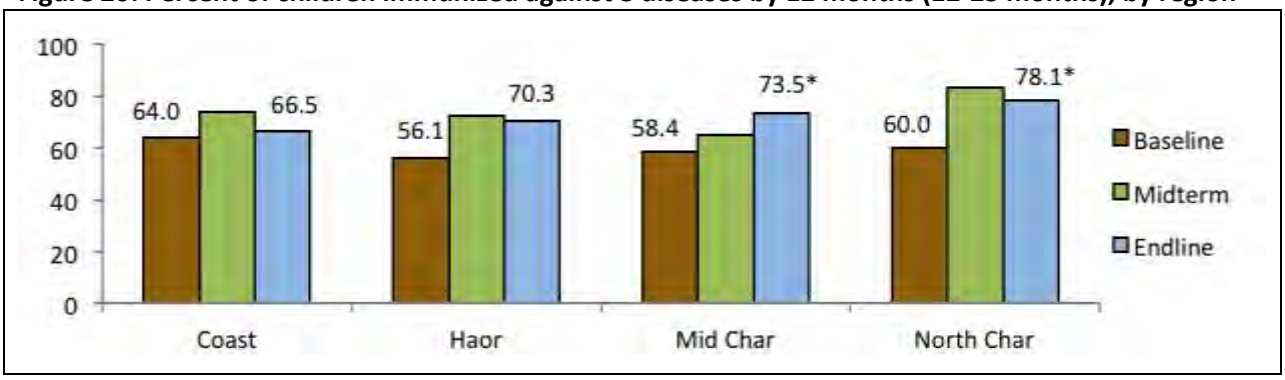
Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Although the percent of children immunized did not meet the LoA target of 82 percent, some regions performed better than others. When the data was disaggregated by region immunization rates for children under two saw significant increases in the Mid Char and North Char (Figure 20). However, it is important to note that the greatest improvements were seen from baseline to midterm for all the

[37] A 2008 meta-study of data collected from nine countries, including Bangladesh, confirms that a higher cumulative burden (i.e., a greater number of episodes) of diarrhea increases the risk of stunting in this age group (see Checkley et. al. 2008 Int J Epidemiol 37(4): 816–830).

regions with the exception of Mid Char. The Coast, Hoar, and North Char saw decreases from midterm to endline.

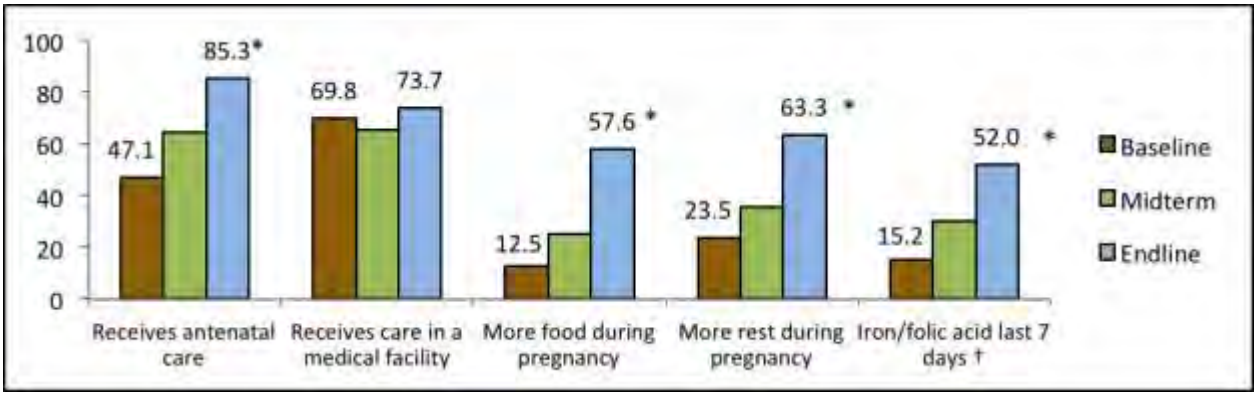
Figure 20: Percent of children immunized against 8 diseases by 12 months (12-23 months), by region



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater

***Caring practices for mothers**:* Significant improvements were achieved in caring practices for mothers. A substantially higher percentage of women received antenatal care, additional food and rest during pregnancy, and iron/folic acid[38] at endline than at baseline (Figure 21). This shows that key messages communicated by CHVs during GMP and courtyard sessions led to behavior change. Despite these gains, the percentage of women receiving care in a medical facility showed no significant gains from baseline to endline. When disaggregated by region, however, data showed significant gains for mothers receiving antenatal care in a medical facility in the Coast, Hoar, and Mid Char regions. Other data showed significant improvements across all four regions for mothers receiving antenatal care, taking in more food and rest during pregnancy, and taking iron/folic acid (Annex 6).

Figure 21: Caring practices for mothers, percent of women utilizing practice or receiving service



† Pregnant and lactating women

Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

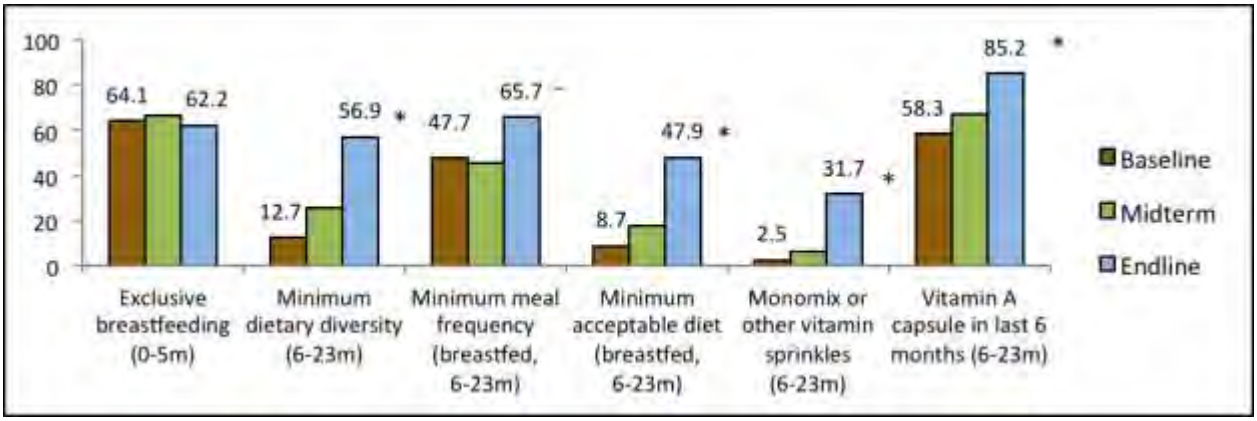
2.2.4. IR 2.2 Caregivers of children under 2 adopt improved health, hygiene and nutrition behavior and caring practices

Figure 22 shows that the quality of caring practices for children under two has improved for five of the six indicators of nutrition-related caring practices for children from baseline to endline. The strongest

[38] Pregnant and lactating women.

improvements were found in the area of diet and food consumption. The percentage of children receiving monomix or other vitamin sprinkles increased from 3 percent at baseline to 32 percent at endline. Likewise, the minimum dietary diversity[39] and minimum acceptable diet[40] indicators also showed similar large increases. The percentage of breastfed children with a minimum acceptable diet increased from 9 percent to 48 percent. However, there is no evidence of gains in exclusive breastfeeding for children under six months; rather, there was a slight, statistically insignificant decrease from baseline to endline. Additional information is needed to understand why exclusive breastfeeding rates did not see an increase similar to other indicators under child care practices. In the midterm evaluation, this was also identified as an area that needed further evaluation with only small, insignificant gains in exclusive breastfeeding percentages. With an endline value of 62 percent of children under 6 months exclusively breastfed, SHOUHARDO II did not meet its end target of 66.2 percent. However, it is important to note that the sample size used in this analysis for breastfeeding was too small to detect the difference between baseline and target. To detect a change from 62.2 percent (baseline) to 66.2 percent (target), this would require a sample size of 3,542 mothers. Furthermore, when the target and the endline values were evaluated for this indicator, it was found that they were not significantly different.

Figure 22: Nutrition-related caring practices for children under two for all participants (percent)



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

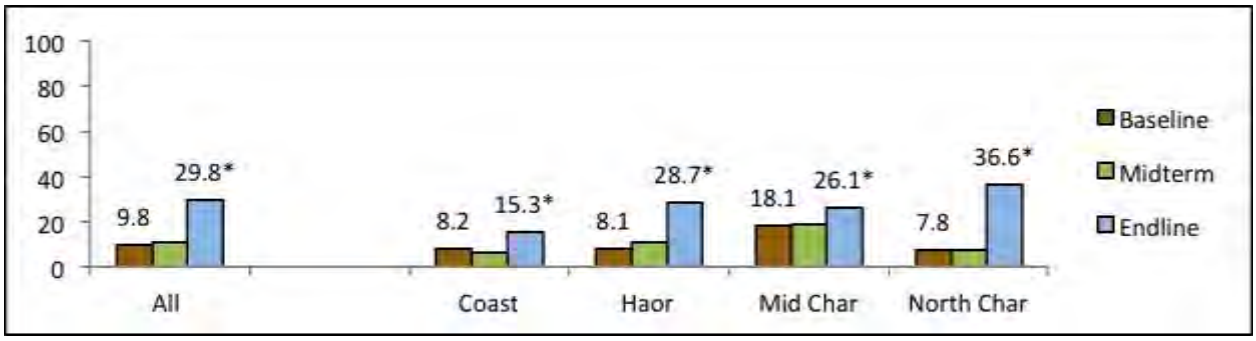
***Hygiene practices of mothers*:** Although SHOUHARDO II did not achieve its overall target of 35 percent of mothers who feel it is important to wash their hands at the five critical times,[41] positive indications for each of the individual five critical times for hand washing saw significant increases. Improved hand washing has been correlated with lower rates of diarrhea, and this result is consistent with the declines in diarrhea prevalence documented over the same period (Figure 18). Note that the consistency does not hold at the regional level. Interestingly, those regions that had the smallest improvements in beliefs about hand washing (Coast and Mid Char) had the greatest decrease in diarrhea rates.

[39] The minimum dietary diversity indicator identifies whether a child has consumed at least four foods from the following seven food groups in the last 24 hours: grains, roots and tubers, legumes and nuts dairy products (milk, yogurt and cheese), flesh foods (meat, fish, poultry and liver/organ meats), eggs, vitamin-A rich fruits and vegetables, other fruits and vegetables.

[40] Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk). http://www.unicef.org/nutrition/files/IYCF_Indicators_part_III_country_profiles.pdf .

[41] 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.

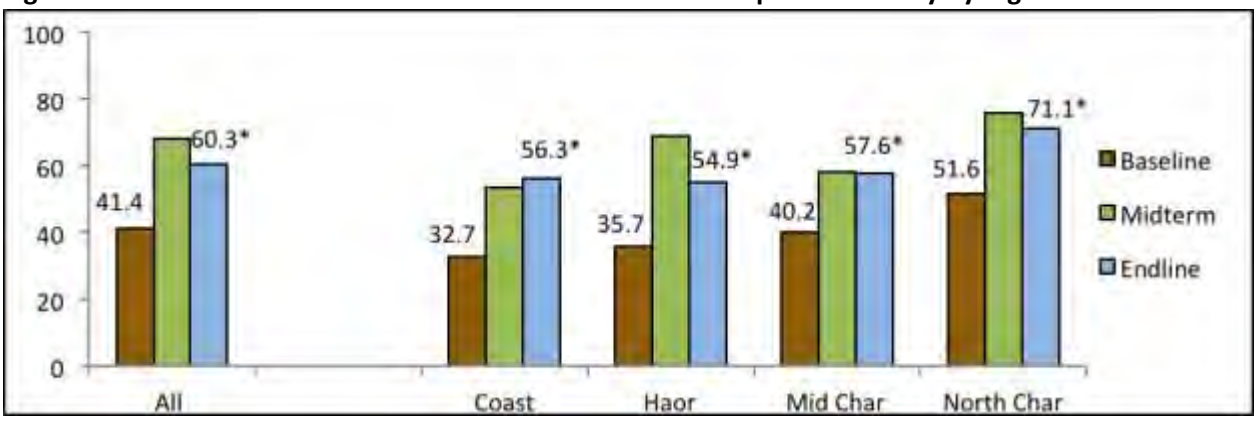
Figure 23: Percent of mothers who feel it is important to wash their hands at five critical times by region



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Similarly to hand washing, Figure 24 shows strong gains for the population as a whole and across all regions in the percent of children under three whose feces are disposed of safely. However, these values decreased between midterm and endline for all regions except the Coast. Across regions, the Coast saw the greatest increase (72 percent). This may have contributed to the significant decrease in diarrheal rates of children 6-23 months in the region.

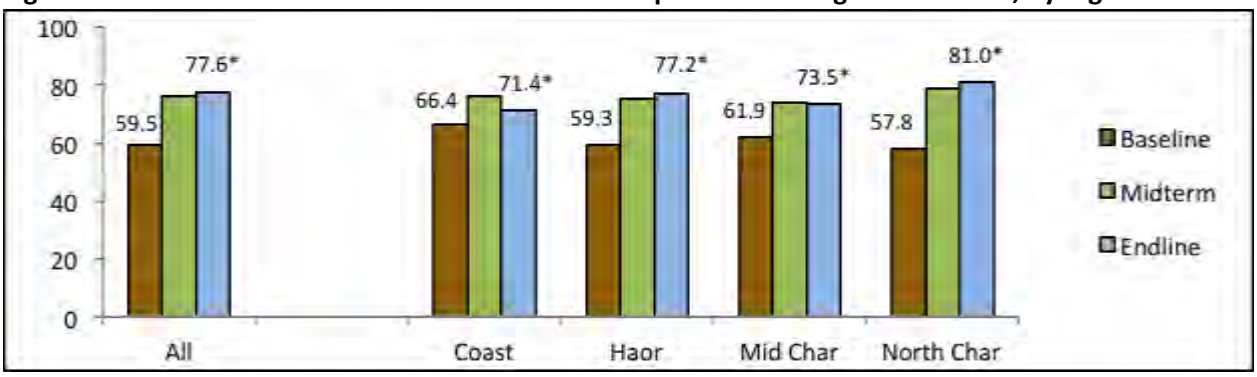
Figure 24: Percent of children under three whose feces are disposed of safely by region



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Access to water and sanitation: Significant gains have also been achieved in access to clean water and sanitation facilities. Access to improved drinking water (Figure 25) has increased in all four regions. Although at baseline Coast had the highest percentage of households with access to improved drinking water, it saw the least improvement over time. North Char saw the greatest improvement, from 58 to 81 percent.

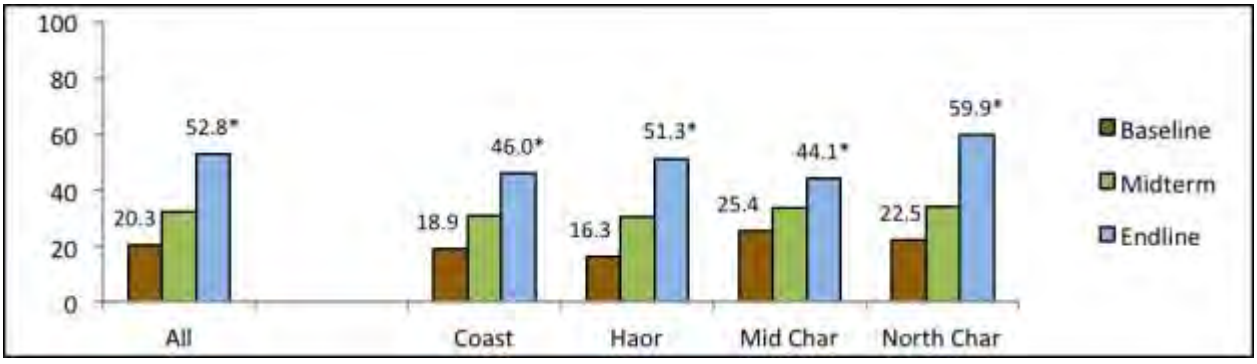
Figure 25: Percent of households with access to an improved drinking water source, by region



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Access to improved sanitation facilities remained lower than access to improved drinking water sources, but this indicator saw greater increases overall (Figure 26). Additionally, improvement in this indicator was strong across all regions. Mid Char saw the least improvement but had a higher percentage of households with improved sanitation facilities at baseline compared to the other regions.

Figure 26: Percent of households with access to an improved sanitation facility, by region

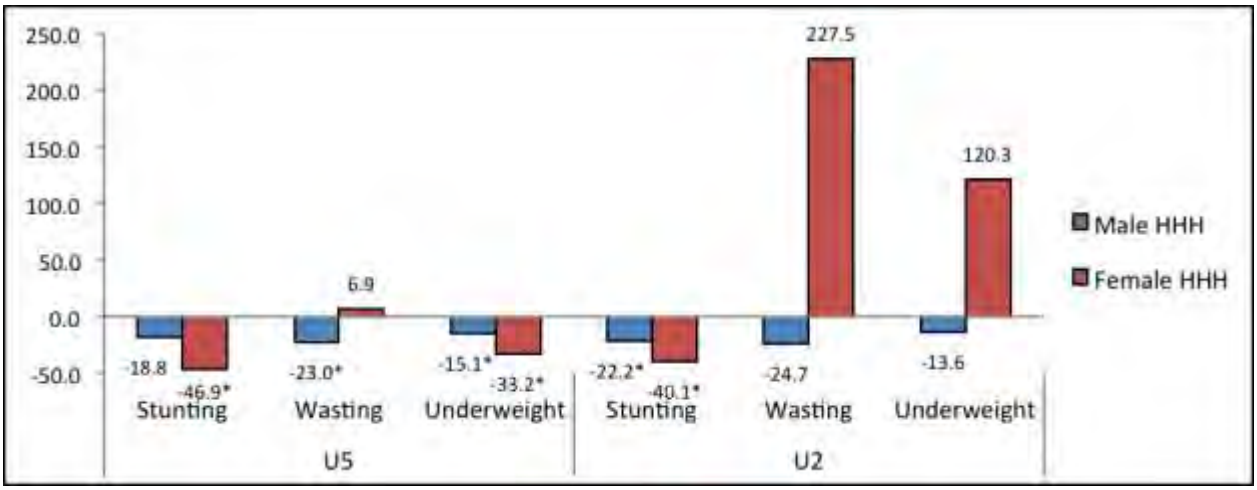


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.2.5. Differences in progress made for female- and male-headed households

Both male- and female-headed households saw significant reduction in underweight for children under five years of age. However, stunting was only significant for female-headed households and wasting was only significant for male headed households for this child age group. For children under two years of age, stunting had significantly reduced in both male and female headed households. Interestingly, wasting and underweight for under-two children increased among female-headed-households, though the difference is not significant and may be reflection of the small sample size.

Figure 27: Percent difference from baseline to endline, child anthropometric indicators, by sex of household head



Blue bar: % change from baseline to endline, Male HH Red bar: % change from baseline to endline, Female HHH

Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

When comparing underweight mothers of children under five years of age, it was found that male-headed households saw significant reductions from 37.0 percent at baseline to 29.9 percent at endline. However, female headed households, an increase in underweight was recorded but was not significant. As for the data available for child malnutrition indicators and for underweight mothers, it is important to note that the sample sizes for female-headed households were much smaller in comparison to male-headed households and thus, harder to detect significant changes within this population.

2.2.6. Summary of progress towards SO2

- Generally the design of SO2 interventions was comprehensive and in line with global practice. LoA targets were met for most indicators. Those indicators for which targets were not met include improved access to water and sanitation, and immunization of children against eight diseases by 12 months of age. Significant regional differences were noted for these indicators, showing where improvements and additional targeting is needed. Nevertheless, endline values of these indicators were moving in the intended direction. Overall, when comparing baseline to endline, significant improvements in SO2 indicators were noted.
- The midterm evaluation emphasized the need to focus on lagging indicators including hand washing, prevalence of diarrhea, and exclusive breastfeeding. Improvements were seen across most with the exception of exclusive breastfeeding. Further outreach to pregnant and lactating mothers was recommended at midterm; however, it is unclear if additional program efforts were made to address this. It should be noted that there was already a high percentage of children at baseline who were exclusively breastfed (64 percent) and in order to detect significant changes and to meet the LoA target for this indicator, a much larger sample size would need to be analyzed.

- For child malnutrition indicators, significant reductions in stunting and underweight were seen for children under five, whereas stunting was the only significant indicator for children under two. For children under five, it should be noted that the greatest gains for these same indicators were seen from baseline to midterm and leveled out or increased slightly between midterm and endline.
- Proper disposal of feces and improved access to water supply and sanitation facilities saw significant improvements from baseline to endline across the four regions. It would be expected that diarrheal rates would show similar trends; however, only the Coast and Mid Char saw significant decreases in diarrheal rates.

2.3. SO3: PEP women and adolescent girls empowered

2.3.1. Description of project activities

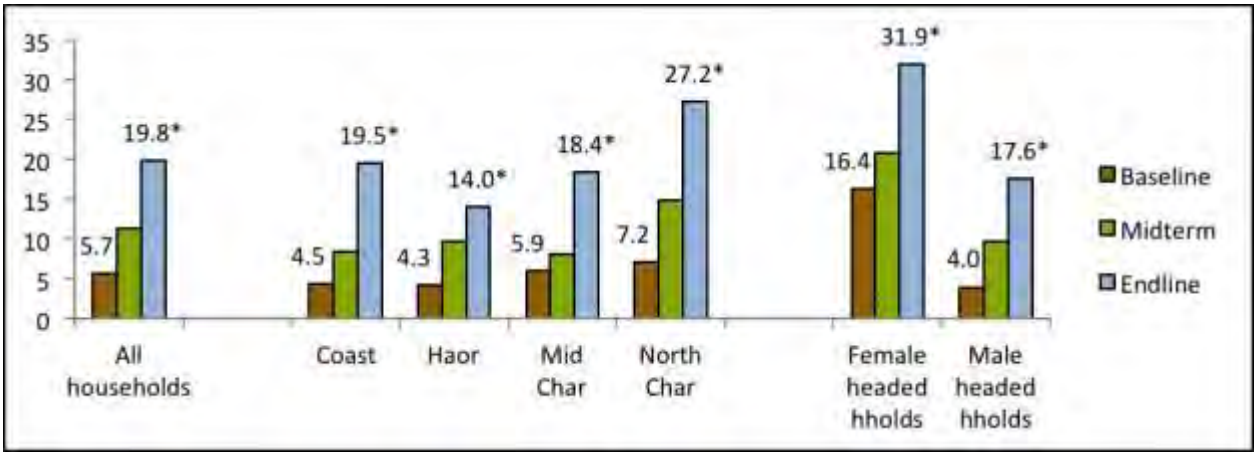
The objective of SO3 was for PEP women and adolescent girls to be empowered in decision making, to engage in activities to reduce food insecurity at various levels, among their families, communities and Union Parishad (UP), and to strengthen local support systems that reduce VAW. The interventions involved engaging village development committees (VDCs)[42] to conduct a gender analysis and integrate gender-based issues into the community action plans. Additional community groups were formed in half of the 1,509 target villages at the midterm to address early education needs (e.g., ECCD centers) and promotion of girls' enrollment in school. About one-third of the target villages also established EKATA groups at the midterm where women and adolescent girls with support of other community members defined empowerment and identified an action plan to address issues such as women's mobility, domestic violence and early marriage

2.3.2. Progress towards key impact indicators

The percent of women with control over economic resources rose sharply in all groups (Figure 28). Across all survey households, the proportion more than tripled, a trend that was also seen by region. More than one-quarter of women in North Char reported control over resources, the highest of any region. The Coast region experienced the largest increase (339 percent), with one-fifth of women reporting control of resources at endline. Despite the significant gains, the indicator fell short of its LoA goal of 25 percent of women overall. The only groups to meet or exceed the goal were women in North Char and female-headed households (32 percent).

[42] According to the SHOUHARDO II Proposal: "VDCs are an umbrella for all different groups working on behalf of the PEP in the community, including EKATA, agriculture, commodity distribution and safety nets. They are also the primary link between the community and the Ward Savas, providing opportunities to institutionalize the role of VDCs in the governance process and to establish work practices that are inclusive and transparent."

Figure 28: Percent of women with control over economic resources, by region and sex of household head



Note: Stars (*) indicate that difference between baseline and endline values are statistically significant at the 10% level.

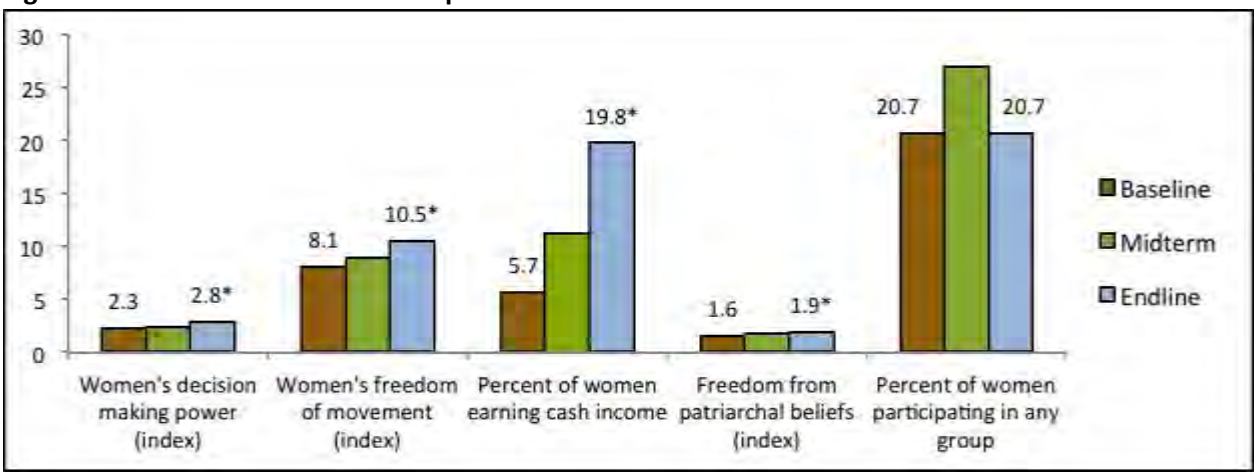
2.3.3. IR 3.1: Increased ability of women to influence decisions

Following recommendations made in the midterm report, strong gains were made overall in indicators of women's empowerment (Figure 29). Except for participation in a group, all key indicators improved steadily and significantly from baseline. The largest proportional improvement was in the percent of women earning cash income; this measure increased in every region by at least 200 percent and in Coast households by more than 300 percent (Annex 6).

Interestingly, the percent of women participating in any group[43] was almost equal at baseline and endline, with large fluctuations in magnitude of variation among different groups: participation increased significantly in Coast households (82 percent) but dropped significantly in Mid Char (28 percent); similarly, participation grew 37 percent in extreme poor households, but fell 40 percent or more in all non-poor groups. For this indicator, almost every group increased from baseline to midterm and decreased from midterm to endline (Annex 6).

[43] "Any Group" includes the following: savings or credit group, community agriculture or homestead garden or IGA group, community health group, parent-teacher association or school management committee, mother's group, women's support group, UP Special Committee, UP Standing Committee, UP disaster committee, or other.

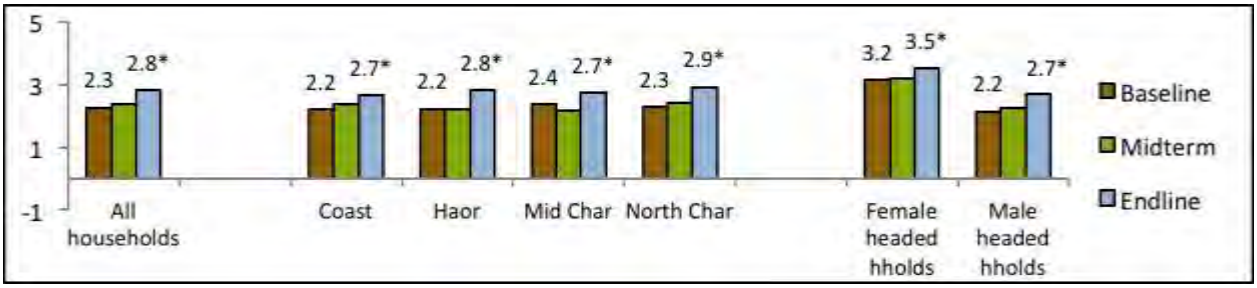
Figure 29: Indicators of women's empowerment



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Women's decision making power was computed on as the average score of the following responses: 4=woman can decide alone, 3=can decide with husband or male HH member, 2=husband makes decision after discussion with wife, 1 = woman not involved in decision; over 12 different types of decision. An overall score of 4 would mean that the woman can decide alone over all types of decision, while a score of 1 would mean that the woman is not involved in any type of decision. This indicator improved by small yet significant amounts across all categories (Figure 30). Gains from midterm to endline were substantially larger compared to the small increases – or decrease in the case of Mid Char – from baseline to midterm.

Figure 30: Index of women's decision making power by region and sex of household head

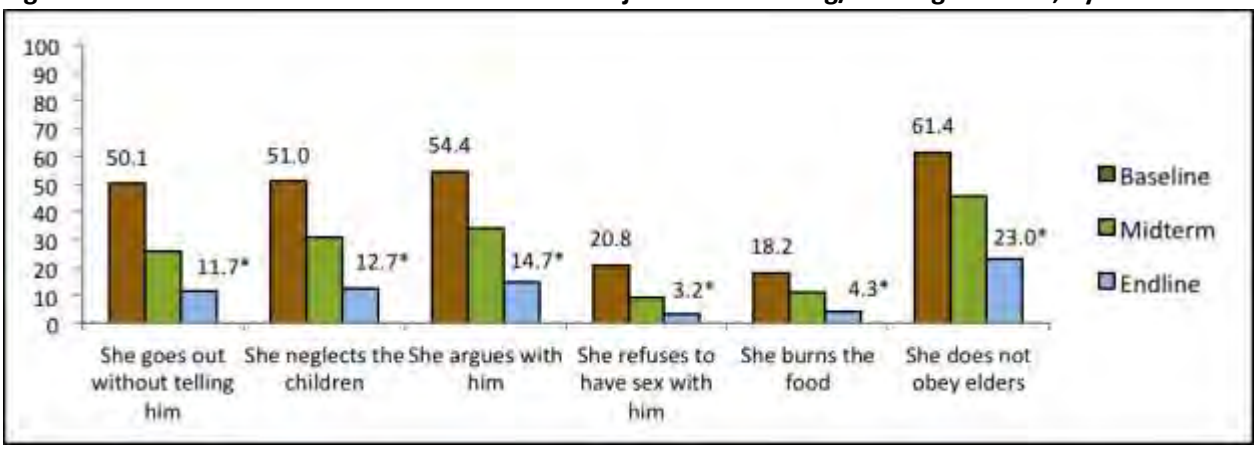


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.3.4. IR 3.2: Men and women working together to end violence

The trend in decreasing domestic violence seen at midterm continued through endline (Figure 31). At endline, the percent of women who believed a man was justified in hitting his wife dropped to less than 15 percent for all situations except for one. Refusing to have sex saw the largest decrease and the lowest value at endline in women who believe it was justification for violence. Almost one-quarter of women still reported that when the wife does not obey elders, the man is justified in using violence, though this is down significantly from 61 percent of women at baseline; the decrease of 63 percent represents the smallest proportional decline, also, of any category.

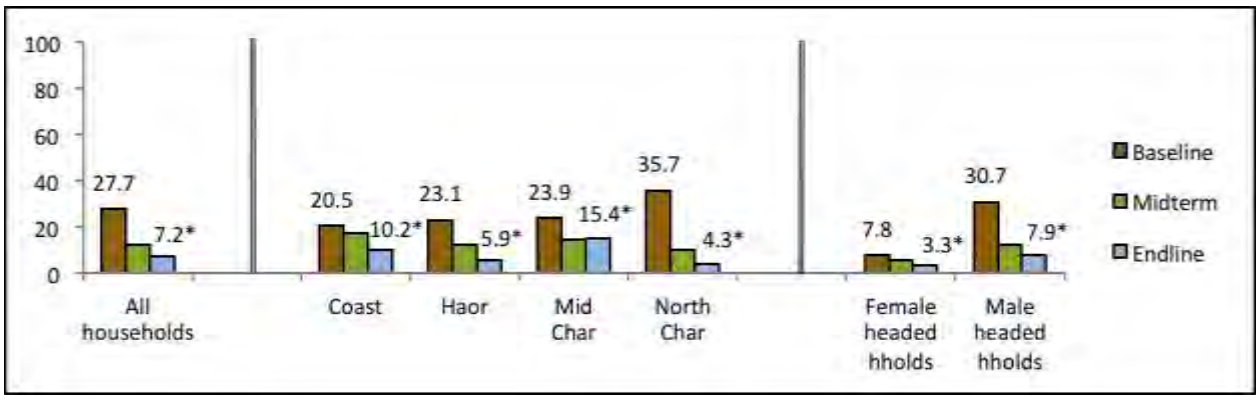
Figure 31: Percent of women who believe a man is justified in hitting/abusing the wife, by situation



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Likewise, actual incidents of domestic violence in the year preceding the survey fell significantly, with the majority of the reduction coming between baseline and midterm (Figure 32). Regionally, North Char households reported the largest decrease (88 percent), as well as the lowest percentage (four percent), while Mid Char saw a slight increase from midterm to 15 percent. Male-headed households also saw substantial improvement, falling from nearly one-third of households to just eight percent. In addition, the percent of households for which assistance was sought following an incident of domestic violence fell 44 percent from 14 percent at baseline to eight percent at endline (Annex 6).

Figure 32: Percent of households in which female was yelled at or struck during the last year by region and sex of household head

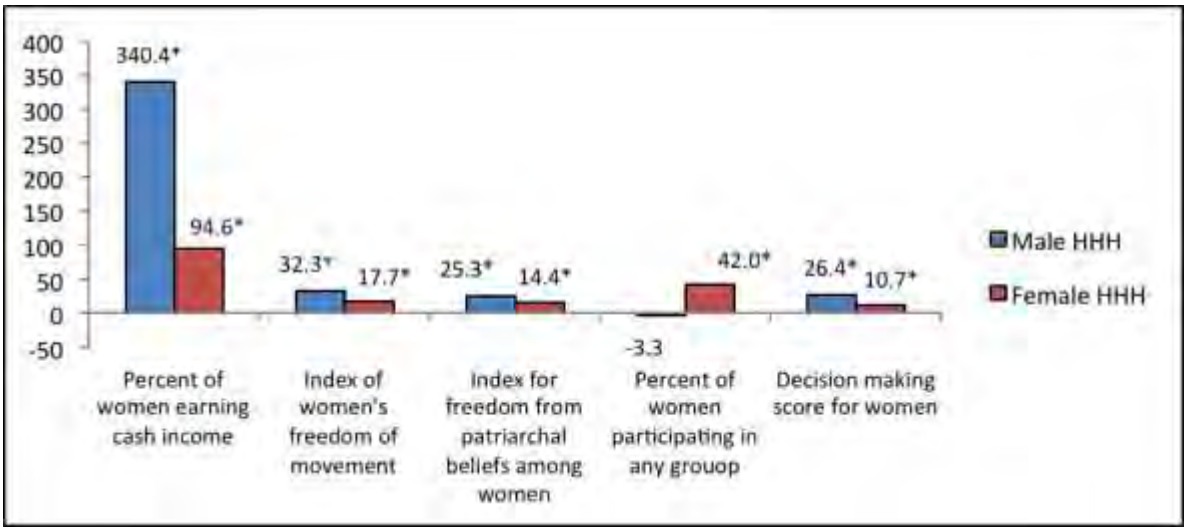


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.3.5. Differences in progress made for female- and male-headed households

Gains in women's empowerment among all survey households were significant during the program period (Figure 33). Of note, the percentage of women earning cash income in male-headed households more than quadrupled from the baseline value; at endline, though, just 18 percent of these households reported this. Male-headed households saw greater increases than female-headed households in all other indicators except the percent of women participating in a group: among male-headed households, the proportion decreased from baseline, while households led by women increased 42 percent.

Figure 33: Percent difference from endline to baseline of key women's empowerment indicators, by sex of household head



Blue bar: % change from baseline to endline, Male HH Red bar: % change from baseline to endline, Female HHH

Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.3.6. Summary of progress toward SO3

SO3: PEP women and adolescent girls empowered in their families, communities and Union Parishad

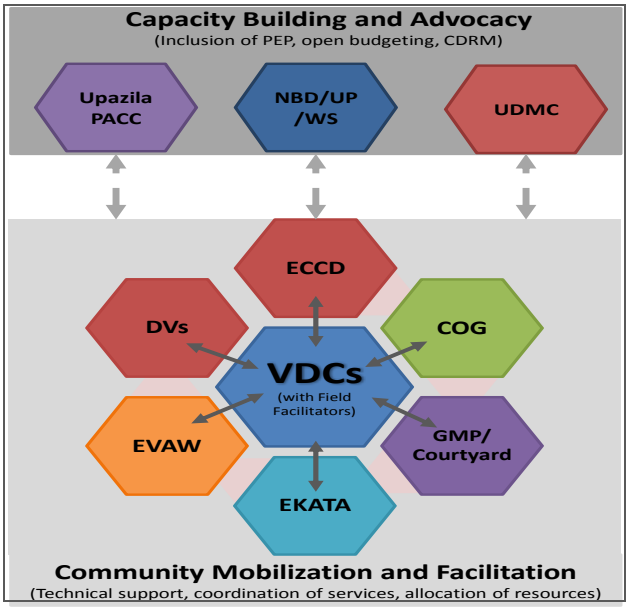
- The percentage of women with control over economic resources increased significantly overall and in every sub-group but did not meet the LoA target. The largest increases came in the Coast region and in male-headed households, though at endline the highest percentages of women with control over resources were in female-headed households and in North Char region.
- Women's empowerment increased substantially in terms of decision-making power, freedom of movement and earning cash income. The largest improvement came in women earning cash income, particularly in male-headed households. Participation in a group fell off after midterm reverting to baseline values.
- Women's decision making power improved significantly in all categories. As expected, decision making power in female-headed households was highest at baseline and endline.
- Beliefs about situations that justify domestic violence changed significantly, with fewer women believing a man is justified in all situations presented. At both baseline and endline "she does not obey elders" was the most likely reason women suggested men would be justified violence.
- Related to beliefs, incidents of domestic violence decreased in every category, with less than one in ten households (seven percent) citing abuse in the previous year. North Char households, in particular, experienced a substantial decrease; this region reported the highest percent at baseline and lowest percent at endline. Conversely, Mid Char experienced a very slight increase from midterm and with the highest reported incidence at endline than other regions.
- Nearly equal progress was made among both PEP and non-poor households in the women's empowerment indicators. The notable difference related to seeking assistance after an incident of violence, in which PEP households were much less likely to seek help at endline.

2.4. SO4: Responsiveness and accountability to the PEP of local elected bodies and government service providers increased

2.4.1. Description of project activities

As an innovative governance component, SO4 sought to increase the responsiveness and accountability of government to the needs of PEP households, particularly women. To this end, the program established Project Advisory and Coordinating Committees (PACCs) and VDCs, which linked SO4 with each of the other SOs (Figure 34). PACCs included ministry representatives and elected officials at various levels (e.g., national, divisional, district and upazila), joined by CARE program staff, functioning as a coordinating body for the government institutions involved in the program, as a platform for capacity building and trainings, and as a forum for policy discussion. The VDCs functioned to empower local communities to develop and implement community-driven action plans and to liaise between PEP households and government service providers or other representative bodies.

Figure 34: Role of SO4 and VDC in linking with other SOs



2.4.2. IR 4.2: PEP access to entitlements and services increased, including safety nets and natural resources

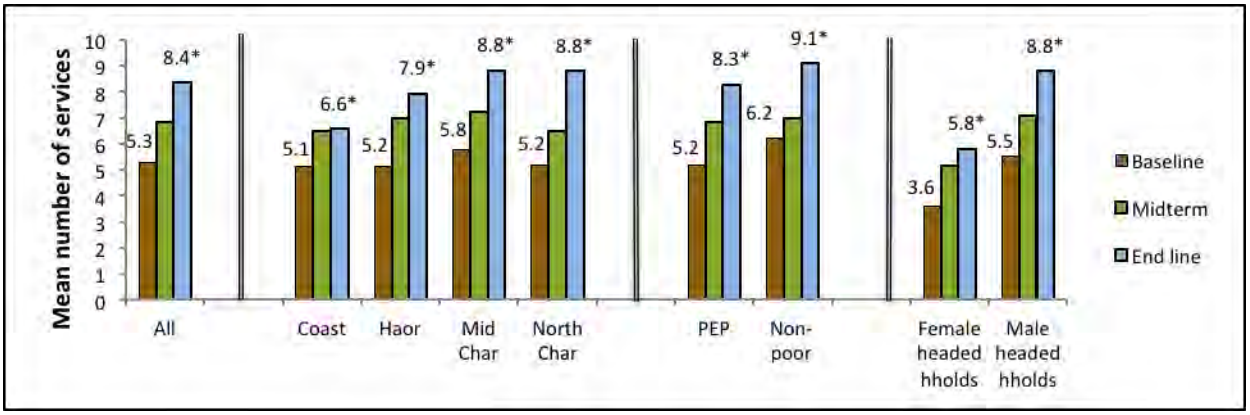
SO4 activities were largely community-based, however, certain indicators in the QPE were calculated for household participation in program activities; specifically those where resources were accessed, safety nets engaged, and common property resources utilized., Program participation in SO4 activities was extremely high for all surveyed households over the life of the project, from 98.5 percent of households in baseline to 99.9 at endline.

All surveyed households utilized more services on average than at baseline (Figure 35).[44] Regionally, Coast household saw the smallest growth, utilizing the least number of services at both baseline and endline, with little increase during the second half of the program period. In contrast, Mid Char and North Char used the most services of any region. Except for Coast households, the magnitude of change varied little for any category. At endline, the most common services included: primary health care (93 percent of households), Union Parishad (87 percent), government family planning (76 percent), family planning services (76 percent), and Grammo Shalish (72 percent).[45] Of the services included in the

[44] The three response categories for service utilization were 'frequently', 'sometimes', and 'never.' In the baseline and midterm calculations values were mis-coded: 'sometimes' and 'never' were coded as utilized, instead of 'frequently' and 'sometimes.'
[45] Government family planning and family planning services were presented as separate choices on the questionnaire. See Annex 6

survey, each one was used by at least one-third of households, with the Department of Fisheries and the Department of Women's Affairs experiencing the largest increases in use (210 percent and 188 percent, respectively).

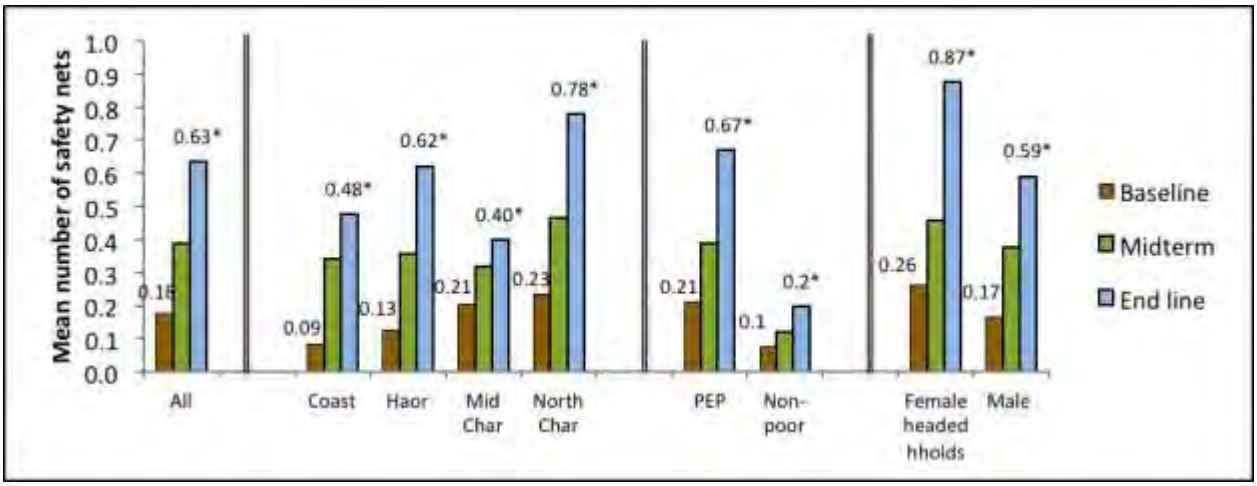
Figure 35: Mean number of services utilized, by region, well-being category and sex of household head



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Despite remaining generally low, on average less than one type of safety net utilized (0.63) out of a total of 12 possible at the endline, the average number of safety nets increased significantly from baseline to endline (Figure 36). The largest regional increases came in Coast and Haor households. Female-headed households engaged in the most safety nets of any group, both at baseline and endline. As at midterm, the largest increase in any safety net was for government Vulnerable Group Feeding (VGF), which increased 880 percent to 40 percent of households. The most-used safety net, however, was SHOUHARDO II, reported by 76 percent of households.[46]

Figure 36: Average number of safety nets engaged in, by region, well-being category and sex of household head

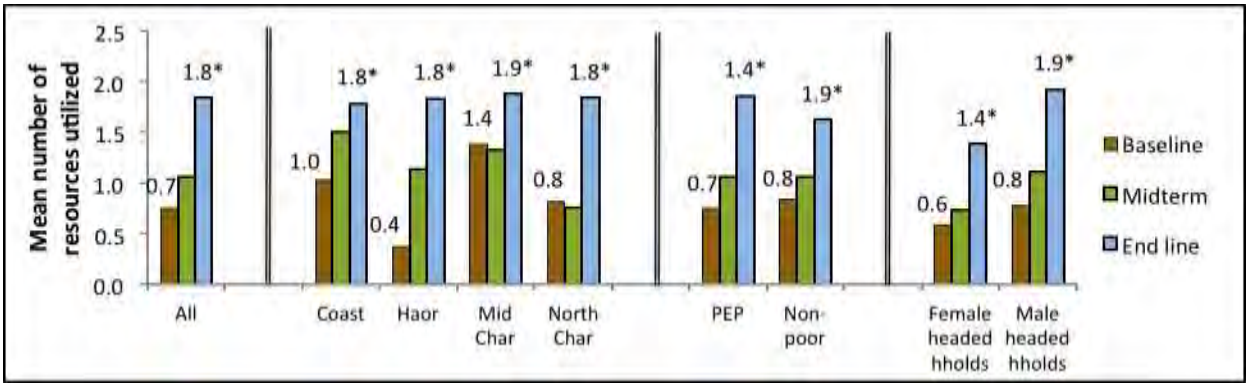


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.
Note: Baseline and midterm have been revised for this data.

[46] The endline survey included two safety nets, SHOUHARDO II and self-help groups, neither of which was in the baseline or midterm surveys.

Across all survey households, the average number of common property resources utilized (resources such as ponds, forests, embankments that are not owned by individuals but are managed and use rights are provided by communities or local authorities) more than doubled, though no group used more than two resources (Figure 37). The most notable increase was in Haor, which saw a nearly 400 percent increase in use. In contrast, Mid Char increased by 36 percent from baseline, and actually decreased slightly between baseline and midterm. PEP and male-headed households used the most common property resources. At endline, the most commonly used resources included river/canal (68 percent of households), beel/haor (63 percent), forest land (62 percent), and grazing land (60 percent). The largest increases in use came for Community-based Organization (CBO) Water Body, which grew in use 271 percent, and railway grounds, which increased 149 percent.

Figure 37: Average number of common property resource utilized by region, well-being category, and sex of household head[47]

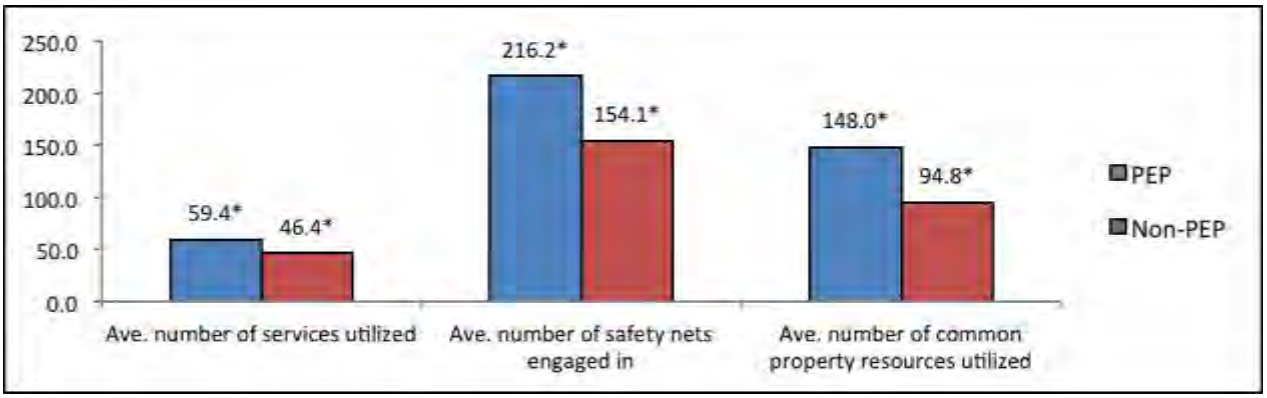


Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.4.1. Differences in progress made for the PEP and non-poor

While both groups experienced increases in all areas, PEP households saw larger and more significant improvements for SO4 measures than did non-poor households (Figure 38). PEP households equaled the overall average gains for average number of services utilized and common property services utilized. The PEP household increase in safety net usage was below the overall average, though PEP households used more safety nets than average at both baseline and endline.

Figure 38: Percent difference from baseline to endline, government and service indicators, by well-being category



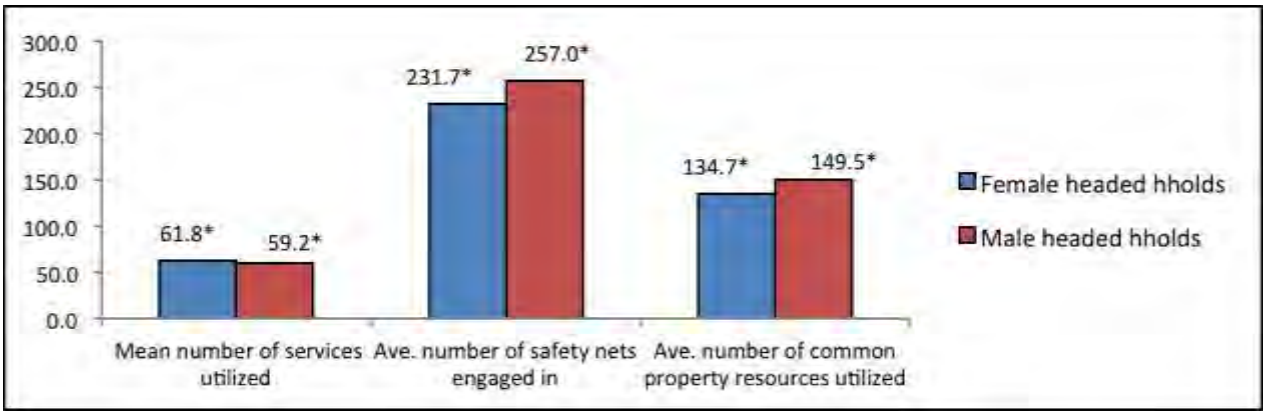
Blue bar: % change from baseline to endline, PEP Red bar: % change from baseline to endline, non-PEP

Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.4.2. Differences in progress made for female- and male-headed households

Male- and female-headed households experienced nearly identical significant increases in measures of access and use of services (Figure 39). Regarding use of safety nets and common property resources, slightly larger gains were observed in households led by men. The opposite is true for the average number of service utilized, though the difference between male-headed households and female-headed households in this category is minimal.

Figure 39: Percent different from baseline to endline, government and service indicators, by sex of household head



Blue bar: % change from baseline to endline, Male HH Red bar: % change from baseline to endline, Female HHH

Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.4.3. Summary of progress toward SO4

SO4: Local elected bodies and government service providers' responsiveness and accountability to the PEP increased.

- Because the quantitative analysis was primarily focused at the household level, discussion regarding progress toward SO4 is limited to indicators measured in IR4.2. This household-level

indicator represents only a limited lens on the SO4 interventions, which are mostly directed at the level local level governments.

- Overall survey households, regions, and both male- and female-headed households, significant increases were observed in the average number of services utilized, the average number of safety nets engaged in, and the average number of common property resources utilized.
- No clear trends were observed for any one region – only that all regions increased substantially in every area.
- The same is true for sex of household head: considerable increases were seen for both male- and female-headed households. Male-headed households used accessed more services and utilized more common property resources at both baseline and endline. Meanwhile, female-headed households on average engaged in more safety nets at both baseline and endline.

2.5. SO5: Improved preparation, mitigation and response to disasters and adaptation to climate change

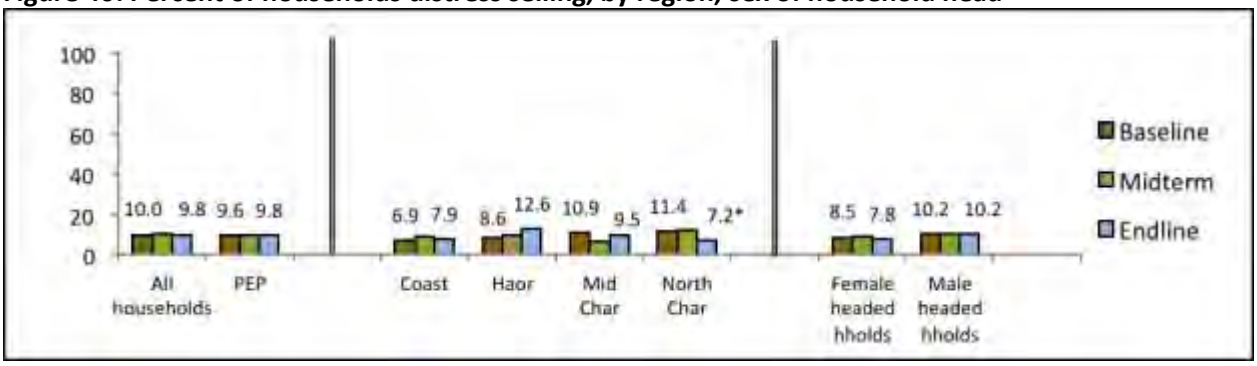
2.5.1. Description of project activities

SO5 was designed to achieve progress in disaster preparation and response and in climate change adaptations with the aim to build longer-term resilience among PEP households. This objective included the following interventions: reactivating Union Disaster Management Committees (UDMC, linked to SO4) and their oversight of community disaster volunteers and contingency planning; conducting participatory Climate Vulnerability and Capacity Analysis (CVCA) that guided adaption plans, and which applied to agricultural technologies promoted in SO1; improving early warning and forecasting systems; creating and maintaining disaster resistant infrastructure such as water and sanitation (linked to SO2), embankment, wave protection walls, cyclone and flood shelters, drainage culverts, transportation systems, etc.; strengthening humanitarian response capacity through pre-positioned goods; and engaging youth in Climate and Disaster Risk Management (CDRM) through school-based teen brigades (SBTB).

2.5.2. Progress toward key impact indicators

No significant change was observed in the percentage of all households or the percentage of PEP household distress selling (Figure 40). Both categories included 10 percent or less of households, with minimal variation regionally or by sex of household head. The largest fluctuation came in Haor district, with a 46 percent increase in households selling, while North Char experienced the only significant change – a 37 percent decrease in distress selling. The LoA goal of seven percent of PEP households distress selling was not met, however when the endline result was compared to the LoA target, no significant difference was found.

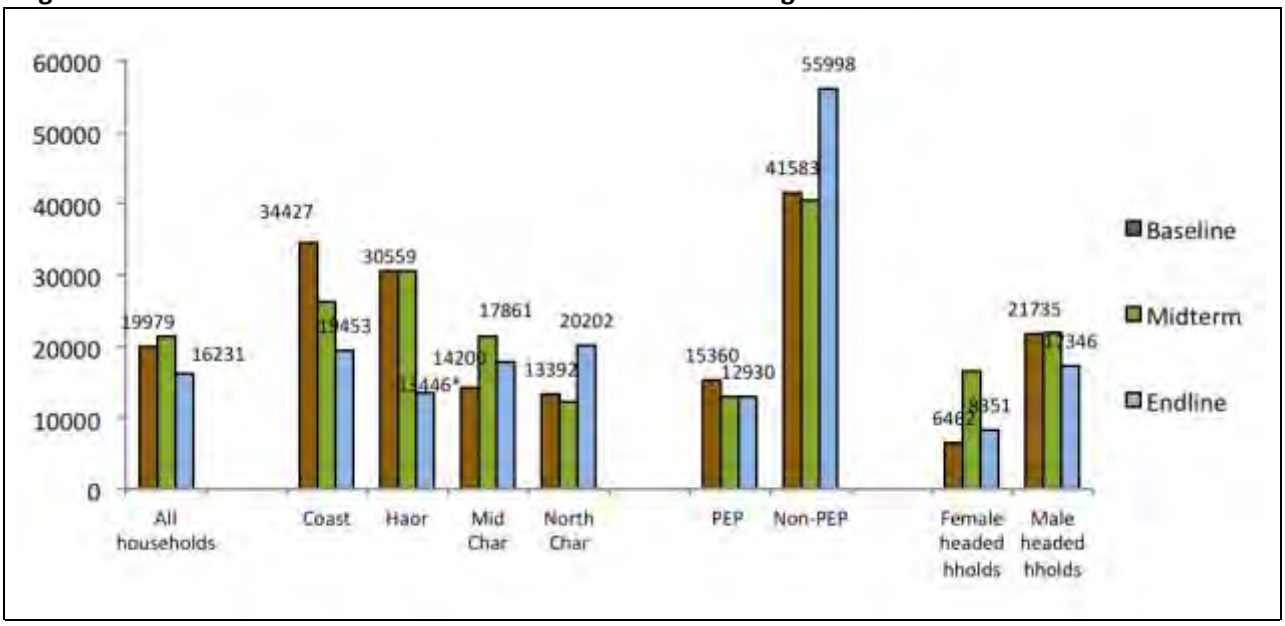
Figure 40: Percent of households distress selling, by region, sex of household head



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

The Taka value of distress sales decreased 19 percent overall to 16,231TK and PEP households decreased distress selling by 17 percent to 12,500TK, but no significance was observed (Annex 6). The only significant change was in Haor region, where the value of sales decreased 56 percent to 13,400TK. Additionally, the Hoar was the only region to exceed the LoA target. However, when comparing the Taka value of distress sells overall, it was found that the endline result was not significantly different from the LoA target of 15,000TK (Figure 41).

Figure 41: 2010 Taka value of household assets sold to meet urgent household need



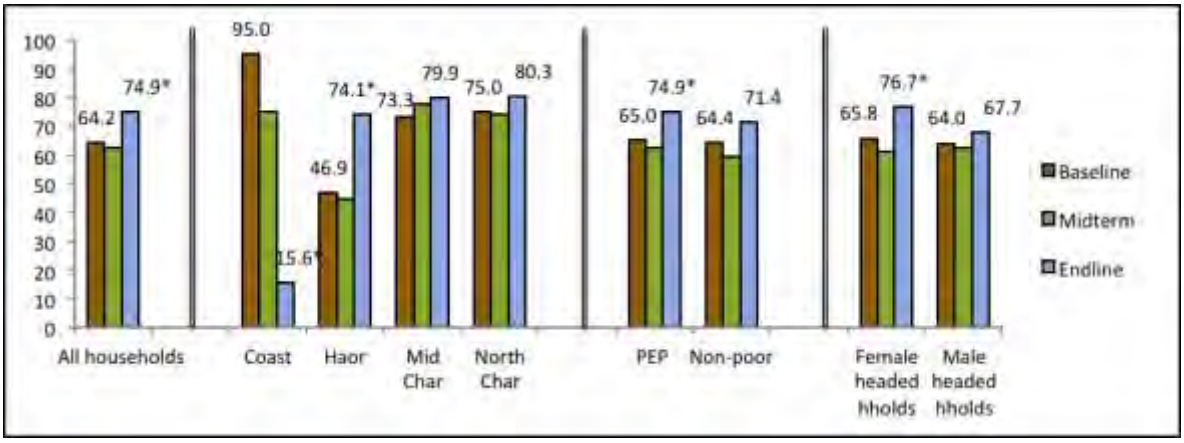
Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.
Note: Two extreme cases (more than 4 times greater than the next largest value) of value of assets sold were excluded from the analysis as outliers.

2.5.3. IR 5.1: Disaster contingency systems in place and functioning

Disaster experiences varied widely across categories (Figure 42). Overall, the percentage of households that experience a disaster in the year preceding the survey increased. This trend was true for three of the four regions and both male- and female-headed households. The most notable point was a drop in Coast households experiencing a disaster from 95 percent at baseline to just 16 percent at endline.

More than half of households reported experiencing a flood and one-quarter of households experienced no disaster. Other disasters mentioned include heavy rains (24 percent) and wind storms (23 percent).

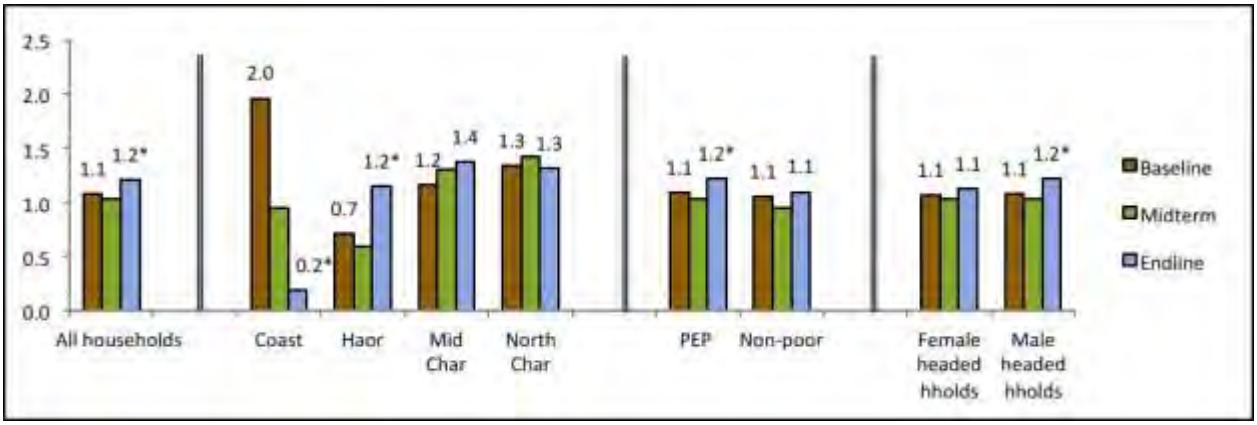
Figure 42: Percent of households that experienced any disaster in the last 12 months, by region, well-being category, and sex of household head



Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

Little significance was observed in the average number of disasters experienced (Figure 43). On average, households reported to have experienced just over one disaster. As with the previous indicator, this measure was most notable in Coast households, which fell from two disasters to 0.2. Program activities led to greater knowledge of disaster mitigation strategies that could reduce impact of future disasters. The most frequently mentioned measures were structural improvements to the home (48 percent of households), food stocks (39 percent), and water stocks (18 percent). At both baseline and midterm, more than 40 percent of houses said no measure existed to reduce impact in the future. At endline, just seven percent of houses gave this response (Annex 6).

Figure 43: Average number of disasters experienced, by region, well-being category, and sex of household head



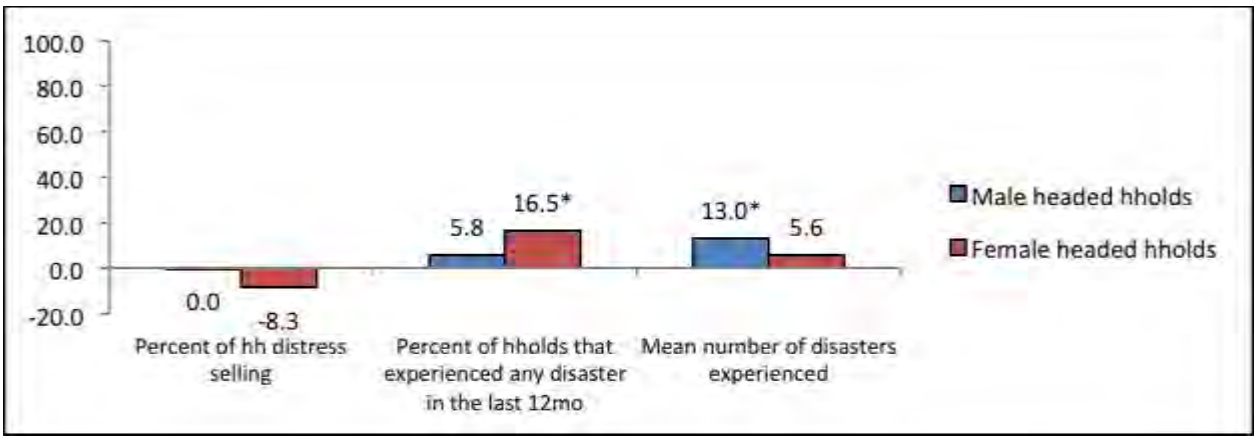
Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.5.4. Differences in progress made for female- and male-headed households

Changes in disaster-related measures during the program period varied for male- and female-headed households. The significant changes included (1) a 17 percent increase for female-headed households

that experienced a disaster and (2) a 13 percent increase in the number of disasters experienced for male-headed households. This latter measure, though significant, increased from 1.1 to 1.2 disasters.

Figure 44: Percent difference from baseline to endline, experiential disaster management, by sex of household head



Blue bar: % change from baseline to endline, Male HH Red bar: % change from baseline to endline, Female HHH

Note: Stars (*) indicate that difference between endline and baseline value is statistically significant at the 10% level or greater.

2.5.5. Summary of progress toward SO5

SO5: Targeted community members and government institutions are better prepared for, mitigate, and respond to disasters and adapt to climate change.

- As in SO4, the household-level information relating to SO5 interventions offers only a very limited perspective on the overall impacts of the interventions in this area. It should also be emphasized that the household-level indicators are very sensitive to the degree to which households were exposed to shocks prior to the time of the survey. The quantitative analysis alone cannot offer much discussion of progress toward achieving SO5 without community-level indicators that demonstrate the progress of communities' or local government institutions' progress.
- No change was seen in the impact indicators that measured the percentage of households distress selling or the value of these sales. Both measures varied widely across regions, with no clear trend.
- The percent of households that experienced a disaster and the number of disasters experienced increased or remained about the same overall and for both male- and female-headed households. The only notable change was in the Coast region, where both indicators dropped sharply.
- While the latter indicators describe experiences rather than behavior change, there was no association between experiencing disasters and distress selling. The percentage of Coast households distress selling increased while the same region saw a sharp drop in disasters. This suggested that those households that experienced disasters may use other coping strategies or that households distress sell for other reasons beyond experiencing disasters.

3. Comparative effectiveness of the MCHN/PEP and PM2A programming approaches

As noted in the introduction to this report, the SHOUHARDO II project was designed to incorporate a community randomized controlled trial (RCT) to evaluate the relative impact of the traditional SHOUHARDO MCHN/PEP approach and the PM2A approach. In review, both approaches follow the basic tenets of the PM2A approach that (a) the first "1000 days" is the window of opportunity for preventing malnutrition; (b) efforts should be focused on *preventing* rather than curing malnutrition; and (c) the entire food-care-health triad should address underlying causes of malnutrition. The only difference between the two approaches as applied in the context of SHOUHARDO II was that the MCHN/PEP approach employs socio-economic targeting while the PM2A approach did not. Additionally, because PM2A provided supplementary nutrition rations to both PEP and non-poor women and children, PM2A cost more to implement than MCHN/PEP strategy.

Table 4 summarizes the design of the RCT. All PEP households, regardless of whether they were randomly selected into a MCHN/PEP or PM2A village, were eligible to participate in SHOUHARDO II project activities, including MCHN activities (for those with a pregnant woman and/or child under-two) and activities falling under the other SOs. In the case of the non-poor, those in PM2A villages were only eligible to participate in the MCHN activities, which involved the receipt of supplementary nutritional rations, while those in MCHN/PEP villages were not eligible to participate in any project activity.

Table 4: Design of the randomized controlled trial to evaluate the relative effectiveness of the MCHN/PEP and PM2A approaches

	MCHN/PEP	PM2A
PEP	▪ Eligible to participate in MCHN (SO2) and all other project interventions (S01, S03, S04, SO5) ▪ Received supplementary nutritional rations	▪ Eligible to participate in MCHN (SO2) and all other project interventions (S01, S03, S04, SO5) ▪ Received supplementary nutritional rations
Non-poor	▪ Not eligible to participate in any project interventions. ▪ Did not receive supplementary nutritional rations	▪ Eligible to participate in MCHN (SO2) interventions only ▪ Received supplementary nutritional rations

It is important to note that the idea behind the MCHN/PEP targeting approach is that if limited resources are directed towards those who need them most—the poorest—then greater improvements in measures of well-being such as children's nutritional status can be expected. This basic principle cannot be tested in the present evaluation because the same amount of resources was not made available to both MCHN/PEP and PM2A villages. In fact we can hypothesize that the PM2A approach was more successful at reducing child malnutrition given that additional resources, such as food assistance, were extended to a larger percentage of households in PM2A villages.[48]

[48] The non-poor make up 30 percent of households in the average SHOUHARDO II village.

The randomized allocation of villages at the start of the project across the two programming approaches, in conjunction with the survey sampling design (which stratified by programming approach), should in principal allow us to evaluate their relative impacts through simple comparisons of changes from baseline to endline in malnutrition prevalence of households in MCHN/PEP and PM2A villages. To judge whether this comparison was valid, it was important to determine whether the programming approaches were successfully implemented as laid out in Table 4 and whether the randomization process actually worked to equalize the groups at baseline. These tasks were carried out in the next two sections. Note that all analyses were undertaken only for households for which anthropometric data are available, including households with children under-five years with valid data on age, height and weight of children.

3.1. Success in implementing the programming approaches

Table 5 shows the percent of households participating in SHOUHARDO II interventions for MCHN/PEP and PM2A villages. Given the design of the RCT, we expected that participation prevalence was roughly equal for all SOs except S02, the latter for which participation should be higher in PM2A villages where eligibility was universal. Indeed participation in MCHN activities was higher in PM2A villages, particularly for receipts of food rations. Participation in SO1 interventions and savings groups and EDDC were roughly equal across the two sets of villages. However, participation by children's mothers in EKATA groups was significantly higher in PM2A villages, and in fact there was a very large difference in the percent of villages with an EKATA group. Only 38 percent of MCHN/PEP villages had an EKATA group while almost 80 percent of PM2A villages did, which was surprising considering that EKATA groups were expected to be present in all villages. These findings suggest that PM2A villages were favored in the establishment of SHOUHARDO II EKATA groups. If these groups were having a positive impact on children's nutritional status as they did in the SHOUHARDO I project, then this unequal allocation of project interventions would bias the results of the RCT towards PM2A villages.

Table 5: Percent of households participating in SHOUHARDO II interventions, by programming approach

	MCHN/PEP	PM2A	Difference	
SO1 Availability of and access to nutritious foods				
Agriculture/income generation	66.2	60.3	-5.9	
SO2 Health, hygiene and nutrition of children <2				
MCHN (any SO2 intervention)	72.9	88.2	15.3	***
Ever received a food ration	57.2	77.6	20.3	***
SO3 Women's empowerment				
EKATA group (mother is member)	6.2	9.5	3.3	**
Percent of villages with an EKATA group	38.3	78.6	40.3	***
Savings group (mother is member)	10.0	10.6	0.6	
ECCD	12.4	14.4	2.0	

Note: Stars indicate that the difference is statistically significant at the 1(***) or 5(**) percent levels.

Table 6 gives a breakdown of participation prevalence for the PEP and non-PEP within the two programming approach groups. In the case of SO1 and SO3 interventions, the participation of the non-poor in both groups was quite low with the exception of ECCD, which had near 10 percent participation in both. Consistent with the evaluation design, the participation in MCHN interventions of the non-poor in PM2A villages was quite high and roughly on par with that of the PEP. The participation of the non-poor in the MCHN/PEP villages was low, yet a substantial percentage—30%—did participate in MCHN activities. This, too, was a departure from the design of the RCT and would favor MCHN/PEP villages in terms of recorded reductions in child malnutrition.

Table 6: Percent of households participating in SHOUHARDO II interventions, by well-being category and programming approach

	MCHN/PEP		PM2A	
	PEP	Non-PEP	PEP	Non-PEP
SO1 Availability of and access to nutritious foods				
Agriculture/income generation	87.1	8.8	85.3	5.8
SO2 Health, hygiene and nutrition of children <2				
MCHN (Any SO2 intervention)	88.4	30.3	90.3	83.7
Ever received a food ration	75.6	7.1	79.4	73.6
SO3 Women's empowerment				
EKATA group (mother is member)	8.1	1.1	12.3	3.6
Savings group (mother is member)	12.9	2.1	13.4	4.6
ECCD	13.7	8.9	16.1	10.8
SHOUHARDO II project				
	95.1	39.6	95.9	87.1

3.2. Success of randomization in equalizing MCHN/PEP and PM2A households at baseline

Another factor that could bias the results of the impact evaluation was the presence of inequality in socio-economic or physical well-being of the MCHN/PEP and PM2A groups of households at baseline. The randomization process should in principal render these two groups equal in all respects.

Table 7 presents data on household and village characteristics that either would not be expected to change over a four-year period or, in most cases, were measured at baseline. In terms of household characteristics, a substantially higher percentage of households in the PM2A than the MCHN/PEP group reside in the Coast region, and a lower percent in North Char. Households in the MCHN/PEP group were also disproportionately more likely to fall into the “extreme poor” socio-economic status group and less likely to fall into the “lower middle” group, that is, they were more likely to be poor. This difference was also reflected in the fact that 55.2 percent of MCHN villages were classified at baseline as “extremely vulnerable” while only 47.3 percent of PM2A villages were. Finally, although one indicator of remoteness (the percent of villages for which the nearest town was more than a 1 hour walk) was equalized across the groups, another (the percent of villages for which the nearest district headquarters

was greater than a 2 hour walk) indicates that PM2A villages as a group were somewhat more remote than MCHN/PEP villages.

Overall, the fact that households in MCHN/PEP villages tended to be poorer than those in PM2A villages means that recorded reductions over time in malnutrition may be relatively lower for them than if poverty were equalized between the two groups. This disadvantage to the MCHN/PEP group may be partially offset by the fact that PM2A villages had a slight tendency to be more remote.

Table 7: Baseline household and village characteristics, by programming approach

	MCHN/PEP	PM2A	Difference	
Household characteristics				
Age of household head	41.1	41.6	0.5	
Percent female-headed households	6.9	7.7	0.9	
Region of residence				
Coast	4.1	11.6	7.5	***
Haor	44.6	45.1	0.5	
Mid Char	16.1	18.4	2.3	
North Char	35.2	24.9	-10.3	***
Well-being category (baseline)				
Extreme poor	15.5	11.2	-4.2	*
Poor	55.4	56.9	1.5	
Lower middle	12.4	15.9	3.4	*
Middle	9.9	9.7	-0.2	
Rich	6.8	6.4	-0.5	
Village characteristics				
Extremely vulnerable	55.2	47.3	-7.9	
Size (number of households)	512.2	532.7	20.4	
CARE is implementing agency	7.8	9.7	1.9	
Nearest town >1 hr walk	39.9	40.8	1.0	
Upazila headquarters >2 h walk	43.0	51.9	8.9	*

Note: Stars indicate that the difference is statistically significant at the 1(***) or 5(**) percent levels.

3.3. Comparison of changes from baseline to endline in malnutrition prevalence across MCHN/PEP and PM2A households

As seen in Table, for both children under five and children under two the reduction between the baseline and endline surveys in malnutrition prevalence—the percent of stunted, wasted and underweight children—were greater for the PM2A group.

Table 6. Change in child malnutrition prevalence from baseline to endline, by programming approach

	MCHN/PEP			PM2A			Difference in difference (PM2A-MCHN/PEP)
	Baseline	Endline	Change	Baseline	Endline	Change	
Children under five							
Stunting	58.4	49.9	-8.5	59.9	46.8	-13.1	-4.6
Wasting	14.3	11.5	-2.8	15.9	10.2	-5.7	-2.9
Underweight	40.7	36.0	-4.7	42.7	33.5	-9.2	-4.5
Children under two							
Stunting	53.5	43.9	-9.6	49.4	39.0	-10.4	-0.8
Wasting	16.0	12.7	-3.3	17.1	9.4	-7.7	-4.4
Underweight	36.7	31.0	-5.7	32.8	26.4	-6.4	-0.7

Note: Stars indicate that the difference is statistically significant at the 1(***) or 5(**) percent levels.

Several factors explain the greater recorded reductions in child malnutrition among PM2A households. First, additional resources were extended to a larger percentage of households in PM2A villages. Second, the EKATA groups that successfully helped reduced malnutrition prevalence in the SHOUHARDO I project were established in PM2A villages at a much higher rate than in MCHN/PEP villages. Third, households in MCHN/PEP villages tended to be poorer than those in PM2A villages at the start of the project. Given these circumstances regarding project implementation and findings from the data analysis—and taking into account the fact that the basic PM2A principals were applied throughout—we can come to no conclusions regarding the relative merits of the PM2A and MCHN/PEP approaches as applied in the SHOUHARDO II project.

4. Conclusions and recommendations

4.1. General conclusions

The findings from the final quantitative performance survey support the following general conclusions about the trends in project outcome and impact indicators:

- In SO1 through SO3, substantial improvements in all impact indicators are observed, comparing baseline to final results. In some cases, improvements happened largely from baseline to midterm, and stabilized from midterm to final. Specifically in SO2, stunting for children under-five and under two showed greatest gains from baseline to midterm. Likewise, the percent of households with access to improved drinking water and percent of children whose feces were disposed of properly saw similar trends. However, but most indicators across the SOs showed a steady improvement from baseline through midterm to endline.
- These improvements in impact indicators are consistent with the reported changes in behaviors of households (adoption of improved agricultural practices, improved access to markets and

agricultural services, adoption of child feeding practices, changes in attitudes about violence to women, etc.)

- Changes in the household-level indicators for SO4 improved substantially (number of services utilized by households increased by almost 60 percent), while the changes in household level indicators for SO5 (percent of households with distress sales and average value of distress sales) were statistically unchanged from baseline to endline. However, it is important to stress that these indicators do not capture the main impacts of the interventions under these two SOs, which have been directed primarily toward community and local-government stakeholders. The effects of these interventions can only be expected to show significant impact at household level over the course of a longer period of time than the span of these project surveys.
- Direct comparison of malnutrition indicators between the two SO2 programming approaches show better results for the PM2A programming approach compared with the targeted MCHN/PEP approach. However, several confounding factors may explain the greater recorded reductions in child malnutrition prevalence among PM2A households including PM2A having access to additional resources, their higher rates of establishing EKATA groups, and their overall higher proportion of non-poor households than compared to MCHN/PEP villages. Given these circumstances, no strong conclusions can be drawn regarding the differences of the two approaches on nutritional outcomes. However, while there are not clear differences with regard to nutritional outcomes, it is important to keep in mind the higher implementation cost associated with the non-targeted PM2A approach as compared with the MCHN/PEP approaches that targets resource distribution only to PEP households.

4.2. Recommendations for Qualitative Impact Evaluation of SHOUHARDO II

Following are several issues raised from the QPE and questions that require further qualitative investigation..

General Issues and Questions

- The Haor Region stands out compared to other regions because of smaller improvements or negative outcomes (e.g. Stunting among children under five, spike in disasters and large increase in distress selling, lower participation in SO3). Few specific trends are seen within any one SO, though qualitative analysis across SOs may help describe some underlying causes.
- Many indicators – especially impact-level measures – progressed more between baseline and midterm than from midterm to endline. Can this be explained by program implementation, household factors, or something else?

SO1

- Explore the different types of technology adopted by female-headed households and male-headed households. Did these groups adopt similar technologies? What caused each group to adopt certain technologies?
- Regarding household income, what differences exist between COGs?
- What is the effect of age of household head on the pattern of adopted livelihood strategies, and on household income level?

- What is the effect of a household receiving remittances on the pattern of adopted livelihood strategies?
- How do measures of household food insecurity correlate with flooding that occurred in North Char, Mid Char and Haor Regions?
- What are the reasons for adoption of recommended technologies by households that did not participate directly in SO1 interventions? Was this trend a result of demonstration effects from project participants, or are there factors other than SHOUHARDO II interventions that explain the adoption of these practices in the SHOUHARDO intervention areas.

SO2

- Significant reductions were observed in stunting, wasting, and underweight in children under five years old, but in children under two years old, only stunting decreased significantly. What household or program factors could explain this?
- Among children under five years old, both males and females experienced an increase in wasting from midterm to endline. To what extent could this reflect an attitude of care givers giving up on children who are seen as unable to survive? What other conditions could explain this increase?
- What variables affected mothers' perceptions of hygiene practices (hand washing, in particular) and how did these variables affect perception? How can this information be leveraged to increase the perception that hygiene is important?

SO3

- The overall rate of women participating in a group increased from 21 percent at baseline to more than 25 percent at midterm, and then it dropped back to 21 percent at endline. Wide variations in the magnitude of change were observed at baseline, midterm and endline and across regions. (Annex 6). What could explain the overall drop in participation and the fluctuations over time and geography?
- What are the causes of violence in female-headed households? Is the offender a non-spouse partner, a stranger, or someone else? Does age or presence of EKATA group have an effect on incidence of violence?

SO4

- Did PEP households have sufficient access to or knowledge of safety net services? What factors may have limited their use?
- Do people believe that government services have improved? Has access to government services improved? What additional deficiencies exist and how can these be addressed?

SO5

- To what extent is the increase in distress selling in Haor related to the spike in disaster experienced in this region? Is distress selling in Haor connected in any way to malnutrition in the region?

- North Char, Mid Char and Haor are susceptible to annual, large-scale flooding. These regions also experienced a notable cold wave from late 2012 through early 2013. The Coast did not experience these events. How have these experiences factored into the disaster planning and management of the regions? How are communities managing weather-related events compared to before the project?
- Do people perceive themselves to be less vulnerable to shocks than they were before the project? Why or why not? Do female heads of households view themselves as more vulnerable to shocks than male heads of households? Similarly, do males perceive themselves to be less vulnerable than females? Why or why not?

4.3. Recommendation for future project design and evaluation

- In future project performance evaluations, it is highly recommended to integrate quantitative and qualitative components into a single integrated study. A major shortcoming of this quantitative evaluation is that the team did not have the opportunity to collect qualitative information from community members, organizations, local governments, and other stakeholders that would have provided a richer context in which to interpret the quantitative results, understand the reasons for why changes did or did not occur over the life of the project, and understand the ways in which project interventions supported the observed patterns of change in the project outcome and impact variables.

[ii] FANTA-2. 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). FHI 360, 2010.