BENEFICIARY BASED SAMPLE SURVEY (BBSS)
2018 FINAL REPORT

SHOUHARDO III

CARE BANGLADESH

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DMA Team

LIST OF ABBREVIATIONS

ANC	:	Ante-Natal Care
ARR	:	Annual Results Report
BBSS	:	Beneficiary Based Sample Survey
BMD	:	Bangladesh Meteorological Department
CBO	:	Community Based Organization
CHD	:	Comprehensive Homestead Development
COG	:	Core Operational Group
CSI	:	Coping Strategy Index
DFAP	:	Development Food Assistance Program
DMA	:	Data Management Aid
EKATA	:	Empowering Knowledge and Transformative Action
EPI	:	Expanded Program of Immunization
EVAW	:	Ending Violence against Women
FANTA	:	Food and Nutrition Technical Assistance
FFP	:	Food for Peace
FFWC	:	Flood Forecasting and Warning Center
FLAIRb	:	Fostering Learning and Adaptation in Resilience Building
FtF	:	Feed the Future
FY	:	Fiscal Year
GBV	:	Gender Base Violence
GoB	:	Government of Bangladesh
GPS	:	Global Positioning System
IFA	:	Iron and Folic Acid
IGA	:	Income Generating Activity
IPTT	:	Indicator Performance Tracking Table
LGD	:	Local Government Division
LGRD&C	:	Local Government Rural Development and Cooperatives
M&E	:	Monitoring and Evaluation
MCHN	:	Mother and Child Health and Nutrition
MDD	:	Minimum Dietary Diversity
MIS	:	Management Information System
MMF	:	Minimum Meal Frequency

MR	:	Measles and Rubella
NGO	:	Non-Governmental Organization
PACC	:	Project Advisory and Coordinating Committee
PEP	:	Poor and Extreme Poor
PLW	:	Pregnant and Lactating Women
PNGOs	:	Partner Non-Governmental Organization
PPS	:	Probability Proportional to Size
SHOUHARDO	:	Strengthening Household Ability to Respond to Development Opportunities
UP	:	Union Parishad
USAID	:	United State Agency for International Development
USG	:	United States Government
U2	:	Under Two Years of Age
U5	:	Under Five Years of Age
VDC	:	Village Development Committee

EXECUTIVE SUMMARY

SHOUHARDO III, implemented by CARE Bangladesh, intends to transform the lives of women and men from 675,000 Poor and Extreme Poor (PEP) households in eight of the poorest and most marginalized districts in Bangladesh. Funded by USAID, the program intervenes in the areas of food security, agriculture, livelihoods, health, water and sanitation, resilience, and women's empowerment. Supported by a robust Monitoring and Evaluation (M&E) system, the Beneficiary Based Sample Survey (BBSS) 2018[1] of CARE SHOUHARDO III was conducted with the PEP households of the Char and Haor regions where the program operates. The BBSS has proved to be a reliable tool to gain insights of the progress and status of the major indicators, which are essential for the overall management of the program.

Given the relative mix of programming activities and the indicators selected to monitor program progress, there were four major sampling frames: i) value chain beneficiaries, ii) other farmers (involved with on-farm IGAs), iii) Comprehensive Homestead Development (CHD), and iv) mothers of under-five (U5) years of age children. These were taken to capture the necessary information to track all annual monitoring indicators for indicators 1-13, and indicators 14-27 were collected from the entire Core Occupational Group (COG) beneficiaries. A total of 1,425 samples were taken this year.

Purpose-wise summary findings of different indicators: From the findings, it is observed that under the five Purposes, progress has been mixed. The overall findings are summarized in the table below.

Purpose 1		Purpose 2	
(good result)	(need to give more attention)	(good result)	(need to give more attention)
Ind-FFP-15: Number of hectares of land under improved technologies or management practices with USG assistance.	Ind-By-product: Average land size of PEP farmers	Ind-Custom-7: Prevalence of children 6–23 months receiving a minimum dietary diversity.	Ind-Custom-21: Percent of mothers who feel it is important to wash hands at five critical times
Ind-FF-9a: Number of farmers and others who have applied improved technologies or management practices with USG assistance		-	Ind-FFP-46: Percent of physically improved sanitation facilities with feces visibly present on the floor, wall, or area immediately surrounding the facility
FFP-16: Value of small-holder incremental sales generated with USG assistance	-	-	-

[1] This refers to the Fiscal Year 2018 (October 2017 through to September 2018)

Purpose 3		Purpose 4	
(good result)	(need to give more attention)	(good result)	(need to give more attention)
Ind-custom-43: Average Coping Strategy Index of the targeted households	-	Ind-Costom-59: Mean decision making score (Index) for woman in household level	Custom 66: Percentage Of Poor & Extreme Poor (PEP) Women Actively Participating In Community Level Organization
Ind-Custom-56: % of households that report that health, gender, and disaster preparedness by actors build on each other are well coordinated and focus on most critical needs.	-	-	-
Purpose 5			
(good result)	(need to give more attention)		
Ind-Custom-71: Percentage of respondents who are satisfied with overall services provided by local govt. (Union Parishad).	-		

1. INTRODUCTION

1.1 Background

Strengthening Household Ability to Respond to Development Opportunities (SHOUHARDO) III is a Development Food Assistance Program (DFAP) funded by the United States Agency for International Development (USAID) and the Government of Bangladesh (GoB). The program is designed to reduce poverty and vulnerability of the Poor and Extreme Poor (PEP) in the north of Bangladesh. SHOUHARDO III commenced in September 2015 and is scheduled to end in September 2020. The program collaborates with the Local Government Division (LGD); the Ministry of Local Government, Rural Development and Cooperatives (LGRD&C), technical partners, and national partner NGOs.

The main goal of the SHOUHARDO III program is to sustainably reduce food insecurity among PEP households. The program adopts an integrated approach in its effort to reduce child malnutrition, and to strengthen household livelihood security and women's empowerment.

SHOUHARDO III is being implemented in 947 villages, 115 unions, 23 upazilas, and 8 districts in northern chars and haors of Bangladesh, and is designed to transform the lives of women and men of 675,000 PEP households. The project focuses on addressing the availability, access, utilization, and stability of food insecurity, as well as the underlying causes that include social injustice, discrimination, lack of participation and voice, and heightened vulnerability to natural disasters and climate change. To achieve this goal, there are five purposes:

Purpose 1: Increased equitable access to income for both women and men, and nutritious food for men, women, boys and girls

Purpose 2: Improved nutritional status of children under five years of age (U5), pregnant and lactating women, and adolescent girls

Purpose 3: Strengthened gender equitable ability of people, households, communities and systems to mitigate, adapt to and recover from man-made and natural shocks

Purpose 4: Increased women's empowerment and gender equity at family and community level

Purpose 5: Increased provision and utilization of public services (i.e. Local Elected Bodies and Nation Building Departments) for communities especially for the PEP

The program is implemented through six national Partner Non-Governmental Organizations (PNGO), with technical and operational guidance from CARE. The program partners with the GoB through Program Advisory and Coordinating Committees (PACC) at multiple levels. It also partners through government provision of technical training provided for field staff and beneficiaries on key topics related to agriculture, livestock, fisheries, health, and disaster risk management.

1.2 Survey Objectives

The primary objective of the Beneficiary Based Sample Survey (BBSS) was to compare changes of indicators set by the SHOUHARDO program over time, and to provide valuable insight to program management and technical staff of where corrective actions are required, and which components are progressing satisfactorily. This survey reviewed progress over FY 2018, comparing achievements against

targets. Of the 70 SHOUHARDO III indicators, the BBSS tracks 26 select indicators (Table 1) to provide an overall sense of how the program is progressing, and to report these in annual report to USAID.

Table 1: Indicators for Annual Monitoring

SL#	Ind. #	Indicator	Sampling frame population for FY2018
Food For Peace Indicators with <u>TOTAL</u> Values			
1	FFP-16	Value of small-holder incremental sales generated with USG implementation	134,561 VC (25,824 Maize, 2,940 Chili, 3,269 Sweet Gourd, 94,687 Goat and 7,841 Duck)
2	FFP-8	Farmer's gross margin per hectare, per animal, per cage obtained with USG assistance	134,561 VC (25,824 Maize, 2,940 Chili, 3,269 Sweet Gourd, 94,687 Goat and 7,841 Duck)
3	FFP-15	Number of hectares of land under improved technologies or management practices with USG assistance	153,644 (134,561 VC+19,083 Agri-Others COG)
4	FFP-9a	Number of farmers and others who have applied improved technologies or management practices with USG assistance	153,644 (134,561 VC+19,083 Agri-Others COG)
5	FFP-53	Number of live births receiving at least four antenatal care (ANC) visits during pregnancy	32,539 Mothers with children 6-23 Month age
6	FFP-77	Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance	194,740[2] (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
Custom Indicators for with <u>PERCENT</u> Values for COG Beneficiaries			
7	Custom	Percentage (%) of beneficiary households with increased food production	153,644 (134,561 VC+19,083 Agri-Others COG)
8	Custom	% of poor & extreme poor (PEP) households accessing markets	153,644 (134,561 VC+19,083 Agri-Others COG)
9	Custom	% of PEPs HHs received health and nutrition services from community level health facilities	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
10	Custom	% of households reporting understanding of elements of disaster preparedness in project defined criteria	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
11	Custom	Percentage of household reporting receiving risk and early warning information	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
12	Custom	% of households that report that health, gender, and disaster preparedness by actors build on each other are well coordinated and focus on most critical needs.	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)

[2] A total of 6,320 beneficiaries were eliminated as they overlapped with the MCHN sampling frame : 4.5% value chain beneficiaries (6,055), 1% other-agriculture beneficiaries (191) and 0.5% off-farm IGA beneficiaries (74)

13	Custom	Percentage of poor & extreme poor women accessing community level platforms for women empowerment	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
14	Custom	Percent of respondents who know a neighbor or friend who has experienced domestic violence (includes: child marriage, physical abuse, sexual harassment, emotional oppression) in the last month	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
15	Custom	Percentage of program participants aware of cost and consequences of Gender Based Violence	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
16	Custom	Percentage of program participants reporting the EKATA platform can resolve Gender Based Violence issues	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
17	Custom	Percentage of poor & extreme poor (PEP) women actively participating in community level organization	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
18	Custom	Percentage of respondents who are satisfied with overall services provided by local govt. (Union Parishad).	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)

Custom Indicator with <u>PERCENT</u> Values for MCHN			
19	Custom	% of pregnant and lactating women taking iron supplements in last 7 days	32,539 Mothers with children 6-23 Month age
20	Custom	% prevalence of diarrhea for children between 6-23 months of age (Percentage of children under age two who had diarrhea in the prior two weeks)	32,539 Mothers with children 6-23 Month age
21	Custom	Prevalence of children 6–23 months receiving a minimum dietary diversity	32,539 Mothers with children 6-23 Month age
22	Custom	Prevalence of children 6–23 months receiving a minimum meal frequency	32,539 Mothers with children 6-23 Month age
23	Custom	Percent of mothers who feel it is important to wash hands at five critical times	32,539 Mothers with children 6-23 Month age
24	Custom	% of children immunized against 8 diseases under GoB protocol by 12 months of age	32,539 Mothers with children 6-23 Month age

Custom Indicators with <u>MEAN</u> Values for all Beneficiary Households			
25	Custom	Average Coping Strategy Index of the targeted households	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)
26	Custom	Mean decision making score (Index) for woman in household level	194,740 (134,561 VC+19,083 Agri-Others COG +14,877 IGA-Off Farm+ 32,539 Mothers with children 6-23 month)

Out of these 26 annual monitoring indicators, the first six (1 to 6) FFP indicators are critical for both the Food for Peace (FFP) Annual Results Report (ARR) and Feed the Future (FtF) annual monitoring.

Accordingly, the FtF BBSS sampling guideline[3] was used to develop the BBSS sampling strategy, particularly for these six indicators, as well as the sample weighting and data analysis formats as described in the FtF BBSS guideline. This report is intended for the CARE SHOUHARDO III program management and program partners to assist in operational planning, taking corrective actions, and decision making. At the same time, this report is intended to satisfy the reporting requirements to both USAID and the GoB.

2. METHODOLOGY

The BBSS survey adopted a *quantitative* approach. Rigorous quality control was enforced throughout the survey including the development of questionnaires and tools, deployment and training of enumerators, and development of the field survey manual. Accuracy of field data was ensured through regular follow-up and random spot checks. The field survey was overall managed by the Team Leader, who supervised two Field Coordinators, and 24 experienced enumerators. Data collection was automated through the use of tablets which were used by all enumerators to collect and enter data, which had built-in validation protocol to improve the accuracy of entries made, as well as provision of recording Global Positioning System (GPS) coordinates of where data was being collected. At the end of each day, the two Field Coordinators reviewed data collected for the day and reached out to concerned enumerators as needed in cases where anomalies were found. A further round of checks was built in where SHOUHARDO III staff performed regular checks on enumerators collecting data, to ensure that interviews were being performed correctly, and that data was being collected accurately.

2.1 Survey Design

Select program outcomes were monitored each year to generate data for annual reporting and to provide timely information to program managers, where 26 Indicator Performance Tracking Table (IPTT) indicators were identified to be tracked annually. The following sections describe in detail the sampling frame, final sample size and sampling methodology for the annual BBSS.

2.2 Sampling Frame of the BBSS

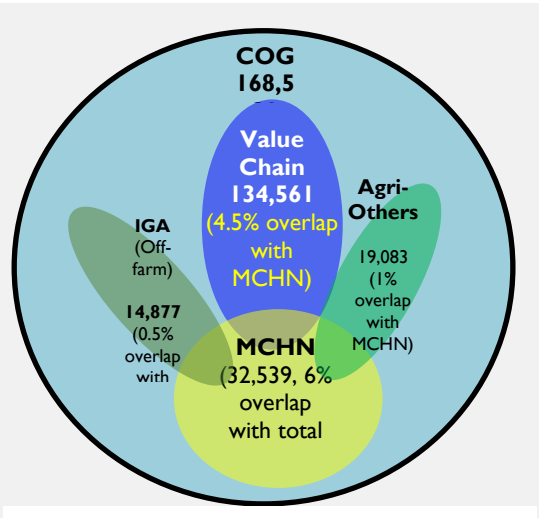


Figure 1 – SHOUHARDO III beneficiary distribution

Over FY 2018, SHOUHARDO III planned to reach all of its targeted 168,521 Core Occupational Group (COG) beneficiary households. Of these, 134,561 were value-chain farmers; 19,083 were "other farmers"[4], and the remaining 14,877 were off-farm IGA beneficiaries. The project further targeted 32,539 MCHN beneficiaries who were found to belong to 4.5 percent of the targeted value-chain households; 1 percent of the targeted "other farmers"; and 0.5 percent of the targeted off-farm IGA households.

The COG survey used Indicators FFP-8 and FFP-16 to exclusively collect data from value-chain beneficiaries, while indicators FFP-9a and FFP-15 was used to collect data from both value-chain and "other farmer" beneficiaries. Of the value-chain beneficiaries, farmers engaged in five commodities – maize (25,824

[3] D. Stukel and G. Friedman; "Sampling Guide for Beneficiary-Based Surveys in Support of Data Collection for Selected Feed the Future Agricultural Annual Monitoring Indicators;" February 2016

[4] This included on-farm Income Generating Activity (IGA), fisheries, Comprehensive Homestead Development (CHD), and field crop beneficiaries

beneficiaries), chili (2,940 beneficiaries), sweet gourd (3,269 beneficiaries), goats (94,687 beneficiaries) and ducks (7,841 beneficiaries). Indicators FFP-8 and FFP-16 were inter-related and disaggregated by the five different value-chain commodities, where representative sample sizes were selected from each of these different groups. The MCHN survey used custom indicators 19 through 24, together with FFP-53 to collect data from the sample group representing MCHN mothers with children between 6-23 months.

The following section describes how sample sizes were determined for this survey.

2.3 Estimation of Sample Size

Randomized sampling was used to select four sample cohorts from – 1. Value-chain beneficiaries, 2. "Other farmers", 3. Off-farm IGA beneficiaries, and 4. MCHN beneficiaries. A two-stage cluster sampling approach was used to select sample cohorts, where villages were selected using the Probability Proportional to Size (PPS) approach. The basic sampling weight was calculated as

$$\text{Weight} = \frac{1}{P_1 \times P_2},$$

where P_1 was the probability of each cluster being sampled and P_2 was the probability of each individual being sampled within each cluster. These probabilities were computed as

$$P_1 = a \times \frac{d}{b} \quad \text{and} \quad P_2 = \frac{c}{a},$$

where a was the cluster population; b the total population; d the number of clusters to be sampled; and c the number of individuals to be sampled in each cluster.

The indicators FFP-9a, FFP-15, FFP-16, FFP-53 and FFP-77 were estimated for totals. Indicators FFP-8 and FFP-16 were calculated with the same parameters. However, FFP-16 was for the total, whereas FFP-8 was for the unit of value chain commodities (mean). Hence, the sample size estimated for FFP-16 was sufficient for FFP-8. Custom indicators 7 to 24 were measured to obtain percentage values (proportions), and the two custom indicators 25 and 26 were calculated for mean values. Using the three different sample size estimation formulas, the following formula was used to estimate the minimum required samples for indicators with totals, proportions and mean values:

A. ***Sample Estimation formula for the indicators (FFP-9a, FFP-15, FFP-16, FFP-53 and FFP-77) with <u>TOTAL</u> value[5]:***

$$n = \frac{N^2 \times Z^2 \times S^2}{MOE^2}$$

where,

Z = critical value from the normal probability distribution (95 percent confidence level: 1.96)

N = total number of beneficiaries in the respective sampling frame

S = standard deviation of the distribution of beneficiary data (approximation: [$\text{indicator}_{max} - \text{indicator}_{min}$]/ 6)

MOE = margin of error (p * target value of indicator)

p = acceptable percentage of error 5.5 percent for FFP-16/FFP-9a and 7.5 percent[6] is considered for all other indicators

[5] D. Stukel and G. Friedman; "FANTA Sampling Guide for Beneficiary-Based Surveys;" February 2016

[6] FTF BBSS guideline suggests acceptable percentage error might be considered up to 10% for annual monitoring surveys. FFP-16 and FFP-9a are critical indicators and enough sample size is important to get accurate estimates. Therefore, 5.5% is considered for these two indicators and 7.5% for the remaining indicators.

B. ***Sample size estimation formula for the indicators (custom indicators 7 to 24) with <u>PERCENTAGE</u> value:***

$$n = \frac{z_\alpha^2 \times p(1-p)}{\varepsilon^2}$$

where,

Z_α = the critical value for normal probability distribution at 95 percent confidence level= 1.96
P = proportion of population with desired attribute
ε = maximum desired sampling error (margin of error) = 7.5 percent = 0.075

C. ***Sample size estimation formula for the indicators (custom indicators 25 and 26) with <u>MEAN</u>[7] value:***

$$n = \frac{z_\alpha^2 \times CV^2}{\varepsilon^2}$$

where,

Z_α = the critical value for normal probability distribution at 95 percent confidence level= 1.96
CV = coefficient of variation = 0.5 (considering standard normal distribution and assuming that the standard deviation is 50 percent of the mean)
ε = Maximum desired sampling error (margin of error) = 7.5 percent = 0.075

Table 2 summarizes the sample frames selected for this survey. Following the BBSS guidance requiring that cluster sizes be between 15-35 beneficiaries, DMA chose to standardize each cluster to 15 beneficiaries.

[7] Department of Statistics, Western Michigan University: http://www.stat.wmich.edu/s216/book/node80.html

Table 2: Final sample size for FY 2018 SHOUHARDO III BBSS

Survey	Sampling Frame	Population	Sample Size	Sample per cluster	No. of clusters
1. COG Beneficiary Survey[8]	A. Value Chain Sampling Frame:				
	1. Maize	25,824	80 ≈ 105	15	7
	2. Chili	2,940	80 ≈ 105	15	7
	3. Sweet Gourd	3,269	80 ≈ 105	15	7
	4. Goat	94,687	80 ≈ 105	15	7
	5. Duck	7,841	80 ≈ 105	15	7
	Total – Value-Chain beneficiaries	134,561	525	15	35
	B. "Other Farmer" beneficiaries	19,083	70 ≈ 75	15	5
	C. Off-farm IGA beneficiaries	14,877	55 ≈ 60	15	4
Total for COG		**158,410**	**660**	**15**	**44**
2. MCHN Beneficiary Survey	D. MCHN (mother of children 6-23 months)	32,539	758 ≈ 765	15	51
TOTAL		**194,740**	**1,425**	**15**	**95**

2.4 Sampling Procedure

Data Management Aid (DMA) adopted the following steps to determine sample clusters and survey respondents, following the FANTA sampling guidelines.[9]

Selection of Clusters: 44 clusters for each of the 3 livelihood sampling frames (value-chain, "other farmers", and off-farm IGA), and 51 clusters for the MCHN sampling frame were selected from the list of SHOUHARDO III program villages where livelihood and MCHN components were being implemented, using the PPS approach.

Selection of Survey Respondents: Survey respondents were selected, before field surveys began, using the Fractional Interval Systematic Sampling approach. Using one of two variants of an equal probability approach, 75 beneficiaries (15 from each cluster) were randomly selected for each of the five commodities that value-chain beneficiaries engaged in, 75 beneficiaries from the "other farmers" group, 60 beneficiaries from the off-farm IGA group, and 765 beneficiaries from the MCHN group.

The FY2018 BBSS sampling frame was constructed from the Program Management Information System (MIS) database system. The MIS database was designed to identify households by beneficiary types, including both COG and MCHN beneficiaries (where the latter was most dominant) with unique identifiers for both the household and the individuals residing in the household. The sampling plan and

[8] 6 percent overlap MCHN beneficiaries with COG were excluded
[9] D. Stukel and G. Friedman; "FANTA Sampling Guide for Beneficiary-Based Surveys;" February 2016

sampling frame were prepared by the DMA statistician, with support from the SHOUHARDO III Senior M&E Coordinator, and another program statistician.

The primary unit of measure was the "beneficiary," as program interventions were targeted to individuals. However, in instances where program interventions intentionally targeted the household, questionnaires were modified to ensure that household level data was captured for these cases.

3. FINDINGS

To remain consistent with previous BBSS surveys, data was collected against a total of 27 indicators (Table 3).

Table 3 – Number of indicators against each Purpose level

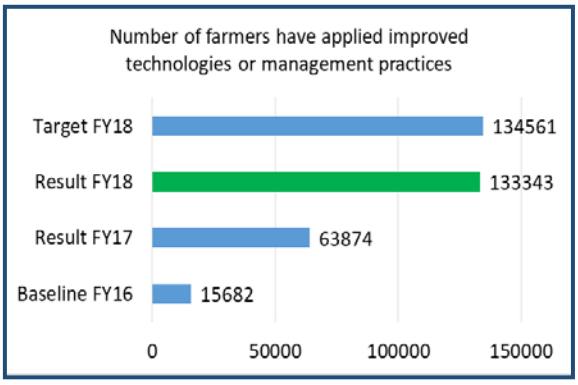
Purpose	Number of Indicators Covered in FY 2017
Purpose 1: Increased equitable access to income for both women and men, and nutritious food for men, women, boys and girls	06
Purpose 2: Improved nutritional status of children under five years of age, pregnant and lactating women and adolescent girls	09
Purpose 3: Strengthened gender equitable ability of people, households, communities and systems to mitigate, adapt to and recover from man-made and natural shocks	05
Purpose 4: Increased women's empowerment and gender equity at family and community level	06
Purpose 5: Provision and utilization of public services (i.e. Local Elected Bodies and Nation Building Departments) for communities especially for PEP increased	01
TOTAL Indicators	**27**

The 27 indicators were categorized and analyzed under the domains of a. Livelihoods and Agriculture, b. MCHN, c. Water and Sanitation, d. Resilience and Shocks, e. Women Empowerment and f. Governance. These are described in detail below.

3.1 Livelihoods and Agriculture

3.1.1 Number of farmers and others who have applied improved technologies or management practices with United States Government (USG) assistance

This indicator measures the total number of direct beneficiary farmers and other primary sector producers (of food and non-food crops, livestock products, wild fisheries, aquaculture, agro-forestry, and natural resource-based products), as well as individual processors (not firms), rural entrepreneurs, traders, and natural resource managers, that have applied improved technologies anywhere within the food and fiber system as a result of USG assistance during the reporting year.



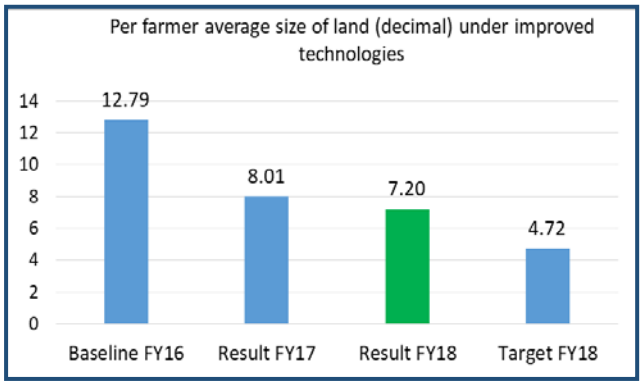


Figure 2 – Adoption rates of improved technologies or management practice

Of the targeted 134,561 farmers, SHOUHARDO III's achievement in FY 2018 was to bring 133,343 farmers (99.09 percent achievement) to adopt improved technologies and management practices. However, these results were quickly challenged as it can be seen that the average land sizes under improved technologies has in fact fallen to 7.20 decimals in FY 2018, compared to 8.01 decimals in FY 2017, and 12.79 decimals in FY 2016. This indicates that the program is not being successful in changing attitudes and behaviors and that further work is required.

3.1.2 Number of hectares of land under improved technologies or management practices with USG assistance

Successful application of technologies and management practices are key for good production as this helps to improve agricultural productivity, water productivity, sustainability, and resilience to climate impacts, especially in SHOUHARDO III operated areas. Figure 3 indicates that the program has exceeded its target of 2,573 hectares, by extending improved technologies to 3,889 hectares (an achievement of 151.16 percent).

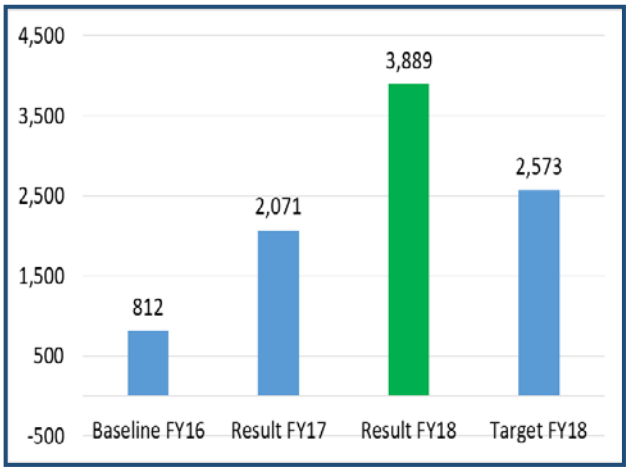
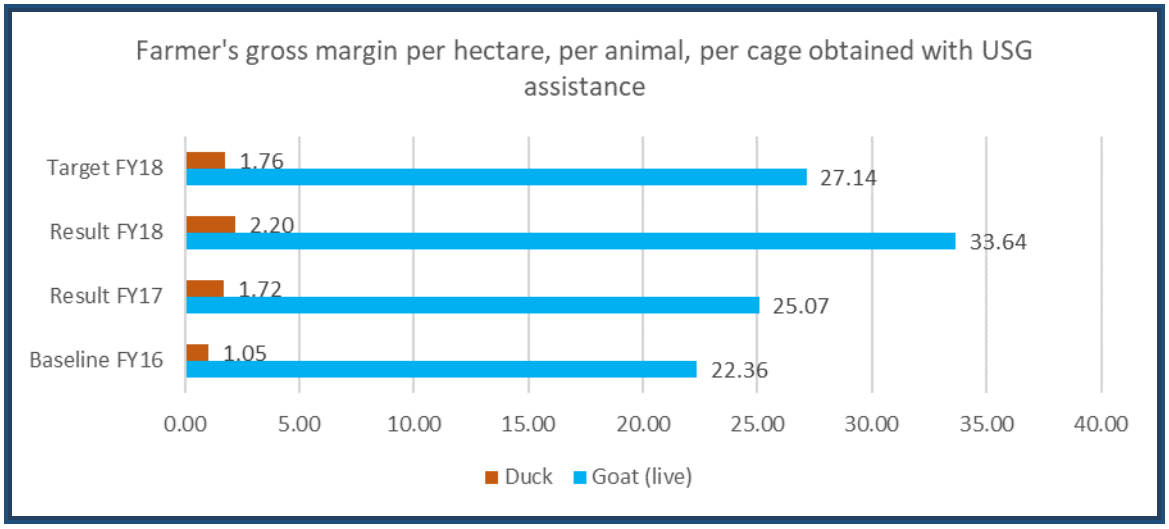
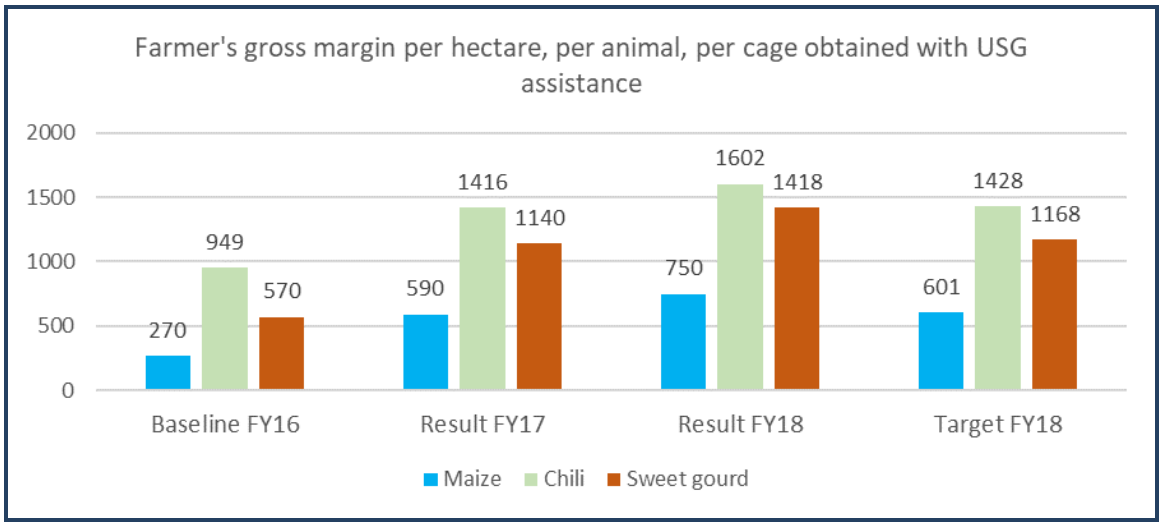


Figure 3 – Hectares of land under improved technologies/management with USG assistance

3.1.3: Farmer's gross margin per hectare, per animal, per cage obtained with USG assistance

Gross margin is defined as the difference between the total value of small-holder production of agricultural products (crop, milk, eggs, meat, live animals and fish) and the cost of producing these items, divided by the total number of units in production. From Figure 4 it can be observed that SHOUHARDO III has exceeded its targets for all five commodities, with a gross margin per hectare achievement of 124.79 percent in maize, 112.18 percent in chili, 121.40 percent in sweet gourd, 125 percent in duck rearing, and 123.95 percent in goat rearing. Although the percentage increase is lowest for chilis, this commodity in dollar value remains the highest at US$1,602.





3.1.4: Value of small-holder incremental sales generated with USG assistance

The value of small-holder farmers' incremental sales includes all sales made by small-holder direct beneficiaries of the targeted commodities, and not just farm-gate sales. The findings revealed that goats

generated the highest incremental sales in FY 2018 at US$5752483 (129.2 percent achievement against target), followed by maize at US$1665296 (209.63 percent achievement against target), chili at US$727119 (984.85 percent achievement against target), and ducks at US$ 354356 (139.11 percent achievement against target). Sweet gourd was the only commodity where SHOUHARDO III yet to fully reach its target (98.91 percent achievement against target).

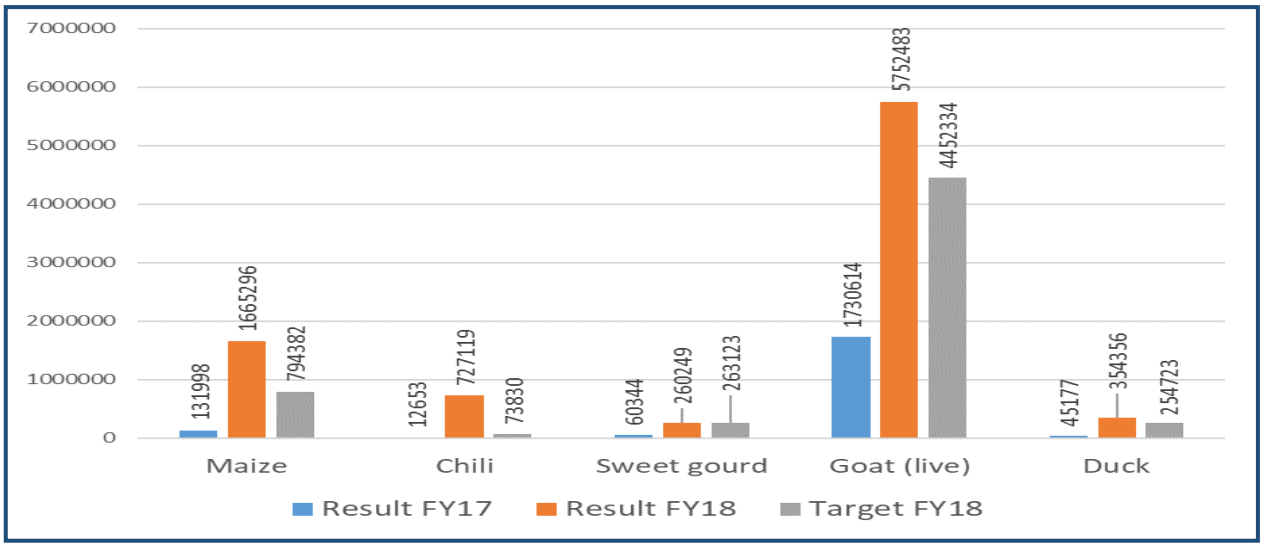


Figure 5 – Value of small-holder incremental sales with USG assistance

3.1.5: Percentage of beneficiary households with increased food production and accessing markets

Figure 6 shows that SHOUHARDO III exceeded targets where 80.1 percent households (against a target of 52 percent) increased their food production (an achievement of 154.04 percent), and 77.1 percent households (against a target of 70 percent) were now accessing markets (an achievement of 110.14 percent).

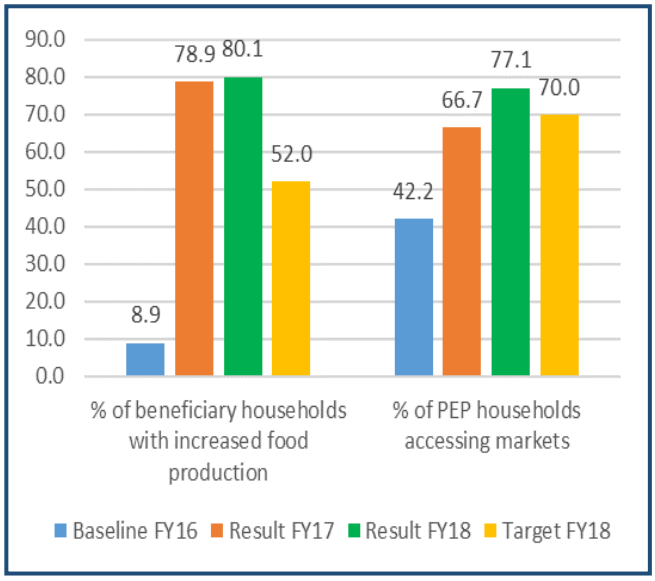


Figure 6 – Increase in household food production and access to markets

3.2: *Maternal and Child Health and Nutrition*

3.2.1: Pregnant and lactating women (PLW) taking iron supplements

Iron and Folic Acid (IFA) has a great impact on both pregnant women, the fetus, and on lactating mothers, by reducing the risks of iron deficiency which lead to complications during pregnancy, childbirth and postnatal periods. Under this component, the program aimed to increase the uptake of IFA among pregnant women (from their third month of pregnancy till child birth) and lactating women (over the first three months after child birth).

Figure 7 shows that the program fell short of reaching its target of 35 percent, in FY 2018, where the program achieved 32.60 percent PLW taking up IFA in the past seven days (93.14 percent achievement).

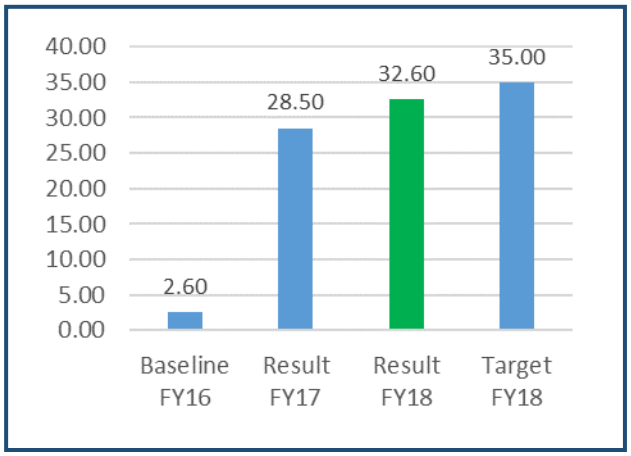


Figure 7 – Percentage of PLW taking IFA in past 7 days

3.2.2: Percentage of children under age two (U2) who had diarrhea in the prior two weeks

Diarrhea remains one of the leading causes of childhood morbidity and mortality in developing countries, where an estimated 1.5 million young children annually die of diarrhea. Diarrheal illnesses affect weight as well as height gains (leading to stunting), with the most dramatic effects observed in cases of recurrent illnesses.

Figure 8 shows that SHOUHARDO III, in FY 2018, achieved its target where only 6.90 percent (against a target of 7 percent) children suffered from diarrhea over the past two weeks (an achievement rate of 101.45 percent).

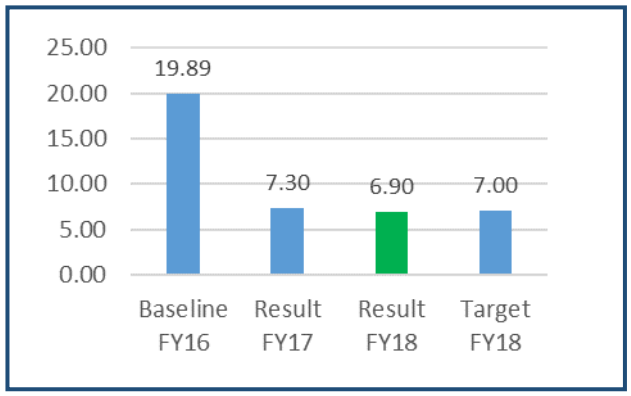


Figure 8 – Percentage of U2 children with diarrhea in past 2 weeks

3.2.3: Prevalence of children 6–23 months receiving a Minimum Dietary Diversity (MDD) and Minimum Meal Frequency (MMF)

MDD and MMF are important outcomes that contribute to improving child health and nutrition.

The dietary diversity, for both breastfed and non-breastfed children 6-23 months, is defined as four or more, out of a possible seven, food groups including grains, legumes, dairy products (only for non-breast-fed children), fleshy foods, eggs, vitamin-A, fruits and vegetables.

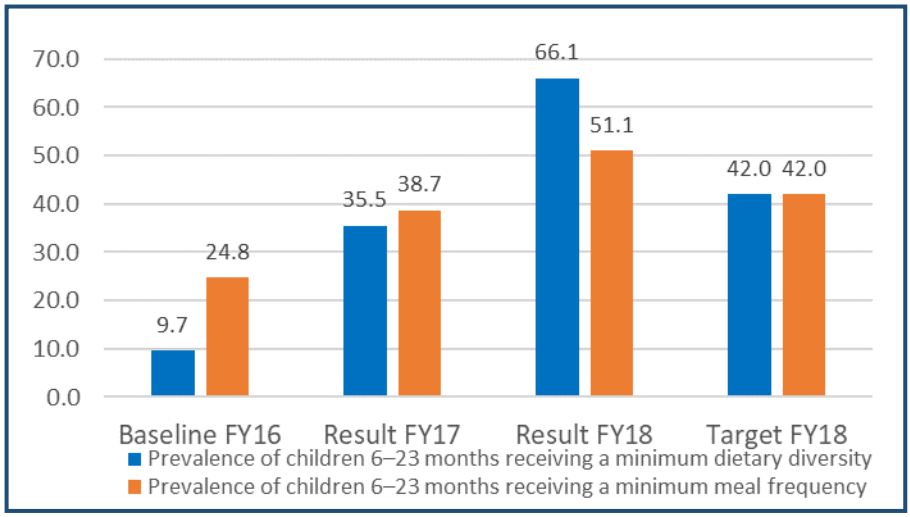


Figure 9 – Prevalence of MDD and MMF

Figure 9 shows that for both MDD and MMF, the program exceeded targets in FY 2018 where 66.1 percent of children met the MDD, against a target of 42 percent (an achievement of 157.38 percent); and 51.1 percent children met the MMF, against a target of 42 percent (an achievement of 121.67 percent).

3.2.4: Percentage of live births receiving at least four antenatal care (ANC) visits during pregnancy

Live birth is the birth of one or more fetuses after 22 weeks of gestation, or weighing 500gms or more, that show signs of life – breathing, cord pulsation, or an audible heartbeat. This indicator does not measure the quality of the ANC visit and does not require that a minimum number of services are received from ANC centers. For reference, the following are the four main categories of ANC: identification of pre-existing health conditions, early detection of complications arising during pregnancy, health promotion and disease prevention, and birth preparedness and complication planning.

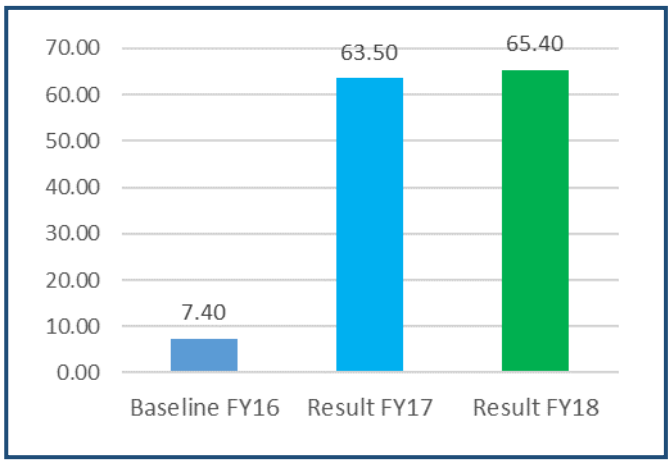


Figure 10 – % of live births receiving at least 4 ANC visits

ANC were performed by skilled health personnel such as doctors, nurses, midwives, skilled birth attendants, and clinical officers. Visits to either trained or untrained traditional birth attendants were excluded.

Figure 10 indicates that SHOUHARDO III ANC visits of pregnant mothers, visiting at least four times, increased by 2.99 percent from FY 2017 to FY 2018, and by 783.78 percent compared to the baseline.

3.2.5: Services received from government health department

There are two indicators under the government health department – a. childhood immunization, and b. health and nutrition services received by PEP households.

Immunization is considered as a precondition for sound health and preventive measures to save children from major life-threatening diseases including tuberculosis, polio, diphtheria, whooping cough, tetanus, hepatitis, HiV (against meningitis and severe pneumonia), and MR (Measles and Rubella).

'Access to' and 'utilization of' health and nutrition services from Health and Family Welfare Centers are crucial for PEP households to increase the rate of immunization, and to gain access to information to help in the reduction in the prevalence of under-nutrition in pregnant women, lactating mothers, under five years of age children, and in adolescent girls.

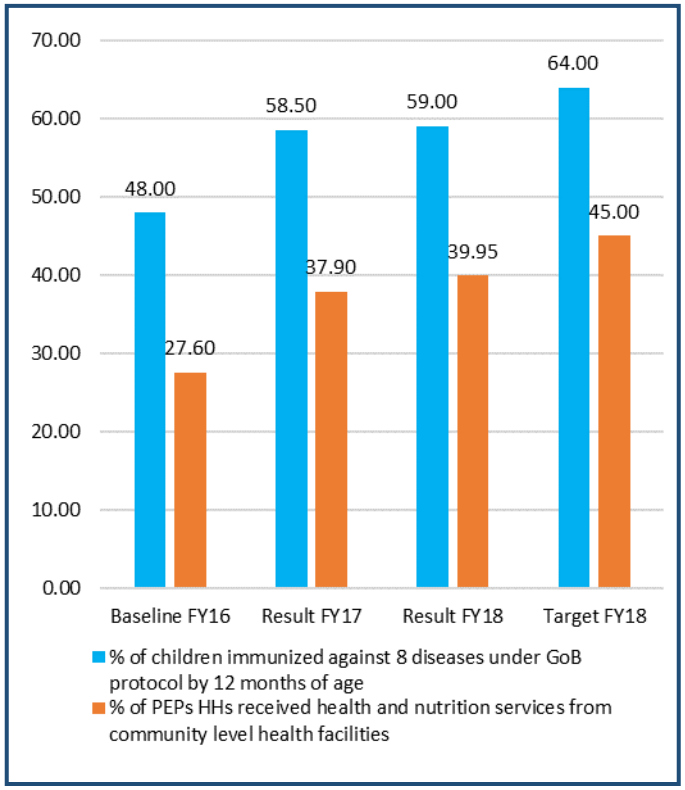


Figure 11 – Rates of immunization and health visits

Figure 11 indicates that the results have not been encouraging over FY 2018, where the program failed to reach either of its targets. For immunization coverage, 59 percent were immunized against eight diseases, against a target of 64 percent (92.19 percent achievement). For the second indicator, 39.95 percent PEP households received health and nutrition services from community health facilities, against a target of 45 percent (an achievement of 88.78 percent). It is recommended that SHOUHARDO III management places greater emphasis on achieving targets against these indicators as they have a direct bearing on reducing a range of life-threatening diseases.

3.3: *Water and Sanitation*

3.3.1: Percent of physically improved sanitation facilities with feces visibly present

This indicator measures the percentage of sanitation facilities that meet the criteria of being "physically improved." Latrines found with feces visibly present on the floor, walls, or the area immediately surrounding the facility, are not considered to be improved.

Observing Figure 12 it can be seen that the percent of unhygienic latrines has risen from 35.50 percent in FY 2017 to 38.30 percent in FY 2018, indicating that the program needs to place greater effort in changing attitudes and behavior within its beneficiaries.

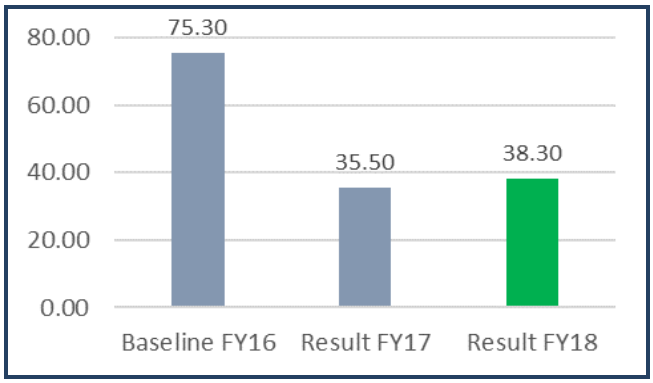


Figure 12 – Percentage of improved sanitation facilities

3.3.2: % of mothers who feel it is important to wash hands at five critical times

Handwashing is an essential component of hygiene behavior and is directly related to reducing the incidence of diarrhea and malnutrition. Again, it appears that there is greater need to invest time in behavioral change programming as Figure 13 shows that SHOUHARDO III, over FY 2018, has only achieved to motivate 12.10 percent of mothers to wash hands at the five critical times, against a target of 20 percent (60.5 percent achievement). It can also be observed that the program has lost ground where in the previous year (FY 2017) 13.50 percent mothers were washing their hands – a decline of 11.57 percent from FY 2017 to FY 2018.

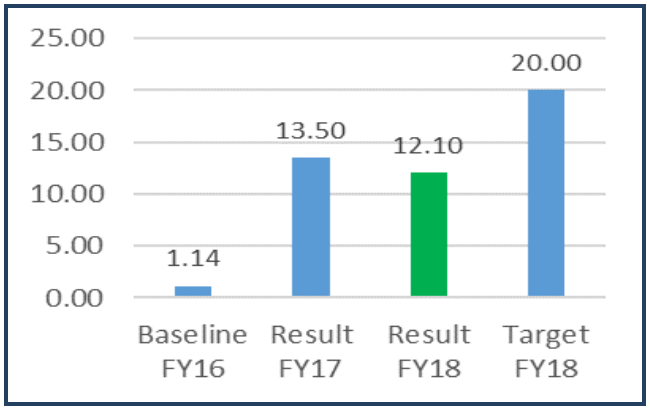


Figure 13 – % of mothers who understand importance of hand washing at 5 critical times

3.4: Resilience and Shocks

3.4.1: Average Coping Strategy Index (CSI) of targeted households

The CSI determines a household's ability to manage and cope with food shortages, and how consumption patterns change at these times. Examples of coping strategies can include reducing the quantity of food households consume, collecting wild food, and/or reducing frequency of meals. The CSI of a household is calculated by multiplying the frequency of coping strategies used in the last 30 days with their respective severity weights. The sum of the scores is then used to determine the CSI. The higher the CSI, the more food insecure a household is.

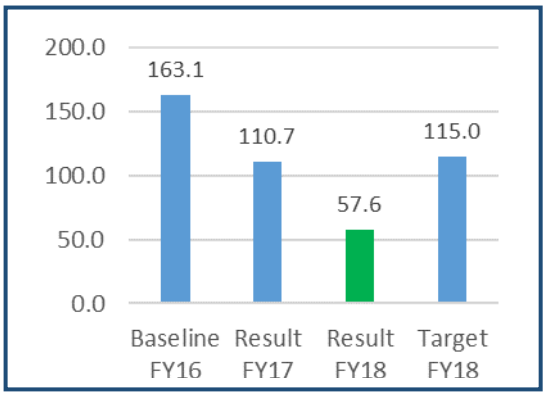


Figure 14 – Average CSI of households

Figure 14 indicates that, in FY 2018, SHOUHARDO III has performed well, where it achieved a CSI of 57.6 compared to a CSI target of 115 (an achievement rate of 199.65 percent). Although this achievement appears to be impressive, it can be argued that the FY 2018 target was set too high given that the program had already achieved a CSI of 110.7 in FY 2017. Accordingly, the target CSI for FY 2018 should logically have been set at a lower value than what had already been achieved in the past year.

3.4.2: % of people using climate information or implementing risk-reducing actions

Under this component, SHOUHARDO III strengthens the resilience of beneficiaries to adapt/implement climate smart improved management/technologies in agriculture, water, health and in Disaster Risk Reduction (DRR) sectors. Figure 15 shows a marked improvement where, in FY 2018, 43.6 percent of beneficiaries were using climate information or implementing risk-reduction actions, compared to only 26.5 percent practicing the same in FY 2017 (an increase of 64.53 percent from last year).

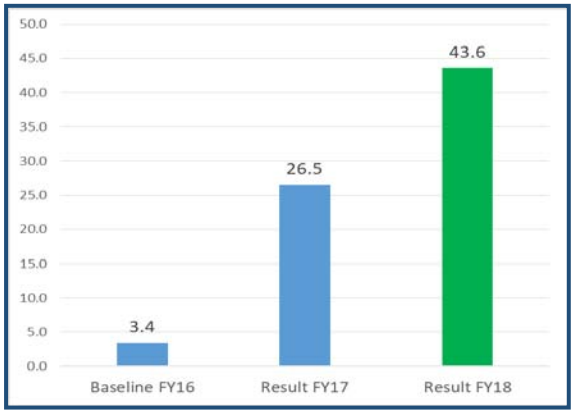


Figure 15 – % of people using climate information

3.4.3: Comparison of major indicators of Resilience and Shocks

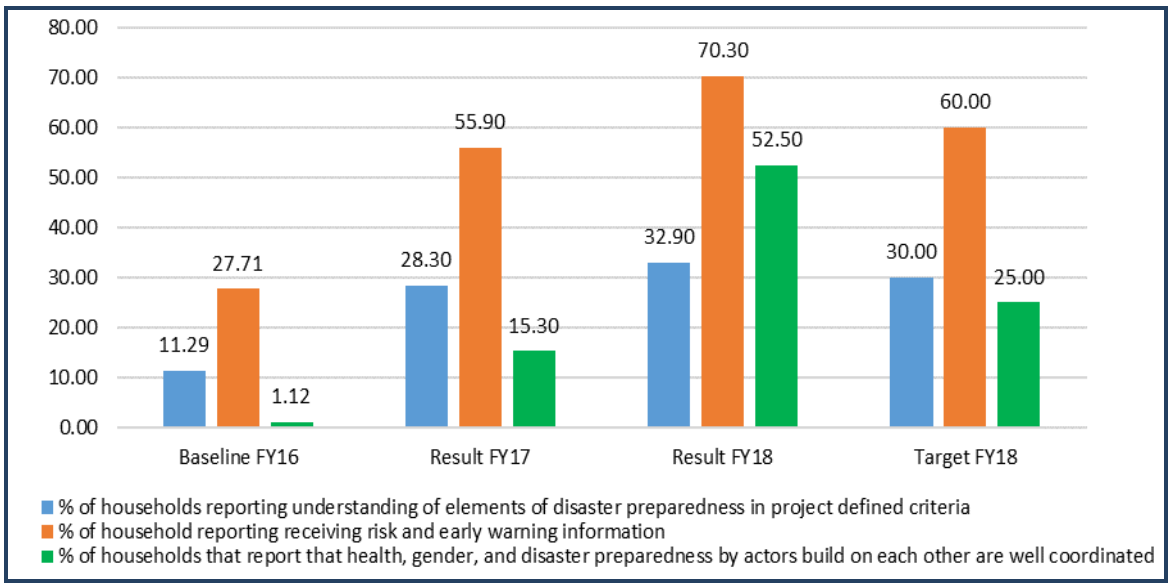


Figure 16 – Comparison of major indicators of resilience and shocks

3.4.4: Percentage of households reporting their understanding of elements of disaster preparedness in project defined criteria

This indicator refers to the people who have an understanding of the local hazards that may cause disasters, how to get prepared, and respond to disasters/shocks if they occur. From Figure 16 it can be seen, in FY 2018, that 32.90 percent of households now report that they have an improved understanding on disaster preparedness activities, where the target was 30 percent (an achievement of 109.67 percent).

3.4.5: Percentage of households reporting receiving risk and early warning information

This indicator refers to the percentage of households receiving risk and early warning information. SHOUHARDO III follows the Bangladesh Meteorological Department (BMD) and Flood Forecasting and Warning Center (FFWC) generated indicators. From Figure 16, it is seen that 70.30 percent households now report that they are receiving risk and early warning information, exceeding the target of 60 percent (an achievement of 117.17 percent).

3.4.6: Percentage of households reporting that health, gender, and disaster preparedness by actors build on each other, are well coordinated, and focus on most critical needs

This indicator refers to beneficiaries who have an understanding of the coordination mechanism among actors (local and international Non-Governmental Organizations (NGO), government departments such as health, youth and sports, social welfare, public health and engineering, and relief and rehabilitation) on response or preparedness activities to local hazards. For this indicator, the survey found that 52.5 percent households were in agreement this is now happening, exceeding the program's target of 25 percent (an achievement of 210 percent).

3.5: Women Empowerment

3.5.1 Mean decision-making score (index) for women at household level

This indicator tracks women's empowerment through their decision-making ability within the household. This includes their level of participation in making decisions on household expenditures, use of income, savings and loans, and purchasing assets. By strengthening women's voice (agency), women and men play more equitable roles within the household. Figure 17 denotes that SHOUHARDO III has made good progress in FY 2018, where it achieved an Index of 36.20, exceeding its target Index of 26 (181 percent achievement).

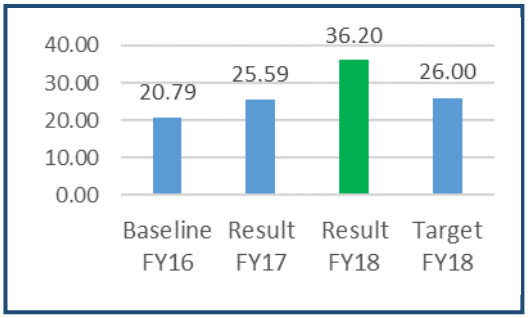


Figure 17 – Mean decision-making score (index) of female beneficiaries

3.5.2: Percentage of PEP women accessing community level platforms for women empowerment

This indicator measures the extent of women's access to community platforms including Village Development Committees (VDC), Empowering Knowledge and Transformative Action (EKATA)

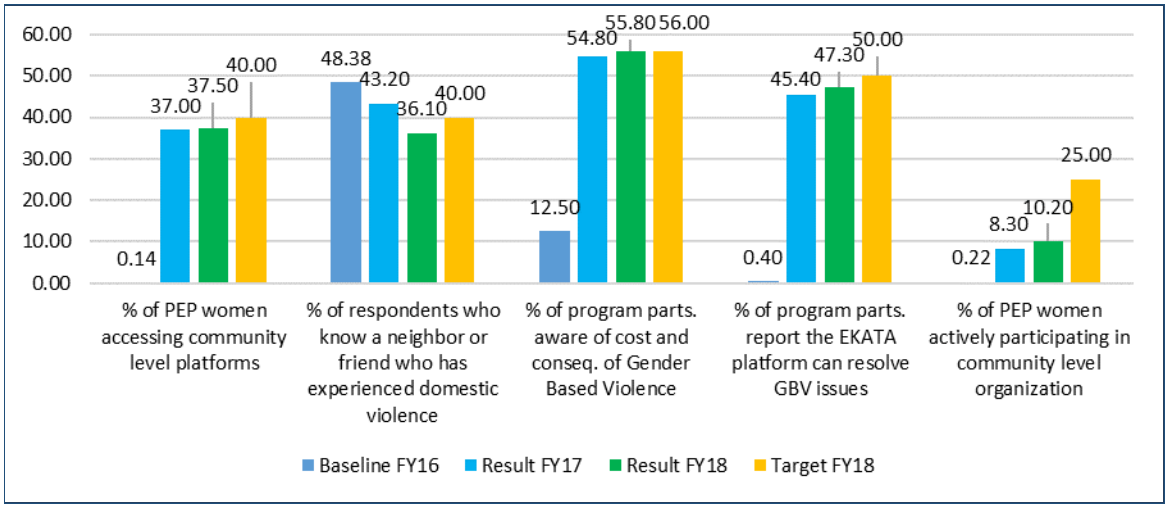


Figure 18 – Women empowerment indicators

groups, and Ending Violence against Women (EVAW) forums. Women's participation in these platforms are indicators of how women's voice and rights are being strengthened. From Figure 18, it can be observed that SHOUHARDO III, in FY 2018, fell short of meeting its target, where 37.5 percent women were accessing community platforms, as opposed to its target of 40 percent (93.75 percent achievement). Given the dedicated effort that SHOUHARDO III places on women empowerment initiatives, through groups such as EKATA, the program needs to reflect why greater progress has not been made in this indicator.

3.5.3: Percent of respondents who know a neighbor or friend who has experienced domestic violence

The main objective of this indicator is to measure the extent of Gender Based Violence (GBV) at the community level, and how successfully the program is confronting this. Figure 18 indicates that the program is successfully reducing the incidence of GBV. The program had targeted to reduce GBV down to 40 percent in FY 2018, against which it successfully managed to reduce GBV down to 36.10 percent (an achievement of 110.8 percent). This is certainly a positive trend and is an important success towards greater women empowerment.

3.5.4: Percentage of program participants aware of cost and consequences of Gender Based Violence

This indicator refers to community participants' knowledge on both the costs and consequences of violence against women. Cost of violence generally analyzes three categories: economic/financial costs, physical costs (such as temporary and permanent disability) and time costs (such as time spent at arbitration or for medical treatment and recovery). The ability of the community to relate costs to different kinds of physical, psychological and sexual violence helps them to understand the trauma a woman experiences from violence. Therefore, tracking this indicator helps to increase community understanding and to break the culture of silence when violence occurs. Figure 18 shows that the program has achieved its target in FY 2018, where 55.80 percent respondents were now aware on costs related to GBV, against a target of 56 percent.

3.5.5: Percentage of program participants reporting the EKATA platform can resolve Gender Based Violence issues

This indicator demonstrates how well the EKATA platform is counteracting GBV across its community. The program is slightly behind in reaching its target, where in FY 2018 47.3 percent community people agreed that EKATA was being effective in resolving GBV issues, against a target of 50 percent (94.6 percent achievement).

3.5.6: Percentage of PEP women actively participating in community level organization

This indicator tracks the number of women from PEP households participating in community level organizations such as VDCs, EKATA groups, and other Community Based Organizations (CBO) that directly influence their livelihoods and basic rights. Through greater engagement of women, SHOUHARDO III aims to strengthen a more equitable relationship between men and women, within households and the broader community. Similar to the previous year (FY 2017), the progress against this indicator has been limited. Only 10.20 percent PEP women were actively participating in community level forums, against a target of 25 percent (only 40.8 percent achievement).

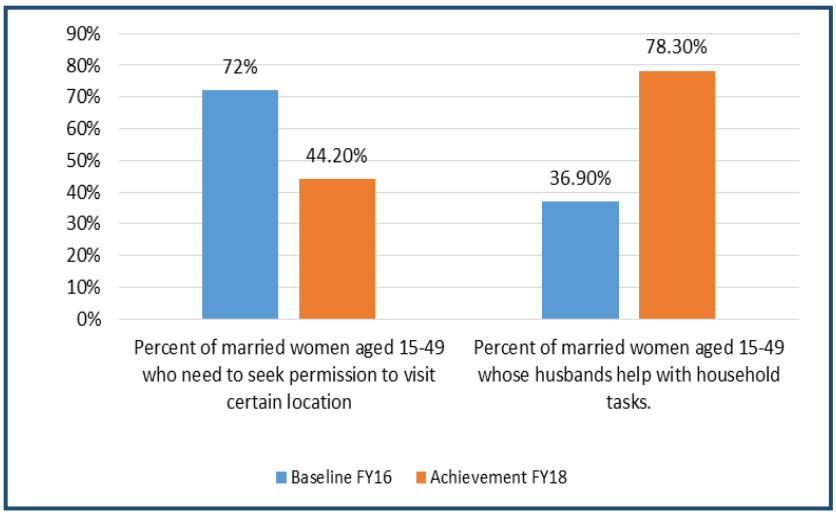


Figure 19 – Additional women empowerment indicators

Under purpose three, two additional indicators were assessed during this BBSS - "percent of married women aged 15-49 who need to seek permission to visit certain locations" and "percent of married women aged 15-49 whose husbands help with household tasks." Although these indicators were not tracked in FY 2017, baseline values against these had been taken at the onset of the program. Figure 19 indicates that the program has been effective in empowering women on both these indicators, where the percent of women needing to seek permission from their husbands for mobility has fallen from 72 percent (baseline) to 44.20 percent (FY 2018) – a fall of 61.39 percent. Similarly, the percent of women who now get help from their husbands on household chores has increased from 36.9 percent (baseline) to 78.3 percent (FY 2018) – an increase of 212.20 percent.

3.6: Governance

The program's governance component plays an important role to strengthen key systemic structures in the areas where SHOUHARDO III operates. This indicator tracks people's satisfaction with the services provided by the local government (Union Parishad). Services include construction/maintenance of small roads, culverts, tube wells, latrines, and implementation of the safety net. Figure 20 shows that 61.20 percent of respondents were satisfied with the performance of their local government, exceeding the target of 46 percent (133.04 percent achievement). This is a positive indication that the program is successfully developing the capacity of Union Parishads (UP), and effectively connecting them to the communities they serve.

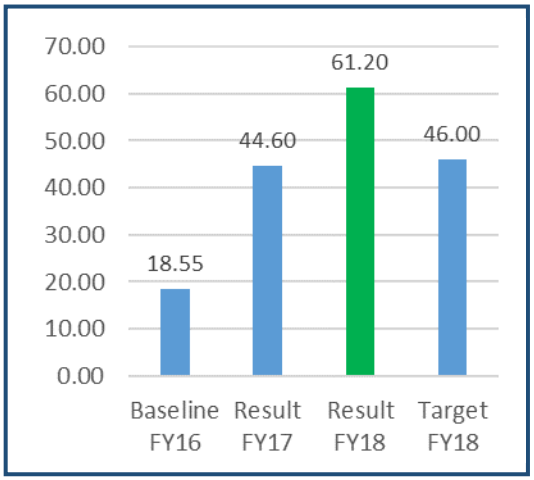


Figure 20 – Percentage of respondents satisfied with local government services

4. CONCLUSIONS

The Beneficiary Based sample survey FY'18 revealed that the program activities/interventions already started generating intended outcome as well as impact among participating households that SHOUAHRDO III work with. Significant success in achieving the targets of most of the indicators is evidence of such claim. The findings of the survey showed that poor and extreme poor farmer's gross margin and incremental sales increased significantly. This is also supported by the evidence based from a different study named FLAIRb, which is a longitudinal study conducted in July 2018. As per the study, household's income increased by 28% which is now BDT 12,758, while in July 2017, it was BDT 9,984. Moreover, almost all of the farmers were found to have applied improved technologies or management practices on the land they are using for growing crops and vegetables, reflecting their knowledge and awareness on use of technologies on farming. Moreover, the percentage of poor and extreme poor households accessing markets has increased to a great extent.

The survey findings unveiled that the most significant achievement is the lower prevalence of diarrhea of 6.9% among children aged 6-23 months from 19.89% in the baseline survey, where children from poor and extreme households were found to be suffering from the disease. In order to reduce malnutrition, two key pathways are Minimum Dietary Diversity (MDD) and Minimum Meal Frequency (MMF) among children are practiced., The program exceeded targets in FY 2018 where 66.1% of children met the MDD, against a target of 42% (an achievement of 157.38%); and 51.1% children met the MMF, against a target of 42% (an achievement of 121.67%).

The program is placing greater emphasis on improving capacity of resilience, including to cope with various shocks among vulnerable households. The FY18 performance data is also quite encouraging, as it indicates households' ability to manage and cope with food shortages improved significantly. The CSI achieved a score of 57.6 compared to a CSI target of 115 (an achievement rate of 199.65%). Similar evidences were also found in the FLAIRb study as the resilience outcome indicator. On the contrary, 48.7% of beneficiaries were using climate information or implementing risk-reduction actions, compared to only 26.5% practicing the same in FY 2017 (an increase of 83.77 percent from last year).

In terms of women empowerment, SHOUHARDO III has made good progress in FY 2018 while in the mean decision-making score (index) for women at household level is very promising, for achieving an index of 36.20, exceeding its target index of 26 (181 percent achievement). This increased level decision making capacity was also observed in FLAIRb study, as it was observed that 25% women are now involved in cash earning compared to the 15% in the previous year. More promisingly, it is observed that 76% percent women can decide alone on self-earned cash while it was 23% in the previous year, almost 230% increase over the baseline. In terms of women mobility, the percentage of women needing to seek permission from their husbands for mobility has fallen from 72% (baseline) to 44.20% (FY 2018) – a fall of 61.39%, on the contrary, the percentage of women who now get help from their husbands on household chores has increased from 36.9 percent (baseline) to 78.3% (FY 2018) – an increase of 212.20%. Although these indicators were not tracked in FY 2017, FFP baseline values against these had been taken at the onset of the program.

In terms of service satisfaction from local government institution, it is revealed that, 61.20% of respondents were satisfied with the performance of their local government, exceeding the target of 46% (133.04% achievement). This is a positive indication that the program is successfully developing the capacity of Union Parishads (UP), and effectively connecting them to the communities they serve. Eventually, it could be said that there has been progress in the program as the socio-economic condition as well as maternal and child health & nutrition scenario of surveyed households have improved significantly.

Overall, it goes without saying that, in most of the cases, improvement is seen except few distinctions. Interestingly, in FY17, a big jump on progress had been observed unlike in FY18, more gradual but consistent progress is seen in the reporting year. It would be worthwhile for the program to assess the current context and come up with rationale while determining FY19 targets, unless if it is not required/indicated otherwise. Some programmatic inquiry as well as adaptive management actions would really be worth to undertake in the areas i.e., mothers' knowledge of hand washing, children immunizations, WASH (improved latrine) and women participation in community level organization. On a concluding note, since the program already passed the mid span, this is the high time to strengthen strategies which are more effective for promoting greater sustainability of interventions & outcome and share those learning both internally and externally.